

Proceedings

International Conference on Traditional Systems of Healing : Bridging Yoga, Varma and Sports Science

ICTYVSS - 2025

15 August 2025

**International Youth Centre
Kuala Lumpur, Malaysia**



Organized by



**Melange
Publications
Puducherry-India**



**Athma Gnanalayam
Chengalpattu- India**

In Association with



**Sai Shine Yoga & Ayurveda
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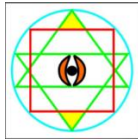
PROCEEDINGS OF
INTERNATIONAL CONFERENCE ON
TRADITIONAL SYSTEMS OF HEALING: BRIDGING YOGA,
VARMA & SPORTS SCIENCE
(ICTYVSS-2025)

15th Aug, 2025

Organized By



MELANGE PUBLICATIONS, PUDUCHERRY - INDIA



ATHMA GNANALAYAM

In Association with



SAI SHINE YOGA & AYURVEDA, MALAYSIA



PERSATUAN SAI SHINE, MALAYSIA

MESSAGE FROM ORGANIZING COMMITTEE

We feel happy and honored to welcome all the distinguished guests and participants for the International Conference on Traditional Systems of Healing: Bridging Yoga, Varma and Sports Science to be held on 15th August 2025 at the International Youth Centre, Kuala Lumpur – Malaysia. This conference is organized by Melange Publications, Puducherry – India.

It gives us immense pleasure to present the proceedings of this International Conference (ICTYVSS 2025). It is a significant event that explores the integration of ancient healing practices with contemporary scientific understanding. Yoga involves physical postures, breathing techniques, and meditation, aiming to improve physical and mental health. Yoga practices have been shown to be effective in managing conditions like chronic pain, stress, and anxiety, according to a study published on the Journal of Yoga and Physical Therapy. Varma, a traditional system of medicine that uses focused pressure on specific points on the body to treat pain, injury, and other ailments. Varma techniques are often used in conjunction with other traditional practices like Ayurveda.

We express our sincere gratitude to all authors, reviewers, session chairs, and members of the organizing and technical committees who contributed to the success of this conference. We also thank our chief guest, special guest, keynote speakers and panelists for sharing their invaluable perspectives.

This conference will be a central hub for esteemed Research experts worldwide and can anticipate unparalleled opportunities to network, gain invaluable insights, showcase their hidden potential, present significant research findings, receive due credit and recognition for their contributions in the field of integrative health. We hope these proceedings serve as a valuable resource and ignite further research and innovation in Yoga, Varma and Sports Science fields.

With Best Regards,
Melange Publications
Puducherry – India

MESSAGE FROM CONFERENCE CHAIR



It is with immense joy and a deep sense of purpose that I welcome you all to the International Conference on Traditional Systems of Healing: Bridging Yoga, Varma & Sports Science (ICTYVSS 2025).

This conference is not just an academic event — it is a movement. A movement toward rediscovering the value of indigenous knowledge, honoring our healing traditions, and reimagining how they can shape the future of healthcare when guided by scientific evidence and interdisciplinary collaboration. The convergence of yoga, varma therapy, and sports science represents more than a thematic alignment; it symbolizes a shared vision of holistic, sustainable, and human-centered wellness.

At ICTYVSS 2025, we aim to create more than a platform for presentations — we are building a space for dialogue, demonstration, and deep connection. We have intentionally brought together researchers, practitioners, scholars, students, and institutions across borders and disciplines, because we believe innovation emerges at the intersections. From paper sessions to live demonstrations and cultural immersion, every aspect of this event has been designed to awaken curiosity and spark new ideas.

To every participant, speaker, and supporter: thank you for believing in the mission of this conference. Let us not merely share knowledge, but co-create a roadmap for integrative health systems that respect tradition, embrace innovation, and place human well-being at the center.

With gratitude and anticipation,

Dr. P. Sudhan

Conference Chair, ICTYVSS 2025
Founder, Athma Gnanalayam, India

MESSAGE FROM ASSOCIATION COMMITTEE



It is with great pride and deep gratitude that I welcome all distinguished guests, speakers, researchers, and participants to the International Conference on Traditional Systems of Healing: Bridging Yoga, Varma & Sports Science (ICTYVSS 2025).

As the Founder and Director of Sai Shine Association of Malaysia and Sai Shine Yoga & Ayurveda, I am truly honored to see this vision come to life. This conference represents a meaningful step in our ongoing journey to revive and reintroduce the richness of traditional Indian healing practices—such as yoga and varma therapy—within the modern health and wellness framework. Our mission has always been to blend tradition with transformation, and ICTYVSS is a reflection of that very spirit.

Through this platform, we aim to inspire cross-disciplinary conversations, promote research-based validation of traditional systems, and foster international collaborations that will elevate the role of integrative health in the global landscape. I extend my heartfelt thanks to all partnering institutions, organizing members, and every individual who has contributed to this collective effort.

May ICTYVSS 2025 serve not just as a conference, but as a movement—toward holistic healing, cultural preservation, and a healthier future for all.

With sincere wishes,
Yogacharani Vasugi Raman @ Vas
Professional Yoga Instructor and Yoga & Ayurvedic Therapist
Founder & Director of
Sai Shine Association of Malaysia and Sai Shine Yoga & Ayurveda, Malaysia

MESSAGE FROM CHIEF GUEST



It is a great honor and privilege to be part of the International Conference on Traditional Systems of Healing: Bridging Yoga, Varma & Sports Science (ICTYVSS 2025).

This conference is a timely and important initiative that highlights the growing relevance of traditional healing systems in today's world. By bringing together yoga, varma therapy, and sports science under one platform, this event promotes a holistic and integrated approach to health and well-being.

In today's fast-paced world, the ancient wisdom of traditional practices—when supported by modern research and scientific validation—can offer powerful solutions to physical, mental, and emotional challenges. I am pleased to see that this conference creates space for meaningful discussions, knowledge-sharing, and collaborative research.

I congratulate the organizing team from Melange Publications, Sai Shine Yoga & Ayurveda Malaysia, and Athma Gnanalayam, India, for their dedicated efforts in putting together such a diverse and insightful program. The presence of international experts, researchers, and practitioners adds great value to this event.

I am confident that the knowledge exchanged here will inspire further research, innovation, and practical applications in the field of integrative health. I extend my best wishes to all participants, presenters, and organizing members for a successful and impactful conference.

Warm regards,

Dr. Rajeev Sukumaran

SRM Institute of Science and Technology - India

MESSAGE FROM CHIEF GUEST



It gives me immense pleasure to join the International Conference on Traditional Systems of Healing: Bridging Yoga, Varma & Sports Science (ICTYVSS 2025) as one of the Chief Guests. This conference serves as a valuable platform to connect traditional healing practices with modern-day scientific research. The inclusion of diverse disciplines such as yoga, varma therapy, and sports science reflects a truly interdisciplinary vision—one that is much needed in today's healthcare landscape.

Our ancient systems carry centuries of wisdom that continue to remain relevant. When paired with scientific evidence and technological advancement, they can play a key role in promoting preventive healthcare, improving recovery, and enhancing overall quality of life.

I commend the efforts of the organizers, researchers, and practitioners who have come together to make this event a success. Special thanks to Melange Publications and all supporting institutions for facilitating such an important dialogue across borders and cultures.

I look forward to the knowledge shared during the sessions and believe that this conference will spark new collaborations, insights, and innovations that benefit both the academic community and society at large.

Wishing all participants a productive and memorable experience.

Warm regards,
Dr. Selvamatharasi, BSC. M.B.B.S
Arut Perum Jothi Sanmarkka Sanggam Klang Selangor – Malaysia

MESSAGE FROM SPECIAL GUEST

I'm truly happy to be invited as a Special Guest to the International Conference on Traditional Systems of Healing: Bridging Yoga, Varma & Sports Science (ICTYVSS 2025). This is a unique gathering that brings ancient Indian healing systems into dialogue with modern scientific thought, and it's heartening to see such multidisciplinary collaboration unfold.

Conferences like this are essential in keeping traditional knowledge alive, not just in theory, but in practical applications that benefit people's health and lifestyles today. The blending of time-tested techniques like varma therapy and yoga with evidence-based sports science demonstrates a forward-thinking approach to wellness. It reflects a growing awareness that true healing must consider the body, mind, and spirit as one.

I sincerely applaud the organizers, speakers, and participants for their commitment to this noble cause. May this event lead to new insights, deepened cultural appreciation, and long-lasting collaborations. I look forward to witnessing the meaningful exchanges and ideas that emerge from these sessions.

Warm regards,
Swamy Sri Jayaprashendra Sarawathy
Puncak Alam, Selangor, Malaysia

MESSAGE FROM SPECIAL GUEST

It is a pleasure and honor to be part of ICTYVSS 2025. This conference stands out for its vision — bringing together centuries-old traditional systems with the lens of modern health science. The integration of yoga, varma, and sports medicine offers a comprehensive approach to preventive and rehabilitative care, which is much needed in today's world.

Such initiatives are not only academically enriching but also socially relevant. When diverse disciplines and cultures unite to share practices and evidence, we take a step closer to accessible and sustainable healthcare models. I am particularly glad to see representation from multiple countries and disciplines, which makes this platform even more impactful.

My heartfelt congratulations to the organizing team and supporting institutions for creating this collaborative space. I wish all delegates a truly engaging and rewarding experience, and I hope this event leaves a lasting impression on everyone involved.

Sincerely,
Swamy Jayaprakash
Sadhguru Peetam, Ooty, Tamilnadu, India

MESSAGE FROM SPECIAL GUEST



I am delighted to be a part of this significant international conference. ICTYVSS 2025 is a timely initiative that bridges cultural heritage and contemporary science to address global health challenges. Traditional systems like yoga and varma have much to offer in today's context of stress, sedentary lifestyles, and rising chronic illnesses.

What makes this conference special is its inclusive nature — where knowledge is not just presented but shared, debated, and demonstrated. It's heartening to see academicians, therapists, students, and wellness professionals come together with genuine curiosity and respect for diverse healing methods. These interactions will surely spark fresh ideas and new collaborations.

I commend the organizers for their vision and efforts in creating this event. May the discussions, presentations, and networking opportunities offered here serve as seeds for future innovation in integrative healthcare and education.

Best regards,

Dr. K.Prisha

Meta Human Yoga Acharya

(World First youngest most world records holders with 101 world records)

MESSAGE FROM KEYNOTE SPEAKER



It is a true privilege to deliver a keynote at the International Conference on Traditional Systems of Healing: Bridging Yoga, Varma & Sports Science (ICTYVSS 2025).

This conference serves as a powerful reminder of the value in harmonizing ancient healing systems with contemporary science. As researchers and practitioners, we have the unique responsibility to preserve our traditional knowledge while also subjecting it to the rigor of scientific inquiry. This dual respect for wisdom and evidence is what makes events like ICTYVSS 2025 so meaningful and timely.

I am honored to contribute to this vibrant exchange of ideas, and I look forward to the many insights, collaborations, and innovations that will emerge. Let us continue to explore, question, and build together a future where traditional healing plays a central role in modern well-being.

Warm regards,

Mr. G. Vasudeo

Secretary, Vivekananda Kendra – NARDEP, Tamil Nadu, India

MESSAGE FROM KEYNOTE SPEAKER



It is an honor to be invited as a keynote speaker at ICTYVSS 2025. This international conference is a testament to the growing recognition of traditional systems of healing and their vital place in 21st-century healthcare.

Yoga, varma therapy, and sports science each represent powerful disciplines on their own — but brought together, they offer a transformative framework for physical, mental, and emotional well-being. What excites me most about this platform is its ability to foster open-minded dialogue, connect generations of knowledge holders, and inspire practical applications that reach communities worldwide.

I thank the organizing committee for this opportunity and applaud everyone participating in this important journey. May this conference mark the beginning of many more bridges between tradition and modern health science.

Sincerely,
Mr. Jeeva Srinivasan
“Thiruvartuppa Isai Maamani”
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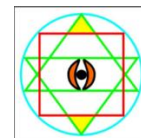
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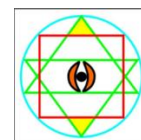


CONTENT

SL. NO	TITLE	AUTHOR NAME	PAGE NO
1	Dance Yoga and Its Impact on Stress Management	S.H. Shwetaa K.N. Karthick Kumar	1
2	An Unified Approach by Synergizing Science of Homeopathy and Yoga in Chronic Health Challenges	Dr.B.Mullai	5
3	The Impact of Yoga and Mindfulness-Based Practices on Self-Compassion: A Mixed - Methods Study	R. Sasi R. Bharani P. Sudhan	9
4	Effect of Krishnmacharya Yoga Tradition on Physical, Mental, Emotional Wellbeing in Teenagers with PCOD: A Study in Hyderabad	Rajeswari Vaddiparthi Dr. Kaarthika P Dr. P. Sudhan Dr. V. Subbulakshmi Srinivasan Konda Gowri K	17
5	Study on Effect of Yogic Practices and Suryanamaskar in Women with Primary Dysmenorrhea	Gowri.K Dr. Ananthan Pillai.S Dr. Sudhan.P Dr. Karthika.P Dr. Subbulakshmi. V Srinivasan Konda Rajeswarivadhiparthi	23
6	Comparative Impact of Mindfulness Yoga vs Traditional Counseling on Smoking Cessation in Two WHO Index Age Groups Across Three Occupational Sectors in Guntur City: A Double-Blind RCT	Venkata Srinivasan Konda Dr. Karthika P Dr. P. Sudhan Dr. V. Subbulakshmi Rajeswari Vaddiparthi Gowri K Dr. Zakir Hussain Dr. Avinash Velamala Dr.K.Malarkanni Dr.K.Nivetha	28
7	Efficacy of Varmam Treatment on Osteoarthritis	Dr.K.Malarkanni Dr.K.Nivetha	40
8	Electromyography in Yoga and Varma Therapy for Sleep Quality among Women Athletes	K. Akshay S. Babu P. Sudhan B. Balamurugan	43
9	Balance Enhances Cognition: An Experimental Study of Balancing Asana in Early Adolescent Children	Kuntal Ghosh Leitanthem Nganthoi Devi	53
10	Spiritual Tourism and Wellness Journeys through Yoga	Dr.Nithya Preetha P	64
11	Veda-Heal Framework: A Value-Based Trauma-Informed Educational Reform Model Aligned with NEP 2020 And UNESCO -SDGs	Dr. G. Janaki Dr. P. Sudhan K. Pothyskaa B. Karthigeyan	68



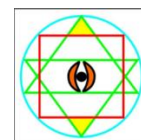
**International Conference on Traditional Systems of Healing:
Bridging Yoga, Varma & Sports Science – 2025**



SL. NO	TITLE	AUTHOR NAME	PAGE NO
12	Yoga for Holistic Living and Lifestyle Transformation: A Pathway to Wellness	Jancy Rani. L	79
13	Effectiveness of Acupuncture and Lifestyle of Asthma Patients	Ambika.R	83
14	Therapeutic Effect of Isometric and Isotonic Suryanamaskar with Mantras: An Analytical Study	Prema Srinagesh	88
15	The Divine Radiance of Grace: The Supreme Spiritual Medicine: The Medicine of Immortality A Philosophical and Spiritual Analysis Based on Vallalar's Teachings	Dr. Selvamatharasi	97
16	Efficacy of Yogic Practices with and without Yoga Nidra on Selected Risk Factors for Smartphone Addiction-Related Ocular Symptoms in College Students	Praveen Kumar M Dr.C.M.Balasubramania n	104
17	Enhancing Life Education through Yoga Practice among School Students: A Case Study of Ever Bright School, Guduvanchery	Geetha Murugesan	111
18	Vallalar's Spiritual Herbology: Integration of Compassionate Siddha Tradition with Botanical Healing	R. Rajauma Maheswari P. Sudhan	115
19	Exploring Yoga's Role in Boosting Memory and Concentration	M.Gomathi	118
20	Healing Beyond Pills: The Role of Yogic and Aerobic Practice in Cyclic Mastalgia	S.F. Mariyam Farzana Sudhan.P V.M. Vinodhini P. Venkatraman T.N. Suresh Ashish Mathew A Prithiha V Arvind M	126
21	Influence of Meditation Garden to Reduce Stress among The Employees of Higher Institutes	Kothai Seshathri Kanimozhi Chakrapani Kalpana B	136
22	Enhancing Academic Stress Management through Daily Yoga Practice at School Level	M. Tamil Selvan	143
23	Improving Pulmonary Health in Undernourished Rural Adolescents through Integrated Yoga and Satvik Diet Practices	Dr. T. Arun Prasanna Dr. M Sundar Mathews P Raj Dr. UV Sankar	146
24	The Effect of Yogic Practice on Enhancing Mindful Attention among Adolescent Girls	Dr. S. Velvizhi	152
25	Integrating Yoga for Mental Clarity and Lifestyle Balance in Modern Living	Yogacharya Shri Murugan ji	156



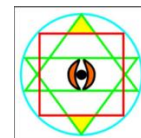
International Conference on Traditional Systems of Healing: Bridging Yoga, Varma & Sports Science – 2025



SL. NO	TITLE	AUTHOR NAME	PAGE NO
26	Yoga as a Complementary Approach for Varicose Veins in Middle aged Men: Randomized Controlled Trail	K. Badri Dr. V. Subbulakshmi	159
27	The Impact of Neuro-Linguistic Programming (NLP) and Yoga Interventions on Stress Levels in Mothers with Adolescent Children	Trisha Ghosh V. Subbulakshmi Manimekalai Narayanan D. Chamundeeswari	166
28	Chanting the Breath: A Pioneering Blend of AUM with Yogic Practices to Amplify Respiratory and Psychological Resilience in Asthma Care	K. Muthulakshmi Dr. P. Malaialagu	172
29	Harnessing Yogic Tools for Hormonal Transitions: A Pilot Study on Bhramari Pranayama and Chakra-Based Meditation for Mental Well-Being in Perimenopausal Women	Jaya Chitra. S Dr. V. Subbulakshmi	183
30	A Study of Mudras for Mindfulness and Their Role in Reducing Burnout, Low Blood Pressure, and Heart-Related Stress Among Middle-Aged Women in India	Latha Dharmalingam Dr.Sudhan.P	188
31	Jeeva Raksha Meets Yoga: Real Wellness for Real Life- A Conceptual Framework	Dr. V. Subbulakshmi Dr. Mahisha	195
32	Yoga, Media, and Mass Communication in the Digital Era	K. Lakshimikanth	197
33	Impact of Yoga Therapy and Varmam on Pain Reduction and Functional Ability in Middle-Aged Men with Musculoskeletal Pain Randomized Controlled Trail	D.R.Balasubramanian Dr. V. Subbulakshmi	200
34	Comparison of Cardiopulmonary Function and Psychological Well-Being Among College Students Undergoing Yogic Practices With and Without Dheergha Swasam: A Randomized Controlled Trial	S. Nagarajan Dr. K. Subbulakshmi	204
35	Improving Lifestyle and Well-Being in Middle Age through Yoga	Jaisri .V	207
36	A Systematic and Scientific Impact of Varied Intergrate Modules of Yogic Practices on Breath Holding Time among Middle Aged Women	Dr.S.Saroja Dr. M. Senthil Kumar	210
37	Effect of Yogic Practices and Aerobic Dance on Achievement Motivation among Basketball Players	S.Anbu Nisha Jeba Soundar Dr.S.Saroja	213



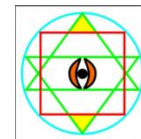
**International Conference on Traditional Systems of Healing:
Bridging Yoga, Varma & Sports Science – 2025**



SL. NO	TITLE	AUTHOR NAME	PAGE NO
38	Effects of Yogic Practices and Combined Yogic-Bokwa Training on Mental Toughness and Goal-Setting Ability Among University Volleyball and Basketball Female Athletes	D.Kanchana Dr.M.Senthil Kumar	217
39	The Effects of Tabata High-Intensity Interval Training on Physical Fitness and Specific Endurance of Football Players	Dr. M. Senthil Kumar	223
40	Effect of SAQ and Ladder Training on Selected Physical Variables and Physiological Variables among College Men Handball Players	S. JeyaSharmila Dr. R. SenthilKumaran Dr .S. Saroja	231
41	Effect of Yogic and Plyometric Training on Resting Pluse Rate among Men Intercollegiate Cricket Players	Loganathan Dr. R. Senthil Kumaran Dr. S. Saroja	236
42	The Role of Yoga in Transforming Physical Education: A Holistic Skill Development Perspective	Natesamurthy V Dr. R Mohana Krishnan	240
43	The Issue with Obesity	Banoth Neela Dr. R. Senthil Kumaran Dr. S. Saroja	247
44	A Systematic and Scientific Impact of Physical Exercises Combined with Yogic Practices on Achievement Motivation of Middleaged Type-Ii Diabetic Patients	V. Preethi Dr.S.Saroja	249
45	Effect of Yogic Practices on Selected Physical Variables among College Overweight Women	C. Vijayalakshmi Dr. S. Saroja	254
46	The Impact of Yoga and Mindfulness on the Mind and Its Implications for Health and Illness	Nuria Tello Jiménez	259
47	Efficacious Methods to Cure Adhesive Capsulitis in Diabetic Patients without Medicine	G.Devi Priya K.Prisha G.Ravi Chandrika	266
48	Human Energy and Energy Medicine: Fundamentals, Therapies and Clinical Applications	Mladenka Kirilova Gabriela Atanasova Sudhan Ponnappan	272
49	The Science and Spirit of Music Therapy: A Pathway to Human Wellness	Jeeva Srinivasan	280
50	Biomechanical Analysis of Precision in Pose: Measuring Trikonasana Angles in Adolescents using Goniometry and Trigonometric Modelling	Sudhan P Revathi K Vasugi Raman Susana Gomez	287
51	Effect of Yoga Practices on Selected Respiratory Parameters among Asthmatic Adolesents Boys	M. Navaneethakrishnan C.Kamatchi	294



International Conference on Traditional Systems of Healing: Bridging Yoga, Varma & Sports Science – 2025



Dance Yoga and Its Impact on Stress Management

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Abstract: Dance yoga and its impact on stress management: This paper explores the role of dance yoga as an effective intervention for stress management. Stress, a natural physiological response, can manifest as either positive (eustress) or negative (distress), with the latter posing risks to physical and mental health. Dance yoga, a fusion of traditional yoga postures, dance movements, and music, offers a holistic approach by integrating physical activity, mindfulness, and emotional expression. Rooted in ancient Indian traditions where dance and yoga served as spiritual practices, modern dance yoga promotes relaxation, emotional release, neuroendocrine balance, and social connectedness. Drawing from existing research in yoga and dance movement therapy, the paper highlights the therapeutic potential of dance yoga in reducing stress levels and improving emotional well-being. A proposed qualitative study design is also presented to assess its effectiveness among high-stress populations. The findings support the inclusion of dance yoga in educational and community settings as a low- cost, accessible tool for fostering resilience, self-regulation, and overall mental health.

Keywords: Dance yoga, stress management, physical and mental health, emotion, therapy.

1. Introduction

Stress is a body's natural reaction to challenges and dangers. Humans experience two kinds of stress, Positive stress and negative stress, Positive stress is a motivating force that enhances the performance even under pressure while negative stress or distress can be harmful to physical and mental health. This article focuses on the impact of dance yoga practice and Stress management with secondary research methodology.

1.1 Dance yoga and stress management

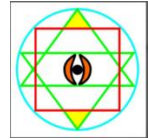
Stress brings an imbalance in both physical and mental health. This is where yoga comes into picture, helps to stabilize your mental and physical health and is more effective than other mechanisms. Yoga helps to give Physical relaxation, Emotional regulation, Mind- Body integration, Long term effectiveness and Easy to do from any place. There are different types of yoga and one of it is Dance yoga. Dance yoga is style of yoga combining both traditional yoga asanas and dance movements and music. Dance yoga is a versatile form of yoga that can be practised by all ages and offers strength, flexibility and alignment with the help of breath control (pranayama) and reduces stress. The inclusion of music and rhythm further enhances the meditative and expressive qualities of the practice. Dance yoga is not limited to a single form but can be seen in various styles such as *Shakti Dance*, *Nia Technique*, and other contemporary yoga-dance hybrids. Unlike traditional yoga, which often emphasizes stillness and alignment, dance yoga allows for spontaneity, fluid transitions, and personal expression.

1.2 History of Dance Yoga

In ancient India, dance and yoga were intertwined, with dance often serving as a form of spiritual practice and worship. Furthermore, many Indian classical dances incorporated asanas (yoga postures) and pranayama (breathing techniques) to enhance physical power and spiritual connection. The integration of movement, spirituality, and physical discipline—core elements of modern- day *dance yoga*—has existed in Indian culture for centuries. Dance yoga, as it is known today, finds its earliest conceptual and symbolic



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manifestations in Indian temple dances, Hindu mythology, and classical art forms, all of which emphasize the union of body, mind, and spirit. The Nataraja: Lord of cosmic dance, Shakti Dance, classical Indian dance forms such as Bharatanatyam, Odissi, Kathak, and Kuchipudi are deeply yogic in nature. These dances are not only artistic performances but also spiritual disciplines (sadhana) involving Asanas (Poses), Mudras (Hand gestures), Pranayama (Breath control), Dhyana (Meditation). These forms were historically performed in temples as acts of devotion, connecting the dancer's body and breath with the divine—a practice conceptually identical to what dance yoga seeks to achieve.

1.3 Impact of Dance yoga on stress management

Dance yoga has multiple mechanisms to regulate stress responses and promote emotional well-being.

1.3.1 Neuroendocrine Regulation

Yoga based breath control activates the para-sympathetic nervous system, reducing cortisol levels and induces relaxation. Aerobic movements in dance yoga similarly stimulates the release of endorphins and dopamine, neurotransmitters associated with pleasure and stress reduction.

1.3.2 Emotional Expression

Dance facilitates external emotional release. Movement synchronized to music enables practitioners to express repressed feelings, which can be particularly beneficial for individuals experiencing stress-related emotional blockages.

1.3.3 Mindfulness and Cognitive Distraction

The meditative aspect of yoga and the rhythmic repetition in dance both promote mindfulness, helping individuals remain anchored in the present moment. This reduces rumination—a cognitive process closely associated with anxiety and stress.

1.3.4 Social and Communal Support

Group dance yoga sessions promote a sense of connection, counteracting the feelings of isolation and loneliness that often accompany chronic stress. The shared experience of movement and music enhances emotional bonding and collective well-being.

1.4 Scientific Evidence and Therapeutic Potential

While direct empirical research on dance yoga is emerging, existing literature on yoga and dance movement therapy (DMT) provides strong support for its stress-reducing potential:

- A meta-analysis published in *Psychological Medicine* (2017) concluded that yoga significantly lowers stress markers and improves anxiety symptoms.
- *Frontiers in Psychology* (2021) reported that dance movement therapy improves mood and reduces psychological distress in both clinical and non-clinical populations.
- The *Journal of Integrative Medicine* highlights that combining physical movement with music and mindfulness, as in dance yoga, enhances both emotional and physiological resilience.

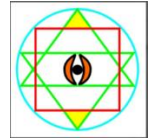
These findings suggest that dance yoga, as an integrated intervention, may be particularly effective for individuals experiencing both psychosomatic stress symptoms and emotional dysregulation.

2. Research Methodology

An exploratory and descriptive research methodology was employed to examine the relationship between dance yoga and its impact on stress management. To further investigate this relationship, a qualitative study can be conducted involving a sample group of individuals who are regularly exposed to high-stress



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environments, such as High school Students, mountaineers, doctors, teachers, and corporate employees. The participants can be divided into two groups: a control group that does not engage in dance yoga, and an experimental group that participates in daily one-hour dance yoga sessions over a period of ten days. Comparative analysis of the outcomes from both groups will help assess the effectiveness of dance yoga in alleviating stress.

3. Result

Scientific research indicates that dance yoga has a significant impact on both physical and mental health. As a practice that combines expressive movement and emotional release, dance allows individuals to externalize inner feelings, thereby promoting psychological well-being. A well-structured qualitative study can be conducted to assess the extent of dance yoga's impact on stress management. It is hypothesized that a comparison between a group practicing dance yoga and a control group not engaging in the practice would reveal a notable difference in stress levels, with the dance yoga group experiencing greater stress reduction.

4. Conclusion

Dance yoga represents a holistic, multidimensional approach to stress management. By uniting the internal focus of yoga with the outward expression of dance, it addresses both the physiological and psychological dimensions of stress. While further empirical research is warranted to establish its clinical efficacy, existing evidence from related disciplines strongly supports its therapeutic value. As mental health challenges continue to rise globally, practices like dance yoga offer an inclusive and empowering solution for individuals seeking balance, expression, and emotional resilience.

5. Recommendation

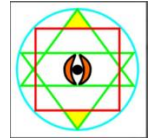
Dance yoga is a highly adaptable practice suitable for a wide range of populations, including office workers experiencing burnout, students under academic pressure, individuals recovering from trauma or emotional hardship, and older adults seeking gentle yet uplifting physical activity. Its low cost, minimal equipment requirements, and flexible format make it a practical and accessible intervention across various settings, such as wellness centers, educational institutions, therapy clinics, and community health programs. Integrating dance yoga into school and college curricula could be especially beneficial. Introducing this practice during class hours can equip students from a young age with effective tools for managing stress, fostering emotional resilience, and promoting overall well-being. Early exposure to such techniques may not only improve academic performance but also prepare students to navigate the pressures of professional and personal life more effectively in the future.

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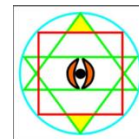
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An Unified Approach by Synergizing Science of Homeopathy and Yoga in Chronic Health Challenges

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Abstract: Introduction: Although in recent times, the field of alternative medicine is hugely growing, Homeopathy plays a pivotal role in treating illnesses faster and effective way. This study further goes a step beyond to add Yoga and nutrition in daily life of patients to attain the path of cure in a gentle way. The main objective here is to see the effective Homeopathic principles along with Yoga therapy in long standing illnesses. Methods: A randomized, single blind placebo-controlled study conducted in order to compare the results while giving yoga therapy and nutrition along with homeopathic medicines with the group of patients given only Homeopathic medicines and with the group given placebo only. Results: Among the selected 60 cases, 20 cases of group 1 were given individualized homeopathic medicines alone considering their nature of illness as a whole along with proper planning of yoga, exercise and nutrition showed considerable improvement in their wellness symptomatically and psychosomatically. They all have gained the positive approach of life while they get their symptoms subside along with being self-aware of their progress of health, while they get the perfect equilibrium, harmony in the journey of healing , they ultimately attain the personal power to navigate life without disease in future too. The patients belonging to group 2 comprising 20 participants who were given the Homeopathic medicines also showed considerable improvement in their major presentation of illness while still needing care for the indisposition to be treated in a broader way. And the group 3 having considered as control group which did not receive any kind of intervention of medicine or yoga practice did not show any progress towards healing compared with other two groups. Conclusion: Homeopathy, being the second most opted system of medicine chose by patients across the nations, is the need of the hour to be authentic in all possible ways to give fastest and reliable treatment in this century. With this study we have learnt that the intertwining of yoga and nutrition with Homeopathy has largely impacted in mindful healing of every human being. For which the future generation is solely dependent on our rational decision of transforming healthy genes along with healthy earth ever possible.

1. Introduction

Homoeopathy is a holistic, logical and philosophical system of individualistic drug therapeutics, based on well proved scientific principles, especially the Law of Similars. The history of homeopathy begins with the discoveries of its founder Samuel Hahnemann (1755-1843), a German physician. Hahnemann first coined the word “homeopathy” (“homoios” in Greek means *similar*, “pathos” means *suffering*) to refer to the pharmacological principle, the law of similars, that is its basis. The cardinal principle of homoeopathy ‘Similia Similibus Curentur’ (Latin) which is more popularly known as the Law of similars, means - Let like be treated by likes. It signifies a system of treatment in which the prescription is based on the similarity of symptoms of the patient, to those of a drug substance from the Homoeopathic Materia Medica. Similarity includes the similarity of not only the presenting complaints, but also of their modalities, constitution, temperament, exciting & fundamental causes as well. It refrains from including the similarity of remedy with a nosological diagnosis.

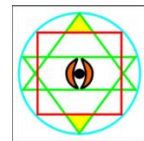
Other Fundamental Principles of Homoeopathy

Law of Simplex - Only one single, medicine must be used at a time and there is no scope of polypharmacy.

Law of Minimum - The dose should be minimum; to stimulate the human organism & to produce perceptible



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Principle of Drug-proving - As opposed to animal experimentation, homoeopathy stresses upon human experimentation.

Principle of Drug-dynamization - The medicines are not prescribed on physiological dose, but potentised medicines are used to cure diseased individuals. Dr. Stuart Close writes, "Homeopathic potentisation is a mathematico-mechanical process for the reduction, according to scale, of crude, inert or poisonous medicinal substances to a state of physical solubility, physiological assimilability and therapeutic activity and harmless, for use as homeopathic healing remedies.

Principle of Chronic diseases - Hahnemann writes in Aphorism 78 of 6th edition of Organon, "The true natural *chronic* diseases are those that arise from a chronic miasm.

Principle of Vital Force - Homoeopathy believes in the existence of a force, which animates the human organism & the harmonious functioning of the body is because of its equilibrium.

2. Introduction to Yoga

Yoga is a perfect practical system of self-culture. It is an exact science which aims at the harmonious development of the body, mind, and soul. Yoga is the discipline of the mind, senses and physical body which helps in the coordination and control of the subtle forces within the body. It brings peace and everlasting happiness.

Almost every corner of the world is now familiar with the world yoga. Though it has gained a lot of popularity, there are still many misconceptions remaining about yoga amongst the people. Basically, the yoga is getting popularity as an alternative means for a good health these days. Generally, yoga is explained as a way of living. It is true but only when we are concerned about health. But yoga is not limited only to health aspect of life. It basically deals with our existence. Yoga is the answer for all the questions we get about our existence. It answers the fundamental questions of our life – what? Why? How? When? Every human being on the earth irrespective of cultural and religious background faces these fundamental questions as it is the basic nature of human being. So when these basic confusions or doubts get cleared one comes to know the reality of life, the reality of oneself, reality of existence. Then the person will lead a happy and satisfied life. And this is nothing but the purpose of yoga.

References of Yoga in Shrimad Bhagavad Gita

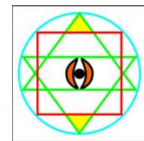
Another important scripture which deals with yoga is Shrimadbhagavdgita. Bhagavadgita presents a very vast explanation of yoga. In fact, the whole of the Geeta deals with yoga. Bahgavadgeeta is basically the talk between Lord Krishna to his disciple, also a friend Arjuna in between the battlefield of Kurukshetra. When Arjuna was distracted from his Dharma Lord Krishna taught him about what Dharma actually is? And he taught him about Jnanyoga, Karmayoga, Bhakti yoga and Rajayoga to make Arjuna understand Dharma.

In his teachings, Lord Shri Krishna defines yoga as:

Actions did with an expectation of its reward bring bondage. If the action is done without any thirst for reward, one get purification of heart and ultimately knowledge of the Self. In Geeta Lord Krishna very well that how we can practice yoga while performing the action. Our actions i.e. karma can also be done in a yogic way. Which is called Karmayoga. In today's scenario, Karmayoga is the best way of practicing yoga because when people are advised to practice yoga asana and pranayamas etc the only reason they have to give is lack of time. Ultimately yoga is practiced to give happiness and satisfaction then why should not we get this by doing our routine work? Lord Krishna says that skill in action is also yoga. If we observe when we help someone for any reason then it gives us happiness that cannot be explained we feel a sort of satisfaction. But when we are said or ordered to get some work done then after doing that we do not feel that kind of satisfaction which we feel while serving others because there is no expectation or thought of reward or of praise in serving i.e. karma yoga. Whatever kind of work we are doing to earn our livelihood



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we must do that with a sense of service. So that we maintain promptness in our work because when we think it is a service then a sense of responsibility develops within us towards society and our egocentric attitude slowly starts to diminish thereby developing purity inside which leads us to the ultimate reality. As discussed earlier yoga is not a goal in itself rather it is a medium to achieve the goal. Here Lord Krishna tells Arjuna to perform an action with the evenness of mind without bothering about victory and defeat, and this evenness of mind is nothing but yoga. And that is what all yoga is about. It is nothing but to concentrate the mind having control over all your senses. The capacity to make decisions in critical situations is only possible with the evenness of mind. When the mind is disturbed then naturally one will not be able to concentrate. It is not only about making decisions, rather it is all about to get the ability to analyze every situation in every possible way, but it is also to stay firm with your decision even in drastic situations, to be able to know what is right and what is wrong. The 'samatva' state of mind helps you to know or realize what your 'Dharma' (righteous duty) should be in a particular situation. This is what the problem Arjuna was suffering in the middle of the battlefield. Health is the balanced state of body & mind of an individual maintaining equilibrium within itself and its environment. During health, one has normal sensations & functions because both body & mind work in a harmonious way (homeostasis). Human being comprises multidimensional levels - physical, mental, emotional, spiritual & social, and even a slight disturbance at any of these levels cause ripples of effect, to flow in any direction. This study focusses on the greater health care shift in combining these two divine gifts of the world. While the highly potentised homeopathic medicine can uproot the very basic cause of disease, Yoga therapy paves a smooth way for its disintegration.

The objective of this study focuses on:

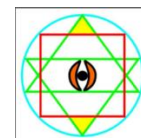
- Finding effective way of managing common chronic diseases who come to our out patient departments.
- Proving that the gentle and rapid way of treatment methods lies in simple Homeopathic medicines and Yoga therapy

3. Materials and Methods

This study was carried out in the outpatient clinic in the period of June 2021 till present. Patients who were reported regularly to the clinic, provided also to be followed the advices given regarding yoga practices done to come under this category. The study includes cases satisfying the criteria belonging to the chronic diseases, who are suffering from one or more symptoms for a long period of time chronically for which they opt for homeopathic treatment

All those patients selected having chronic diseases, is divided into three groups. For the group 1 along with the properly selected similar homeopathic remedies, the yogasanas are advised from professionally trained yoga master, also the diet and nutrition advised based on the duration of their illness, age, symptom presentation, severity of illness and also their economics status. The group 2 is given only the similar homeopathic medicine, the group B given similar homeopathic medicine along with the practice of yoga and the group C were considered as control whilst they received none of the above intervention. For the group 2 only the carefully selected homeopathic medicines with the help of repertory is given. The potency selection and dosage were according to the standard guidelines given under the homeopathic principles. The group 3 peoples were not given above listed therapy or treatment for the duration. They were kept as control groups and observed with only placebo.

The parameters used to access the progression of treatment were investigative procedures like blood sample analysis, sonography methods, Urine Examination and other necessary investigation according to the diagnosis.



4. Results and Discussions

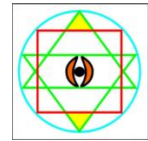
Based on the follow up criteria each case was analysed of their extent of improvement. Every patient is monitored according to the standard method of follow up criteria assessment as prescribed by Dr Samuel Hahnemann in his second prescription. Rather the group 2 people who were given the similar Homeopathic treatment found to have a rapid and gentle way of adapting to the good environment provided by them to their own body and so having presented with rapid healing of the disease symptoms. Their post treatment investigative results show normal findings. The group 2 patients who received the similar Homeopathic medicines gave considerable improvement with good outcome in their investigative reports. Also those patients who were not given proper diet and exercise in their routine daily life had been though cured of the illness presented but had lingering symptoms which are not corrected without supplement of good nutrition and flexibility to body. Coming to the group 3 peoples who didn't receive any kind of support were found to be having no relief in any of their symptoms.

5. Conclusion

While comparing these three study groups, we are able to appreciate the major differences given by Yogasana practice and nutrition in group 1 patients who had the rapid line of healing in their treatment assessment criteria than compared with other two groups. They all had their general symptoms improve well in short period of time in a remarkable way. They had significant improvement in their way of living, handling emotions, consciously navigating life in stressful situations and being disease free in the path of future.

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The Impact of Yoga and Mindfulness-Based Practices on Self-Compassion: A Mixed - Methods Study

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Abstract: This mixed-methods study explores how yoga and mindfulness-based practices influence self-compassion among adults. Using quantitative measures from 100 participants—including the Self-Compassion Scale and Mindful Attention Awareness Scale—and qualitative semi-structured interviews with 10 participants, this study investigates correlations and subjective experiences. Quantitative findings indicate a strong positive correlation between frequency of practice and self-compassion, with practice frequency significantly predicting self-compassion scores. Thematic qualitative analysis revealed enhanced emotional regulation, present-moment awareness, and reduced self-judgment as key mechanisms. These results underscore the integrative value of yoga and mindfulness as accessible interventions to promote psychological resilience through self-compassion.

Keywords: self-compassion, yoga, mindfulness, emotional regulation, mixed-methods, mental health

1. Introduction

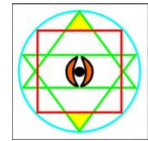
1.1 Background

Nowadays individuals worldwide face mounting psychological stressors arising from rapid social changes, technological advances, and economic pressures. These stressors contribute to a global surge in mental health concerns such as anxiety, depression, and chronic stress (American Psychological Association, 2020). According to the World Health Organization (2021), more than 300 million people suffer from depression globally, highlighting a pressing need for effective, sustainable mental health interventions.

Within this context, mind-body practices such as yoga and mindfulness have gained prominence as holistic approaches that address the interconnected nature of physical, emotional, and mental well-being (Field, 2011; Khoury et al., 2013). Rooted in ancient Eastern traditions, these practices foster awareness and acceptance of the present moment, cultivating emotional balance and resilience (Kabat-Zinn, 2003).

A particularly relevant psychological construct associated with well-being is self-compassion, defined as the capacity to treat oneself kindly and understandingly during times of difficulty, rather than with harsh self-criticism or avoidance (Neff, 2003). Distinct from self-esteem, self-compassion offers a stable, unconditional source of emotional support, enabling individuals to face challenges without exacerbating suffering through negative self-judgment (Neff, 2011). Research consistently links higher self-compassion to reduced anxiety and depression, improved coping, and enhanced life satisfaction (Barnard & Curry, 2011; MacBeth & Gumley, 2012).

Yoga and mindfulness practices emphasize present-moment awareness and acceptance, foundational to developing self-compassion (Gard et al., 2012). However, while several studies investigate the psychological benefits of these practices independently, few examine their combined influence on self-compassion using an integrated mixed-methods approach. Understanding both statistical relationships and experiential narratives is vital to appreciating how these practices transform self-relationship and well-being.



1.2 Purpose of the Study

The purpose of this study is to examine the relationship between the frequency of yoga and mindfulness-based practices and levels of self-compassion. Specifically, the study aims to determine whether there is a significant positive correlation between the frequency of yoga/mindfulness practice and self-compassion levels. In addition, it investigates whether the frequency of practice significantly predicts self-compassion when controlling for mindfulness. Furthermore, the study seeks to explore participants' subjective experiences regarding how these practices influence their self-compassion, providing a deeper understanding of the personal and emotional impacts of engaging in yoga and mindfulness. This mixed-methods approach aims to integrate both quantitative and qualitative insights to offer a comprehensive understanding of the influence of these practices on self-compassion.

2. Literature Review

2.1 Defining Self-Compassion and Its Psychological Significance

Self-compassion, as conceptualized by Neff (2003), encompasses three core components:

- Self-Kindness vs. Self-Judgment: Treating oneself with warmth and understanding, especially during failure or pain, rather than harsh criticism.
- Common Humanity vs. Isolation: Recognizing that suffering is a universal human experience, countering feelings of isolation.
- Mindfulness vs. Over-Identification: Maintaining balanced awareness of painful thoughts and emotions, without exaggeration or avoidance.

This multifaceted construct contrasts with self-esteem, which often depends on positive self-evaluation and can fluctuate based on external validation. Self-compassion offers an unconditional, stable way of relating to oneself, particularly during difficult moments (Neff, 2011).

Empirical research consistently links self-compassion to numerous positive psychological outcomes. For example, Barnard and Curry (2011) reviewed multiple studies demonstrating its inverse relationship with depression, anxiety, and stress, and its positive association with life satisfaction and motivation. Self-compassion also mediates the impact of negative experiences, such as trauma or failure, on psychological distress (MacBeth & Gumley, 2012).

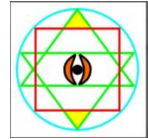
Moreover, self-compassion promotes adaptive coping strategies such as acceptance and positive reframing, and reduces maladaptive responses like rumination and avoidance (Neff, 2011; Breines & Chen, 2012). It has been associated with greater emotional resilience and healthier interpersonal relationships (Neff & Beretvas, 2013).

2.2 Yoga: Philosophical Foundations and Psychological Benefits

Yoga, with origins in ancient Indian spiritual traditions, is a multifaceted practice integrating physical postures (asanas), breathing control (pranayama), meditation (dhyana), and ethical principles (yamas and niyamas). While modern Western yoga often emphasizes the physical component, traditional yoga encompasses mental and spiritual dimensions aimed at holistic well-being (Feuerstein, 2003).

Extensive research highlights yoga's physiological and psychological benefits. Field (2011) summarized that yoga reduces stress biomarkers (e.g., cortisol), improves autonomic nervous system regulation, and enhances mood and quality of life. Yoga's focus on breath control and body awareness cultivates interoceptive awareness, which supports emotional regulation by fostering a non-reactive stance toward internal experiences (Gard et al., 2012).

Yoga interventions have demonstrated effectiveness for reducing symptoms of depression, anxiety, and PTSD across diverse populations (Cramer et al., 2013; Uebelacker et al., 2017). The meditative aspects of yoga encourage mindfulness and acceptance, which overlap with the psychological pathways for increasing self-compassion (Shapiro et al., 2007).



2.3 Mindfulness: Conceptual Overview and Therapeutic Applications

Mindfulness involves purposely paying attention to present-moment experiences in a non-judgmental way (Kabat-Zinn, 2003). Clinically, mindfulness-based programs such as Mindfulness-Based Stress Reduction (MBSR) and Mindfulness-Based Cognitive Therapy (MBCT) have robust evidence supporting their use for stress, depression, and anxiety reduction (Khoury et al., 2013).

Neuroscientific research reveals that mindfulness practice alters brain regions involved in emotional regulation, self-referential processing, and attentional control (Tang, Hölzel, & Posner, 2015). These neuroplastic changes provide a biological basis for the therapeutic effects observed.

Psychologically, mindfulness fosters an attitude of openness and curiosity toward one's internal experience, which reduces identification with negative thoughts and feelings. This quality is intrinsically linked to self-compassion, as mindfulness allows painful experiences to be observed without exaggeration or avoidance (Neff, 2011).

2.4 Previous Research Linking Yoga, Mindfulness, and Self-Compassion

Prior studies suggest that both yoga and mindfulness interventions increase self-compassion. For example, a randomized controlled trial by Shapiro et al. (2005) showed MBSR significantly improved self-compassion in healthcare professionals. Similarly, yoga practitioners report higher self-compassion and emotional well-being than non-practitioners (Jevning et al., 2015).

However, most research is limited to quantitative designs or small qualitative samples, focusing on either yoga or mindfulness separately. Few studies integrate both approaches or use mixed methods to capture the complexity of the self-compassion development process.

2.5 Rationale for Mixed-Methods Design

Quantitative methods provide statistical validation of associations but lack insight into lived experiences and underlying mechanisms. Qualitative research explores participants' subjective meanings and transformations, offering depth and context (Creswell & Plano Clark, 2017).

Combining these approaches in a convergent design allows data triangulation and a holistic understanding of how yoga and mindfulness foster self-compassion, which can inform tailored interventions and public health initiatives.

3. Methodology

3.1 Research Design

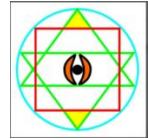
This study used a convergent parallel mixed-methods design, collecting quantitative and qualitative data simultaneously. Quantitative results and qualitative themes were integrated during interpretation to complement and enrich findings (Creswell & Plano Clark, 2017).

3.2 Participants and Sampling

A snowball sampling technique was employed to recruit a total of 100 participants from yoga studios, mindfulness centres. Initial participants who met the inclusion criteria—engaging in at least one session per week of yoga or mindfulness practice over the previous month—were invited to refer others in their personal and professional networks who also met these criteria.

This referral-based approach facilitated the recruitment of a wider and more diverse group of individuals actively engaged in yoga or mindfulness practices.

The final sample consisted of 68 females and 32 males, with ages ranging from 18 to 50 years ($M = 32.4$, $SD = 8.7$). Participants reported educational qualifications ranging from high school diplomas to postgraduate degrees. In order to gain deeper insight into individual experiences, a purposively selected sub-sample of 10 participants from the broader pool volunteered for in-depth qualitative interviews. These



participants were chosen to represent a diversity of age, gender, and type of practice (yoga, mindfulness, or both). Additionally, a few other participants who expressed interest but were not part of the interview subset contributed anecdotal feedback via follow-up emails and informal conversations, enriching the qualitative component of the study.

Table 1: Participant Demographics

Variable	Category	Frequency	Percentage
Gender	Female	68	68%
	Male	32	32%
Age Group	18–25	28	28%
	26–35	40	40%
	36–50	32	32%
Education Level	High School or Below	12	12%
	Undergraduate	58	58%
	Postgraduate	30	30%
Practice Type	Yoga Only	40	40%
	Mindfulness Only	20	20%
	Both Yoga & Mindfulness	40	40%

3.3 Instruments

3.3.1 Self-Compassion Scale (SCS)

The SCS (Neff, 2003) measures self-compassion across six dimensions using 26 items scored on a 5-point Likert scale (1 = Almost Never to 5 = Almost Always). The scale has demonstrated excellent reliability and validity in diverse populations.

3.3.2 Mindful Attention Awareness Scale (MAAS)

The MAAS (Brown & Ryan, 2003) is a 15-item scale assessing dispositional mindfulness on a 6-point scale (1 = Almost Always to 6 = Almost Never). Higher scores reflect greater mindfulness.

3.3.3 Practice Frequency

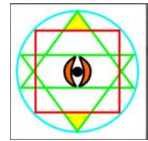
Participants reported the average number of yoga or mindfulness sessions per week over the past month.

3.4 Qualitative Data Collection

Semi-structured interviews were conducted with 10 participants to explore their experiences with yoga and mindfulness, focusing on emotional regulation, self-relations, and self-compassion. Interviews lasted 10–15 minutes, audio-recorded with permission, and transcribed verbatim.

Sample interview questions included:

- How has your yoga/mindfulness practice affected your relationship with yourself?
- Can you describe any changes in how you handle difficult emotions since beginning these practices?
- In what ways, if any, do these practices influence your feelings of kindness or judgment toward yourself?



3.5 Procedure and Ethics

Quantitative data were collected via Google Forms, distributed through yoga and mindfulness groups. Interviews were conducted in-person or by video call. The Institutional Ethics Committee approved the study protocol. Participants provided informed consent and confidentiality was maintained throughout.

3.6 Data Analysis

3.6.1 Quantitative

Data were analysed using SPSS v23. Descriptive statistics summarized demographics and scale scores. Pearson's correlation coefficients examined relationships among practice frequency, mindfulness, and self-compassion. Simple linear regression tested the predictive value of practice frequency on self-compassion.

3.6.2 Qualitative

Thematic analysis followed Braun and Clarke's (2006) method: familiarization with data, coding, theme generation, theme review, theme definition, and reporting. Two independent coders ensured reliability.

4. Results

4.1 Quantitative Findings

4.1.1 Descriptive Statistics

Variable	Mean	SD	Range
Practice Frequency (sessions/week)	2.7	1.2	1 – 7
Self-Compassion Scale (SCS)	3.4	0.75	2.0 – 4.8
Mindfulness Scale (MAAS)	3.7	0.70	2.1 – 5.0

4.1.2 Correlation Analysis

Pearson's correlations revealed:

Variables	1	2	3
1. Practice Frequency	—		
2. Self-Compassion (SCS)	.79**	—	
3. Mindfulness (MAAS)	.83**	.77**	—

** $p < .001$

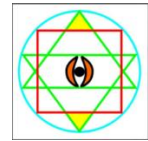
Practice frequency strongly correlated with both self-compassion and mindfulness, suggesting regular engagement in yoga/mindfulness practices is associated with greater self-compassion and mindfulness.

4.1.3 Regression Analysis

Regression analysis tested whether practice frequency predicted self-compassion:

Predictor	β	SE	t	p	R ²
Practice Frequency	0.72	0.08	9.00	<.001	0.62

Practice frequency significantly predicted self-compassion scores, accounting for 62% of the variance. This indicates that greater engagement in yoga/mindfulness practice robustly predicts higher self-compassion.



4.2 Qualitative Findings

Thematic analysis yielded three major themes illuminating how participants experienced increased self-compassion through their practices:

1.Cultivating Emotional Regulation and Acceptance

Participants described learning to observe emotions without immediate reaction or judgment. Yoga postures combined with breath awareness helped them “step back” from distressing feelings:

“When anxiety hits, I focus on my breathing and body sensations. It feels like I can hold space for my emotions without getting overwhelmed or criticizing myself.” (Participant 4)

This mindful presence facilitated acceptance rather than avoidance, creating a foundation for self-kindness.

2.Developing Present-Moment Awareness and Non-Judgment

Engagement in mindfulness meditation and yoga helped participants stay rooted in the present, preventing rumination or harsh self-criticism:

“I notice my tendency to judge myself harshly. But in meditation, I learn to notice these thoughts as just thoughts, not facts. It’s freeing.” (Participant 7)

This decentred awareness promoted a gentler internal dialogue.

3.Experiencing a Shift Toward Self-Kindness and Common Humanity

Many participants reported an increasing tendency to treat themselves with warmth, recognizing that struggle is part of the human experience:

“Yoga teaches me to listen to my body and honor my limits. I’ve become more patient and forgiving with myself, especially during setbacks.” (Participant 1)

This recognition reduced feelings of isolation and self-criticism.

5. Discussion

5.1 Interpretation of Quantitative Findings

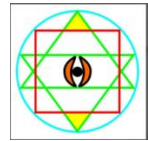
The strong positive correlations between practice frequency and self-compassion corroborate prior literature emphasizing the psychological benefits of yoga and mindfulness (Shapiro et al., 2005; Jevning et al., 2015). The regression model indicates that regular practice is a significant predictor of self-compassion, underscoring the importance of consistency in cultivating a compassionate self-attitude.

The concomitant high correlation with mindfulness suggests that mindfulness skills mediate the relationship between practice and self-compassion. Practitioners develop heightened awareness and acceptance of present-moment experience, which forms the psychological basis for reducing self-judgment and fostering self-kindness.

5.2 Qualitative Insights

The thematic analysis enriches understanding of the mechanisms underpinning these quantitative relationships. Participants’ narratives reveal that yoga and mindfulness facilitate emotional regulation, non-judgmental present awareness, and recognition of shared humanity—all components foundational to self-compassion (Neff, 2003).

The qualitative data highlight the embodied nature of these changes, as participants engage bodily awareness and breath control to manage distress. This mind-body integration may distinguish yoga from other self-compassion interventions by anchoring emotional regulation in somatic experience (Gard et al., 2012).



5.3 Theoretical Implications

Findings support the integration of Eastern contemplative traditions with Western psychological models of self-compassion. They suggest that cultivating embodied mindfulness through yoga and meditation enables transformation of habitual self-critical patterns into compassionate self-relations, enhancing psychological resilience.

5.4 Practical Implications

Given the accessibility and cost-effectiveness of yoga and mindfulness, these practices can be widely implemented in community and clinical settings to promote mental health and well-being. Programs targeting self-compassion through embodied mindfulness could reduce stigma and improve outcomes for populations vulnerable to self-criticism and stress.

5.5 Limitations and Future Research

The cross-sectional design limits causal inference; longitudinal or experimental studies are needed to verify temporal relationships. The sample, drawn from a single geographic region and self-selected for practice, may limit generalizability. Future research should explore diverse populations and integrate physiological measures (e.g., heart rate variability) to triangulate findings.

6. Conclusion

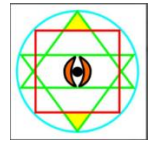
This mixed-methods study demonstrates that consistent engagement in yoga and mindfulness practices significantly enhances self-compassion among adults. Quantitative results reveal strong correlations and predictive relationships, while qualitative data illuminate transformative experiences of emotional regulation, presence, and self-kindness. These findings contribute to a growing evidence base supporting holistic mind-body approaches as accessible, effective strategies to cultivate psychological resilience through self-compassion.

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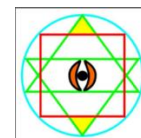
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Effect of Krishnamacharya Yoga Tradition on Physical, Mental, Emotional Wellbeing in Teenagers with PCOD: A Study in Hyderabad

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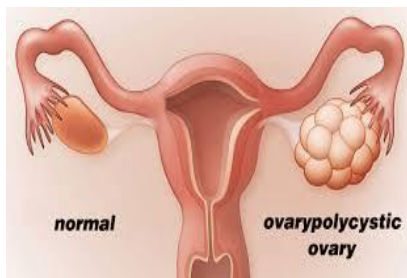
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Abstract: Polycystic Ovarian Disease (PCOD) is the commonest and complex endocrine disorder that is causing of anovulation and becoming a leading cause of infertility and menopausal irregularities in later stages of life. PCOD has a profound impact on the physical and emotional health and functionality of young teenage girls. It is essential that signs and symptoms of this disorder be diagnosed earlier to prevent long term complications. **Aim of the study:** Though medicines help improve the symptoms of PCOD, the recurrence rate is very high after withdrawal of the drug which causes great economic burden for family. Along with exploring genetic and environmental factors, a 3 month study on how it can be healed with ancient practices like Yoga which is more sustainable. With a regular practice we can achieve 1) Prana Chalanam: Movement of Prana throughout the body 2) Samnam (Pacification): relief of the symptoms 3) Prana Shodhanam: Concentrating Prana on specific parts for a length of time that creates purificatory/cleansing effect. **Conclusion:** Despite progress in the field of medicine and research, young girls and women still suffer from the problem of PCOS and PCOD due to unawareness. A monitored long term study regionally in Hyderabad will surely contribute to the need of reaching out to people who are unaware of these findings in the research. This study and analysis will help in evidence-based lifestyle interventions for PCOS and PCOD management.

Keywords: PCOD/Krishnamacharya Tradition/Mindfulness/Panchamaya Concept of Healing

1. Introduction

Polycystic Ovarian Disease (PCOD) is the commonest cause of anovulation and a leading cause of infertility. PCOD is associated with long-term health problems that affect physical, mental and emotional wellbeing. PCOD affects an estimated 8–13% of reproductive-aged women. Up to 70% of affected women remain undiagnosed worldwide. It runs in families, but there are ethnic variations in how it manifests itself and how it affects people in different populations. Pregnant women with this condition may be at a higher risk of pre-term labor and premature birth, which can have adverse effects on the health of both the mother and the baby.



So it is very crucial and important that early recognition and intervention should be explored to help the adolescence navigate this problem with confidence and optimism building up their self-esteem, body image and overall well-being.

2. Literature Review

The literature review on PCOD indicates lack of significant findings on anthropometric measures (BMI, waist circumference, body weight, body composition). Many studies do not consider Ovarian morphology as a variable for PCOD though it is a critical test. The need for comprehensive hormonal and metabolic assessments such as cortisol levels, thyroid function, insulin resistance etc, also have not been considered in many studies. Absence of laboratory investigations like hormonal assays or genetic testing to explore the biological mechanisms of PCOD. Psychological effects like stress, mood, mental health have not been explored using standardized Psychological Assessment tools. Very important lack of long-term mental health evaluations like depression, anxiety, quality of life assessments need a follow up. Social Wellbeing, relationships, work-life balance, social factors and their impact on the health of women also need to be considered. Absence of long-term follow-up studies to assess sustained effects on their behaviour and lifestyle changes. Lack of diverse populations in terms of age, ethnicity and socio-economic background, which limits generalizability. Mostly small sample sizes and homogeneous populations have been researched upon which limits the study to narrow age range and limited ethnic diversity. There is need for longitudinal studies and more randomized control trials (RCTs) to rigorously compare yoga with other interventions to assess long-term effects. These gaps highlight the need for more comprehensive and diverse research that takes into account the biological, psychological and social aspects of PCOS management.

Krishnamacharya Yoga Tradition:

Sri. Tirumala Krishnamacharya an Indian yoga teacher who was a great scholar and ayurvedic healer. He is considered as one of the most important gurus of modern yoga, and is often called "Father of Modern Yoga" for his wide influence on the development of VINYASA yoga.

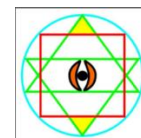
Sri. T. Krishnamacharya "believed that Yoga is greatest gift to the world by India." His teachings always reflected his conviction of how yoga can be a combination of both a spiritual practice and healing at different levels. His style of yoga is now known as "Vinyasa Krama Yoga". In this style poses are woven one into the other to engage the mind and breath. Surya namaskars are the best example for a Vinyasa Flow.



Krishnamacharya placed highest value on *Yoga Sutras* of Patanjali and Nathmuni's *Yoga Rahasya*. Krishnamacharya's approach towards a student was unique. He taught yoga in "Viniyoga" style.



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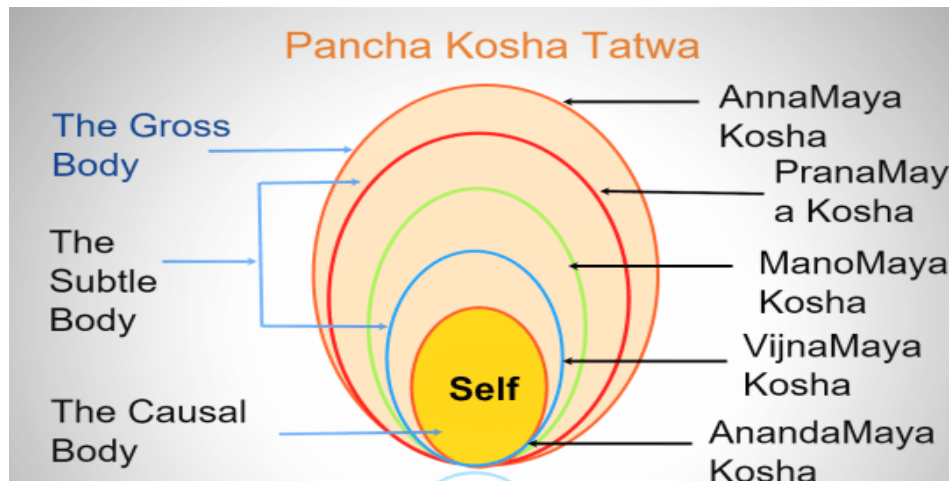
“Viniyoga” means proper application of step by step sequence for developing complete practice according to the age-old principles of yoga. All the elements of Yoga – poses, counter poses, conscious breathing, meditation and philosophy are included. The greatness of this is, Krishnamacharya felt this formula not only applies to Yoga but all facets of our life. The most important aspect of this style of yoga is that the student has to be "taught according to his or her individual capacity at any given time". For Sri Krishnamacharya, the path of yoga meant that for different people we need to give different practices customised to his or her need according to the Parinama (Changes) in the life, and each person has to be taught in a manner that he or she can comprehend. Krishnamacharya's students included many of 20th century yoga's most renowned and influential teachers: Indra Devi; K. Pattabhi Jois; B. K. S. Iyengar; T. K. V. Desikachar; Srivatsa Ramaswami; and A. G. Mohan.

3. Aims & objectives of the study

Though medicines help improve the symptoms of PCOD, the recurrence rate is very high after withdrawal of the drug which causes great economic burden for family. An in depth inquiry and research is essential to study the PCOD problem in present times. Along with exploring genetic and environmental factors we conduct a 3 month study on how it can be healed with ancient practices like Yoga which is more sustainable. With a regular practice of Asana/ Pranayama/ Meditation and Chanting we can achieve 1) Prana Chalanam: Movement of Prana throughout the body 2) Samnam (Pacification): relief of the symptoms and 3) Prana Shodhanam: Concentrating Prana on specific parts of the body for a length of time that creates purificatory/ cleansing effect. Specific study targeting the status of PCOD in adolescent girls with an assessment of its awareness and help them with the biological, psychological and social aspects of management of the disease and the stigma attached to it. With so many food outlets and abundant availability of unhealthy food around them, the main aim of the study is to evoke awareness and discipline among teenage girls and establish a connection to their food and eating habits. The study will also aim at addressing and psycho-educating major health hazard these days – the social media, which is disturbing the circadian rhythm and its effect on the overall health and reproductive system in specific in long term. Educating them to manage their social media handles, routine, rest, sleep and life in particular, will certainly alleviate their PCOD problem.

4. Methodology

Goal is to inculcate an attitude of being mindful, aware and establishing a deep connection to self. Using the Krishnamacharya's style of yoga, evaluate the abilities of the students and apply the appropriate tools. Design a practice considering their age, place, activity and strength. 3 months of exploration of healing at Panchamaya kosha Level. Checking the symptoms and consider healing at Annamaya/ Pranyamaya/ Manomaya/ Vignamaya and Aanadamaya level. Taking note of before and after parameters of the intervention at all these 5 levels. A regular and consistent monitored practice of yoga that will include Asanas/Pranayama/ Meditation/ mantra Chanting, Bandhas and Swadhyaya that will help in alleviating the symptoms and root cause of PCOD.



3.1 Physical Level - Symptoms

The most common signs and symptoms of PCOD Problem or PCOS in females are:

- Irregular menstruation (Oligomenorrhea)
- Skipped or absence of menstruation (Amenorrhea)
- Heavy menstrual bleeding (Menorrhagia)
- Excessive Hair growth (face, body - including on back, belly, and chest)
- Acne (face, chest, and upper back)
- Weight gain.

3.2 Mental Level – Symptoms

- Mood Swings and Depression: Hormonal fluctuations in PCOD can contribute to mood swings, anxiety, and even depression.
- Fertility Issues: PCOD can affect ovulation, making it challenging for women to conceive.

3.3 Emotional Level – Symptoms

PCOD can significantly impact emotional well-being. The chronic nature of the condition and its physical symptoms, like irregular periods and acne, can lead to emotional distress. Studies suggest a high prevalence of depression (around 34%) and anxiety (approximately 45%) among women with PCOD. This highlights the importance of addressing the emotional aspects of PCOD alongside physical treatments, as emotional health is a critical part of overall well-being for individuals with this condition.

5. Result

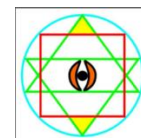
Mindfulness based practices focusing on the individual and group will have a positive impact on health and well-being. Anxiety, depression and emotional turmoil reduce as the system functions more in a Para - Sympathic mode. There is also evidence that mindfulness can lower blood pressure and improve sleep this in turn will alleviate the symptoms. With a well- designed holistic Vinyasa yoga practice the young girls maintain optimal reproductive health in the modern times.

6. Conclusion

Despite progress in the field of medicine and research, young girls and women still suffer from the problem of PCOS and PCOD due to unawareness. A monitored long term study regionally in Hyderabad will surely



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contribute to the need of reaching out to people who are unaware of these findings in the research. This study and analysis will help in evidence-based lifestyle interventions for PCOS and PCOD management.

7. Recommendations

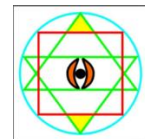
The recent researches prove that, Yoga helps decrease testosterone levels (male hormone) and alleviate most of the symptoms of in women with PCOD. In the Krishnamacharya style of Yoga where practices can be designed suiting the health condition of an individual, the Yoga practice can be made accessible for many fitness levels and a wide range of age. The Aerobic nature of Yoga practices are endurance-type exercises that slow down a person's heart rate and breathing rate relatively over long durations. One of my strong recommendation is to introduce Yoga theory and asana practice from the middle and high school level when most of the changes are happening in a women's body. And such preparation will surely remove the current blocks for the good foundation of healthy reproductive system in women.

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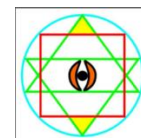
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 - [15] PCOD IN FEMALE REPRODUCTIVE AGE- A REVIEW - *World Journal of Pharmaceutical Research* SJIF Impact Factor 8.084 Volume 9, Issue 1, 677-684. Review Article ISSN 2277–7105Anjali C. S.* 1 , Minnu George1 , Prothibha Das2 and Soji S. 2 1Dept. of Pharmacy Practice. Malik Deenar College of Pharmacy. Kasaragod. 2Dept. of Pharmaceutics, Malik Deenar College of Pharmacy.Kasaragod.
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**Study on Effect of Yogic Practices and Suryanamaskar in Women with
Primary Dysmenorrhea**

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Abstract: Menstrual pain or dysmenorrhea is defined as pain that occurs before or during a menstrual period, that may last from one day to several days. Dysmenorrhea is menstrual pain that often complained by women, which is characterized by brief pain before or during menstruation (Lowdermilk et al., 2011). Menstrual distress refers to any changes or irregularities in a woman's menstrual cycle including, painful, cramps, bloating, mood swings, and fatigue. Some people also experience anxiety, irritability. There are many ways to reduce dysmenorrhea pain, one of which is yoga. Yoga helps the body's endocrine gland's function better and can help relieve dysmenorrhea and facilitate menstruation. The purpose of this study was to analyse the effectiveness of yoga movements in reducing dysmenorrhea pain and menstrual distress. The research design is experimental designs, using one group pre-test and post-test.

Dysmenorrhea is discomfort or pain during menstruation that occurs due to excessive prostaglandin production in the endometrium during the menstrual cycle, resulting in myometrial hypertonus and vasoconstriction of blood vessels, so that oxygen supply is reduced in the uterus. Primary dysmenorrhea lasts a few days before menstruation comes and continues for 12 to 72 hours. The efficiency of yoga asanas (Sakthi bandha series), Surya namaskar and breathing practices has proven to reduce the pain and distress caused during menstruation because of hormonal changes in our body.

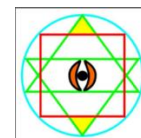
Yoga helps in increasing the flow of vital energy to the reproductive organs and establishes a balance among hormones regulating menstruation. Yoga practices increase the levels of hormones in blood circulation of women in reproductive ages and is known to release endorphins which are produced by the brain that reduces the pain.

Keywords: Dysmenorrhea, menstrual distress, yogic practices.

1. Introduction

1.1 Yoga is being explored as a non-pharmacological, cost effective and feasible alternative that can benefit women with dysmenorrhea. It concentrates on aligning the body through gentle, focused movements along with improved breathing practices.

- Asana- The Shakti Bandha series is most effective in releasing blockages of energy in the pelvic region. They are particularly recommended as they promote drainage of the reproductive organs and enhance pituitary blood flow.
- Surya Namaskar- This will increase the pranic energy and balance nervous and endocrine functions. According to capacity, gradually build up to twelve rounds over a period of weeks or months.



- Breathing practices - Nadi shuddi, Ujjayi, and Bhramari are effective, especially in emotional symptoms like mood swings, irritability etc., Deep, slow breathing to calm the nervous system.

1.2 Dysmenorrhea

It is characterized by painful uterine cramps during menstruation, is a common symptom affecting many adolescents and young women. This condition often presents significant challenges, impacting their daily activities and quality of life.^[1] It continues to be a significant public health issue that may have a detrimental effect on female physical health or discomfort, social interactions, academic or professional activity, and also psychological status. Types of Dysmenorrhea It can be classified as either primary or secondary based on the absence or presence of an underlying cause. Primary dysmenorrhea occurs without an associated underlying condition while secondary dysmenorrhea has a specific underlying cause. The most common cause of secondary dysmenorrhea is endometriosis, which can be visually confirmed by laparoscopy in approximately 70% of adolescents with dysmenorrhea. Other causes of secondary dysmenorrhea include leiomyoma, adenomyosis, ovarian cysts, and pelvic congestion. Primary dysmenorrhea is defined as cramping pain in the lower abdomen nausea, vomiting, fatigue, back pain, headaches, dizziness, and diarrhoea. that occurs just before or during menstruation without identifiable pelvic pathology. Secondary associated symptoms underlying medical condition, such as endometriosis, uterine fibroids, or pelvic inflammatory disease.

2. Review of Literature

A literature review involves the systematic identification, location, scrutiny and summary of written materials that contain information on a research problem.

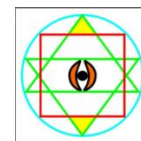
1.Neha Gothe (2013) had conducted a study to find is Yoga better for your brain than Exercise. A sample of 60 female undergraduate students was selected randomly at the University of Illinois, US. Experiment group received 20 minutes yoga session includes Hatha yoga postures, Meditation and deep breathing whereas control group received 20 minutes aerobic exercise session includes walking or jogging on a treadmill. The study findings showed more improvement in participant's reaction times and accuracy on cognitive tasks after yoga practice than after the aerobic exercise session, which showed no significant improvements on the working memory and inhibitory control scores. The study concluded that twenty minutes of yoga is better for boosting brain activity than vigorous exercise for the same amount of time.

2.Ravi, Sha, Palani, Edward and Sathya sekaran (2016) carried out a cross-sectional school-based study at Department of Community medicine, Sree Ramachandra Medical University, Chennai, Tamil Nadu. Adolescent girls who attained menarche at least 1 year before the data collection period were selected using a simple random sampling method. Total of 350 participants were participated in the study. A structured questionnaire was used for the data collection. The main outcome measured in this study was the prevalence of menstrual problems, namely dysmenorrhea, menorrhagia, and irregular menstrual cycles. The mean age of the study participants was 14.74 years. The mean age at menarche was 12.4 years. In this study, 87.7% of the girls suffered from a menstrual problem. Overall, dysmenorrhea 43 prevalent was 72.6% and menorrhagia and irregular menstrual cycles were present among 45.7% and 31.7% of the participants respectively.

3.Lowdermilk (2004) had highlighted that the dysmenorrhea is a common gynaecological problem in women in all ages. Most adolescence experience dysmenorrhea in the first 3 years after menarche. Young adult women ageing 17 to 24 years are most likely to report painful menses between, 50% to 80% of women report some level of discomfort associated with menses and 10% to 18% report severe dysmenorrhea. It



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has been estimated that up to 10% of women have severe pain which interfere with their functioning for 1-3 days a month. Primary dysmenorrhea occurs during regular ovulatory cycles. Women with primary dysmenorrhea have increased activity of the uterine muscle with increased contractility and increased frequency of contractions. Prostaglandins are released during menstruation due to destruction of the endometrial cells and the resultant release of their contents.

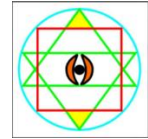
3. Methodologies

This study is an experimental study which included a total of 30 subjects. and were divided into 2 groups. 15 in each group were chosen for the study from the Chennai & Tiruvallur district with an Age group between 35 to 50 years - Experimental and Control Group. The Experimental Group – Group 1 were made to perform Yog asanas with 12-week training period, six days per week, an hour in the morning and while the Control Group - Group 2 without any practice, Menstrual cramps and menstrual distress levels were measured by using the Visual Analogue Scale for Pain and the Menstrual Distress Questionnaire, respectively.

The visual analogue scale to mark the pain response before and after yogic practices and the score was divided into three quartiles 1 to 3 termed as mild, 4 to 6 termed as moderate, and 7 to 10 termed as severe. The Menstrual Distress Questionnaire (MEDI-Q) is a tool used to measure the level of distress caused by menstrual symptoms. It is administered by a self-report questionnaire, where individuals rate the severity of various symptoms during different phases of their menstrual cycle. The scale assesses physical, emotional, and behavioural symptoms associated with menstruation, allowing for a comprehensive understanding of the impact of the menstrual cycle. Because of that, instead of repeated measures of ANOVA the Friedman test was applied. The Friedman test is similar to repeated measures of ANOVA. The interpretations between the groups were done by independent “t” test. Since the pain scale is an ordinal scale, the interpretations between the groups were done by Kruskal Wallis (KW) test. Similarly, the control group subjects were analysed and interpreted accordingly. The relationship between pain and distress of dysmenorrhea were analysed and interpreted by Spearman’s rank correlation. The associations between pain and distress with demographic and clinical characteristics of both groups were done by χ^2 (Chi-square test). The P-values less than or equal to 0.05 ($P \leq 0.05$) were considered as statistically significant.

4. Results

The researcher conducted pretest to assess the pain and distress related to dysmenorrhea at the time of menstruation (1st day, 2nd day and 3rd day) by using Visual Analogue Scale - VAS pain scale which assesses pain associated with dysmenorrhea. Subject reported severe and moderate pain symptoms during Pre Test and none of them had mild pain symptoms. Post Test many reported mild pain, moderate pain symptoms and very minimal had severe pain symptoms. This reveals that in the post-test, severity of pain symptoms had remarkably reduced. Menstrual Distress Questionnaire was recorded, to access menstrual distress to the control group and experimental group on pre and post-test - revealed pain and distress values significantly decreased after the yogic practices. Yoga practices such as Sakthi bandha series, relaxation techniques, and specific postures has helped to alleviate menstrual cramps. Focuses on breathing helps in reducing stress, anxiety, overall physical and emotional wellbeing, leading in better management of menstrual distress there by resulting in increased flexibility and reducing muscle tension. Also, it helps to reduce discomfort during menstruation and regulate hormonal imbalance- root cause of dysmenorrhea. Another major finding of this study is the age group affected by dysmenorrhea was predominant found to be less than 30 years and so the effectiveness of our treatment vide yoga was very prospective and remedy will last long.



5. Conclusion

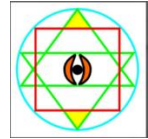
Overall, the study result conclude that pain and menstrual distress of dysmenorrhea score had significant difference between pretest and post-test among women in experimental group. It is proved that Yog asanas (Sakthi Bandha series) Surya namaskar and breathing practices can safely be used for pain management and menstrual distress related to primary dysmenorrhea. It is a cost effective and a home-based treatment that can be implemented among middle aged women in order to augment their menstrual well-being and over-all well-being. Yoga helps to maintain good status of health, fitness and to minimize 'menstruation syndrome' before, during and after menstruation cycle and has long term effects in controlling menstruation problems.

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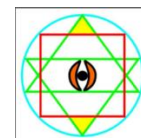
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Comparative Impact of Mindfulness Yoga vs Traditional Counseling on Smoking Cessation in Two WHO Index Age Groups Across Three Occupational Sectors in Guntur City: A Double-Blind RCT

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Abstract: Tobacco use is a major risk factor for non-communicable diseases and it is high end censes of worldwide premature deaths. The main forms of tobacco products whether they are smoked, inhaled or sucked cause severe damage to health. Every year around 8 million people are affected with severe ill effects causing deaths. Various Tobacco programs like Nicotine Replacement Therapy (NRT) and other General wellness programs are often incorporated into treatments for tobacco dependence. Studies have shown that ⁵Mindfulness Yogic Practices (MYP) have a considerable impact on the addictive behavior of smokers. MYP and Traditional counseling methods (TCM) may enhance Stress reduction and improve mood and well being and may improve cessation outcomes. **METHODS/DESIGN:** This study examines the effects of MYP intervention blended with TCM intervention vs TCM intervention and No treatment (NT) control group on craving effect, withdrawal and smoking behavior. Outcome measures include a baseline assessments, end of treatment (week 8), and both 3 and 6 months follow up. The baseline measures include dependence rate-anxiety, Depression, Stress (psychological parameter), Hypertension, Gingivitis, Periodontitis (Dental problems), CO levels and Cotinine levels are to be analyzed and reported. **DISCUSSION:** Innovative treatments are aided to quit smoking among working people. The chosen study design, Randomized Control Trail (RCT) will allow for the exploration of vulnerable mediators of intervention efficacy, examining how mindfulness-based yogic practices may serve as an alternative treatment for smoking cessation. **RESULT:** If proved to be effective, intervention of yoga may offer an alternate effective treatment to traditional counseling practices for reducing stress and negative symptoms for smoking withdrawal and lowering the risk of relapse among recent quitters.

Trail Registration: Clinical Trails No.....1

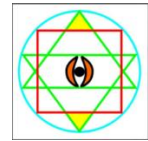
Keywords: Mindfulness yogic practice(MYP), Traditional counseling methods(TCM), Smoking cessation, Randomized Control Trail(RCT).

1. Introduction

The WHO's guidelines for the working-aged primarily focus on physical activity and mental health at work. Every year around 8 million are effected with severe ill effects which include COPD chronic bronchitis, lung cancer, Asthma, atherosclerosis, peripheral artery disease PAD, lack of appetite, infertility, DM Type 2, erectile dysfunction in men, weak end immune system. ⁴Smokers face several challenges when trying to



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quit, including nicotine addiction, intense cigarette cravings, heightened negative emotions, increased perceived stress, and concerns about weight gain after quitting.⁶ Previous studies have shown that physical fitness programs—such as brisk walking or bicycling—combined with Cognitive Behavioral Therapy (CBT) lead to higher quit rates among women at the end of treatment and at six-month follow-up, compared to CBT alone.

⁵Mindfulness yogic practices (MYP) serve as an alternative approach to traditional fitness programs for smoking cessation and likely as a complementary therapy to help individuals quit smoking. MYP is comprised of several elements including various Asanas (yoga postures) for releasing Stress and Anxiety, Various Pranayamas (Breathing regulation) for control of Depression and Anxiety and focused attention (meditation) for calm down of Thoughts and Yoga Nidra (Deep Relation Techniques for mind relaxation. Mindfulness practices like SMET(Self Management of Excessive Tension), Self Awareness Programs and Emotional Regulation, Spiritual awareness, Time Management, Positive Thinking, Benefits of Good life style and well being .Various Traditional counseling methods are deployed for smoking cessation like Health education programs on smoking habits of working aged people, ill effects of smoking Individual counseling, Diet habits, various psycho therapeutically, motivational interview from famous personalities. ⁶Based on a synthesis of this evidence based research, the study is designed to examine the effects of an 8 weeks yoga program plus Traditional counseling method on perceived stress levels, anxiety levels, Hypertension, CO levels affect and process of quitting of smoking among working aged people. The objective of the study is to compare the impact of MYP blended with TCM for quitting smoking compared with conventional counseling and a no-treatment control group in a working age population (municipal workers, auto drivers, and textile workers). It seeks to compare the long-term impact of the interventions on smoking cessation at follow-up intervals.

Hypotheses of the Study

Main Hypothesis (H1)

H1: Individuals in the Mindfulness Yoga Practices (MYP) + Traditional Counseling Methods (TCM) condition will have significantly greater rates of smoking cessation at the completion of treatment (week 8) and at follow-up at 3 and 6 months compared to individuals in the Traditional Counseling Methods (TCM) and No Treatment (NT) conditions.

Secondary Hypotheses (H2)

H2: At the completion of treatment (week 8), participants in the Traditional Counseling Methods (TCM) group will have greater rates of smoking cessation than the No Treatment (NT) group, but will exhibit lesser rates than the MYP+TCM group at follow-up.

Null Hypotheses (H0)

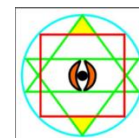
H0: There will be no significant difference in smoking cessation rates between the MYP+TCM group, the TCM group, and the NT group at the end of treatment (week 8), 3 months follow-up, and 6 months follow-up.

2. Literature Review

The previous studies done by Ussher, Michael, Adrian H . Taylor 2012 On the impact of exercises on smoking cessation, reviewed the Trails comparing exercise , interventions plus smoking cessation , program alone. The above studies showed reduction in cravings and withdrawal. Effects similar for vigorous and moderately intensity CV exercise , temporarily abstinent smokers .Reduced symptoms up to 50 minutes after exercise. In another pilot efficacy study by Bock , Beth C ,et , al 2010 in which the rates of smoking cessation among women were examined by randomizing to 8week yoga plus cognitive



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behavior therapy versus wellness therapy alone .outcome measures include a 7 - day point prevalence abstinence at the end of treatment, 3 month, 6 month follow up. Other assessment include measures of mindfulness, spirituality, depression symptoms, anxiety and perceived stress., Chia- Liang Dai, M.S., and Manoj Sharma, Between Inhale and Exhale : Yoga as an study.2014. The study has provided a review of evidence based yogic intervention impact on smoking cessation. The researcher reviewed on articles obtained from Medline (PubMed), EBSCOHOST, PROQUEST, MEDINDIA, CINAHAL. Alt health watch and AMED databases. In this study intervention of yoga was taken on the smokers of varying levels of smoking. The study is of quantitative design with various physiological and psychological outcomes. The study design comprises of 2 pre – post tests and 8 randomized control trails. Most of the yoga interventions could reduce smoking cravings and enhance smoking quitting rates among smokers. In another studies by Lotfalian, Sadaf, Claire A. Spears 2020 , the effects of mindfulness- based yogic breathing on craving, affect and smoking behavior . The study examined the effects of mindfulness based yogic breathing (MB) intervention versus Cognitive strategy (CS) and no treatment (NT) control group on craving, affect, withdrawal and smoking behavior. It was found mindfulness based yogic breathing appears to be particularly effective in alleviating acute effects of smoking abstinence and decreasing smoking behavior. Mindfulness breathing techniques are safe, simple and cost effective strategies. Cochrane Database of systematic review was done on Mindfulness for smoking cessation by Jackson, Sarah, et, al. 2022 in which different types of mindfulness based interventions were given including mindfulness training in meditation, acceptance and commitment therapy (ACT), distress tolerance training and yoga for smoking cessation. The RCT trails done on participants with mindfulness training interventions and with out treatment (control group). Final results revealed that mindfulness training intervention alone impact was not upto considerable and further investigations are to be done taking other measures. In the study Effective ness and Adherence of Pharmacological Vs Non Pharmacological Techniques – supported smoking cessation – Interventions –an Umbrella Review – Federica Di Spirito , Maria Pia Di Palo 2025 Non pharmacological technology – supported intervention showed similar effectiveness , low costs and short duration than pharmacological interventions .In Mindfulness – based interventions Targeting Modifiable life style behaviors associated with Brain health- A Systematic Review and Meta analysis by Ryn , A , Mace , Mathews – 2024 American journal of life style medicine.. In this present study a sysmatic review and meta analysis was investigated Randomized clinical trail (RCT) of mindful – based interventions (MBI) targeting life style behavior commonly associated with brain health in adults. MBI interventions primarily are one or more life style behavior like sleep , diet , physical activities, alcohol use , tobacco cessation and several mental activities. Out of total participants for RCT trail were 3537 n and 685 improved tobacco cessation and 261 lowered alcohol use.

Picos model

Population (3)	Interventions (2)	Comparison (2)	Outcome
1. Muncipal workers 2. Auto Drivers 3. Textile workers	1. MYP + TMC 2. TMC	1. MYP + TMC 2. TMC	Tobacco Abstinence

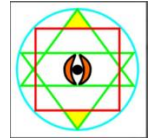
5 A's and 5 R's of tobacco cessation

The 5 A's and 5 R's are strategies used to help individuals quit tobacco.

The 5 A's are a set of steps for healthcare providers to take when interacting with patients about tobacco use:



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- Ask: Identify and document all patients' tobacco use status at every visit.
- Advise: Urge every tobacco user to quit in a clear, strong, and personalized manner.
- Assess: Determine if the patient is willing to make a quit attempt at this time.
- Assist: Provide counseling and, if appropriate, pharmacotherapy to help the patient quit.
- Arrange: Schedule follow-up contact to support the patient's quit attempt

The 5 R's are a motivational intervention to help patients consider quitting who are not yet ready to make a quit attempt:

- Relevance: Encourage the patient to identify why quitting is personally relevant.
- Risks: Ask the patient to identify potential negative consequences of tobacco use.
- Rewards: Ask the patient to identify potential benefits of stopping tobacco use.
- Roadblocks: Ask the patient to identify barriers or impediments to quitting.
- Repetition: Continue to discuss quitting with the patient at each visit, even if they are not yet ready.

3. Methodology

Study Design

The study design is a Double Blinded randomized controlled trial

Study Population

WHO index age groups i.e 35-44 years, 65-74 years age group

Study Groups

It is further divided into three working age group of Municipal workers, Auto drivers and Textile workers

Sample Size

The sample size was calculated by G.Power Software, by taking power of the study as 0.80

The sample size is of Total population $n = 360$ out of which 90 n are assumed as drop outs and remaining sample for experiment is 270 n . Each group consisting of 90 participants working age group of 3 different sectors.

Municipal Workers – 90 n

Auto Drivers -- 90 n

Textile workers --- 90 n

Total 270 n Accepted Sample

Block Randomization

Each comprising 90 participants. Each working group is further divided into 3 groups of 30 participants by Block Randomization method to eliminate selection bias.

Blinding

Double Blinding effect will be done for all the participants. For each group three interventions are given separately which neither the investigator nor the subject know the experiment to which the subject has been allocated.

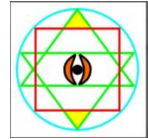
Interventions

Three interventions are given.

Group 1: Mindfulness yoga Practices (MYP) for smoking cessation blended with Traditional counseling methods (TCM) for smoking cessation



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Group 2: Traditional Counseling methods (TCM) for smoking cessation and

Group 3: No Treatment (NT) control groups with sports.

Study Setting

Recruitment methods include ---Reaching Dental set up camps at various working organizations like Municipal Corporation, Auto drivers union stand and Textile factory and take the required consent from the superior authorities.

Internal Validity

The Internal Validity of the study is done through Pre-tested Questionnaires, Properly Trained Examiners, Pre-Calibrated Instruments, Block-Randomization, Double-Blinding methods.

Data Collecting Instruments

- ⁶Assessment instruments include survey of demographic variables, smoking history and nicotine dependence (FTND), smoking situations temptation scale (SST), stage of change of smoking symptoms checklist. Participants also complete Frieberg mindfulness inventory (FMI) and measure of spirituality (STI), Anxiety (STAIT), Depression symptoms (CESD). Participants also complete assessments of physical self perception profile, the short-Form Health Survey (SF) and assessment of concern regarding post cessation weight gain (SSQ).
- WHO Oral Health Assessment form 2013 was used to record Gingivitis, Periodontitis, Pre-cancerous white lesions like leukoplakia.
- Pre-tested Validated Questionnaires were used for data collection.

Training

- The study investigator conduct Yoga classes thrice weekly for eight consecutive weeks by certified yoga experts with over 15 years experience and who are trained in ³Hatayoga and mindfulness yogic practices.
- The study co investigator (CI), is trained to provide 5A, 5R tobacco cessation counselling to working age people who call the program in response to the recruitment and to screen the interested persons for eligibility.
- Properly Trained Examiners were participated in the study to eliminate Observer bias.

Calibration

- All the instruments like CO-Monitor, Sphygmomanometer, CPITN Probe are Pre-Calibrated and tested to eliminate Instrument errors.

Inclusion Criteria

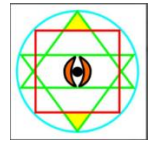
- The WHO index age groups i.e 35-44 years, 65-74 years age groups, who doesn't have severe systemic diseases were included in the study
- Those who are willing to give consent are included in the study

Exclusion Criteria

The participants are excluded if they have very mild smoking habits i.e. if they smoke less than 3 cigarette product, are already doing physically fitness, and ¹⁰ intensive physically active, yoga practioners, ⁶have current heart disease, lung diseases or orthopedic conditions which are not able to do yogic practices, having mental problems or using any drugs.



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Consent From Participants

Eligible participants are also screened to ensure safe and willing participation in physical activity by using PAF-Q(24) Participant Agree Form Questionnaire and are to be signed individually by the participants. Individual who are deemed eligible after following screening are then scheduled for an introduction orientation session during which the Co investigator(CI) present the details of the study reviews what is required for participants and administrator informed consent.

Ethical Clearance

The protocol of the study, Data collecting Instruments, Consent form, Interventions before giving to participants were Pre-validated from IEC(Institution Ethical Committee)

Scheduling Interventions To Three Groups

Group1 participants

All screened participants of Municipality workers are randomly assigned to either the mindfulness yoga Therapy or Traditional counseling methods separately on a weekly basis for 3 days on the same timings and No treatment group central group are allowed to play sports which they are interested in.

Group2 Participants

All screened participants of Auto drivers are randomly assigned to either mindfulness yoga therapy plus Traditional counseling methods or only Traditional counseling methods, and No treatment groups control group are allowed to play sport which they are interested in separately on a weekly basis for 3 days on the same timing.

Group3 Participants

All screened participants of Textile workers are randomly assigned to either the mindfulness yoga therapy plus Traditional counseling methods or only Traditional counseling methods and No treatment group control group are allowed to play sport which they are interest in separately on a weekly basis of 3 days on the same time.

Procedure for the Delivery of Interventions

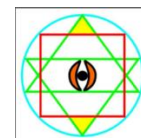
Yoga classes are conducted thrice weekly for eight consecutive weeks₆ by certified yoga experts with over 15 years experience and who are trained in Hatayoga and mindfulness yogic practices. The yoga experts design yoga modules for each class of participants that is for municipality workers, Auto drivers and Textile workers which includes specified Asanas with breathing movements for releasing stress and anxiety levels. In coordination with the yoga trainers a pattern of Asanas are selected for beginners that are most appropriate in execution. For every asanas in between there will be a one minute of relaxation time is given for the participants.

Various pranayamas are taught which relieve stress and depression for the participants. For relaxation and concentration of mind Meditation and Yoga nidra are given to the participants for calm down of thoughts and frequency levels of mind and thus lowering the hormonal imbalances in the body. Mindfulness yogic practices like SMET(Self Management of Excessive Tension), spiritual awareness and self awareness programs are given to the participant in an alternative day schedule and a total of 40 minutes time is allotted to all the screened participants on a three day per week schedule.

Participants attending traditional counseling methods like 5A,5R for smoking cessation are given the extensive health educational programs on cigarette smoking habits, explaining the epidemiology of tobacco related deaths, chemical contents of various forms of tobacco, ill effects of smoking, benefits on quitting of smoking and to identify the quit date. Participants are circulated with pamphlets, consists of various agents



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in the cigarettes. Videos consisting of harmful effects of smoking and its ill effects on the health of smokers and its impact on the family members and their future living style are explained by our co investigators. There is a psycho therapeutic treatment which relies on thoughts, feelings, behavior and positive thinking. Motivational interviews from famous personalities like top doctors, actors, and educationalists. The traditional counseling method will be for a 40 minutes and 3 days /per week schedule. The control group are not given any treatment but for them different sports are organized between the participants for the release of stress and anxiety. All participants of three groups are encouraged to select healthy low caloric snacks throughout the program which enable them to get refreshed during the training program. The participants are not provided with any NRT or other smoking medications.

Measures

Participants are completed with baseline assessments, end of treatment 8 weeks, and both 3 and 6 month follow up.

On each week during the program participants are assessed for current smoking status verified by CO levels, BP levels, BMI rates, pulse rates, respiratory rates or lung capacity rate and Cotinine levels of saliva. Smoking outcomes are biochemically validated by CO levels, cut off<10 PPM and saliva Cotinine cut off = 15 mg/ml.

Measurement Schedule⁶

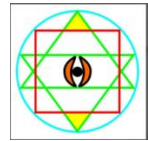
Measure	Baseline	weeks 1-8	post treatment	Month 3	Month 6
Demographics 1					
Smoking status 2					
Smoking history 3					
Nicotine dependence 4					
Smoking behavior –CO levels 5					
Saliva cotinine 6					
Withdrawal Symptoms 7					
Physical activity status 8					
Weight concerns 9					

Phycological levels

Self efficacy stage of change 10
Mindfulness 11
Spirituality 12
Depression 13
Anxiety 14
Short form health survey 15
Mood(PANAS) 16

Physiological levels

Gingivitis—Dental problem 17
Periodontitis—Dental problem 18
White lesions---Dental problem 19
Respiratory rates 20
Blood pressure 21
Pulse rates 22



BMI 23
Cigarette craving
Recruitment , Retention and Satisfaction levels
Attendance and drop outs
Consumer satisfaction

4. Proposed Study

RCT Flowchart of the proposed study

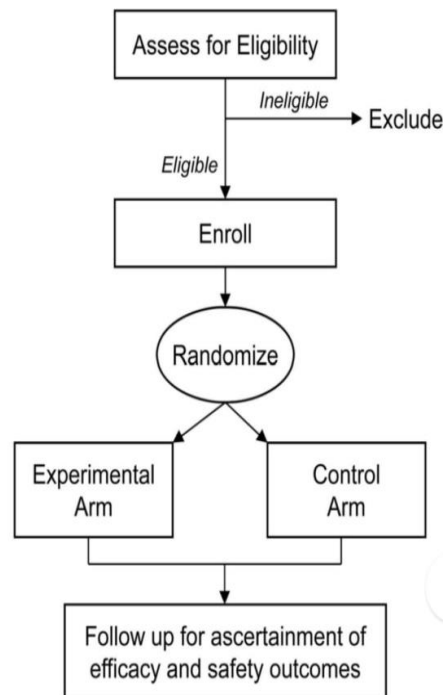


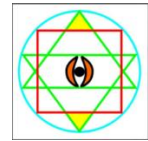
Figure 1. Basic structure of a classic randomized controlled trial (RCT)

For the sake of simplicity, only one experimental arm is shown, but RCTs can have multiple experimental arms. The control arm may consist of active therapy(active-controlled) or a placebo(an inactive substance; placebo-controlled). Ideally double blind design is used in which neither the investigator nor the subject know the arm to which the subject has been allocated.

5. Outcomes

⁶The primary outcomes for the study are post treatment cessation rates, study feasibility and acceptability. Difference in post treatment (12 week) cessation rates between the conditions will provide data for estimates of effect size measures to calculate proven estimates for a major clinical trial. The qualitative and quantitative feasibility and acceptability of quitting program will be assessed by the following outcome measures at the individual participant level.

1. Smoking abstinence rates
2. Accrual and Retention rate
3. Acceptance of Randomization



The feasibility and acceptability outcome measures listed above will be assessed at baseline, 8 week end of treatment, 3 and 6 month follow up.

6. Systematic Analysis

The primary outcome variable is quit status, verified with CO (cut off 8 ppm) weekly and cotinine (cut off 15 mg/ml) at the end of treatment and both 3 and 6 month follow up assessments. Subjects should have a CO level less than 8 ppm and cotinine levels less than 15 mg/ml if they are in quit status. The primary hypothesis of the study will be tested using a logistic regression to produce an odds ratio measures the effect TCM(counseling) + MYP(yoga) on the likelihood of smoking cessation at the post treatment and follow up assessments. ⁶In addition we will conduct a second longitudinal analysis across the time (end of treatment, 3 and 6 month follow up after treatment) using the generalized estimated equations (GEE) approach of Zeger and Liang. This procedure can accommodate covariates and missing data thus allowing the maximum use of existing data for detecting treatment effects.

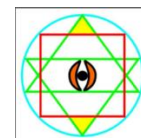
^{1,2,6}Secondary analyses will examine the effects of TCM (counseling) on other psychological and behavioral domain includes anxiety, QOL, Spirituality, mindfulness and self esteem. The analyses consists of a series of repeated measure analyses of covariance using the baseline measures of each variable as a covariate and 3 repeated measurements (end of treatment, 3 and 6month follow up). Further analyses will examine the effect of MYP (yoga) plus TCM (counseling) on the physiological variables Gingivitis, Periodontitis, White lesions (dental problems) and are assessed using a scale of scoring system that reflects depth of gum problem and gingival index(GI) for the severity of gingivitis..Other physiological variables BP, respiratory rates, pulse rate, BMI are also analysed for the effects of MYP (yoga) and TCM (counseling) on smoking cessation of the participants. The above analysis will be done on a longitudinal analyses across the time 8 weeks, 3 and 6 month follow up after treatment.

Analysis of Base line data

SPSS Version 22 software will be used for Statistical Analysis. Descriptive Statistics will be used to describe the baseline demographic, psychological and smoking rate characteristics of the study participants, by using mean, standard deviation, Repeated Measures ANOVA will be used to evaluate the effectiveness of interventions from base line to 8 weeks, 3 and 6 month follow up. Inter and Intra Group Comparisons will be done by Post-Hoc, range values and proportion state of change for smoking cessation is calculated in two ways – at first with the intent to quit, while second classified participants in to the preparation stage if they intend to quit in next 30 days and they have made at least 1 quit attempt (> 24 hrs) in the past year. ^{1,2,6} To describe the participants withdrawal symptoms during previous quit attempts we calculate the % of the sample that endorsed 3 or higher on the withdrawal symptoms checklist (scored from 1 – not at all to 5 – extremely) which assess the severity of nicotine withdrawal symptoms.

7. Result

If proved to be effective MYP (yoga) can offer an alternate to traditional counseling methods for reducing stress and negative symptoms that often accompany smoking cessation and predict relapse to smoking among recent quitters. MYP (yoga) may enhance the effects of TCM (counseling) for coping with stress and cigarette cravings and are aided in improving the QOL. MYP(yoga) on a life long practices which help the smokers to enhance their health standards even after treatment and it works as a non pharmacological medicine for once and all. The various symptoms including perceived stress, negative symptoms will enhance the individuals risk for relapse to smoking.



8. Discussion

⁵The present study is an investigation of impact of MYP (yoga) as an alternate therapy for smoking cessation among working age people of different sectors of urban population. The investigation is mainly on the three different sectors of working age people mainly age in between 18-44 years who are exposed to more stress and depression. The participants are to be exposed 3 interventions and mainly focussed on the Mindfulness yogic practices complimented with traditional counseling methods.

For making trail more effective numerous parameters including different psychological, physiological and other factors of demographic in nature are taken for study. The intervention modules MYP (yoga) and TMC (counseling) mentioned in this study are proved to be scientific and reliable and impose an considerable impact on the post intervention results .The intervention modules prescribed in this study is a full time package to the participants for enhancing QOL and well being and by and large will make a great impact on the health standards of whole society.

Novelty of the Proposed study

The present study is novel

- 1 Sample size is chosen in from 3 different working class sectors of people in urban area randomly who are exposed to more stress and anxiety in their working environment.
- 2 Three interventions are taken for exposure – two experimental & one control groups.
In one experiment arm MYP (yoga) is given which is completely unique combining with TMC (counseling) and other other experiment arm is exclusively of TMC (counseling) which are different from regular counseling methods in view of the outcome of the result. In the present study the control group is also given sports activities for the participants and the impact of all the interventions are considerable in point of outcome.
- 3 The present study is unique as Double blinding design is attempted which is difficult as the investigator nor the subject know the arm to which the subject has been allocated. And thus it is described as Double Blinded Randomized Control Trail which was not done by previous investigators..
- 4 The present study is unique as number of different measurable variables are taken for
Study in which physiological variables like Gingivitis , periodontitis, White lesions (Dental problems) are manipulated and measured.
- 5 All these co-variables will make an considerable impact on the results and thus cause & effect is established in the proposed study.

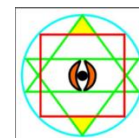
9. Conclusion

The present study gives thrust on mindfulness yogic practices which is a combination of the benefits of Mindfulness and benefits of yoga offering even deeper insights into mind and help the practitioner to lead a high QOL. The mindfulness practices are focused mainly on 5R'S – Recognize Relax, Recover, Respond & Return in relation to Body & Mind.

The proposed study will be beneficial to other working age group of population like Software employees, Govt. employees, Industry workers and working class who are exposed to perceived Stress , Anxiety and Depression who indulge in consuming nicotine products and addicted to smoking and feel difficulty from withdrawal or quitting smoking.



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List of Abbreviations

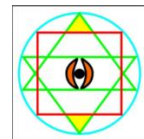
Abbreviations	Definition
MYP	Mindfulness Yogic Practices
TCM	Traditional counseling methods
NRT	Nicotine Replacement Therapy
NT	No treatment
RCT	Randomized Control Trail
CBT	Cognitive Behavioral Therapy
SMET	Self Management of Excessive Tension
FTND	Fagerström Test for Nicotine Dependence
SST	Smoking Situations Temptation Scale
SOC-SC	Stage of Change – Smoking Symptoms Checklist
FMI	Freiburg Mindfulness Inventory
STI	Spiritual Transcendence Index
STAI-T	State-Trait Anxiety Inventory – Trait version
CES-D	Center for Epidemiological Studies Depression Scale
PSPP	Physical Self-Perception Profile
SF	Short Form Health Survey
SSQ	Smoking-Specific Questionnaire on Weight Gain Concern
GEE	Generalized Estimated Equations
ANOVA	Analysis of Variance
PAF	Participant agreement form

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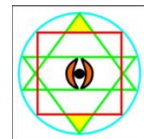
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Efficacy of Varmam Treatment on Osteoarthritis

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Abstract: Siddha system of medicine is the ancient traditional Medicine and is Bestowed with various specialities .Varmam is one among such in Correcting the alignment of joints, bones, or muscles . Varmam points are interconnected with the body's nerves, muscles, and energy flow (prana) .The human body is believed to have 108 vital points .In Siddha system of Medicine , Varma plays vital role in treating disorders like spondylosis and Arthritis with other external therapies and Internal Medicines. Osteoarthritis is the most common Disorder seen in old age that affects knee joints. Here we see some of the Varma points and its Efficacy in curing Osteoarthritis.

Keywords: Varmam – Energy flow- osteoarthritis – inflammation - Stiffness – mobility – natural healing – drug free modality.

1. Introduction

- Varma Maruthuvam (also known as Varma Kalai) that focuses on stimulating specific points in the body (called varmam) to restore health and balance that helps in healing process of many disorders.
- Varmam is the sensitive points located in human body and was identified as
Paduvarmam - 12
Thoduvarmam-96 , total 108
- Varmam is also known as Marmam that is effective for a variety of conditions like Arthritis, sprains, fractures, joint pain, Paralysis, migraines, nerve damage, Muscle tears, ligament injuries, Back pain, neck pain, fibromyalgia , Stress and anxiety.
Osteoarthritis - Is a Degenerative Joint Disease that results from breakdown of joint cartilage and underlying with a symptoms of Joint Pain, Stiffness,Joint Swelling.
- Here is some Varma points and criteria of varma treatment for Osteoarthritis.

2. Methodology

The consent of the patient should be obtained before the treatment. The pain duration, location, stiffness, swelling, crepitus and functional limitation of the patient should be noted. The pressure for each Varma points may vary according to patient body constitutions. Varmam therapy is often combined with other Siddha therapies, such as ottradam, Thokkanam and Oil application to Improve the patient mobility. The patient is also advised to practice Breathing exercises (pranayama) to enhance the flow of prana and calm the mind. The improvement of the patient is often tracked by pain scale and range of motion. The treatment may last for a period of 45 days.

Varma Points And Criteria

Inclusion Criteria ,

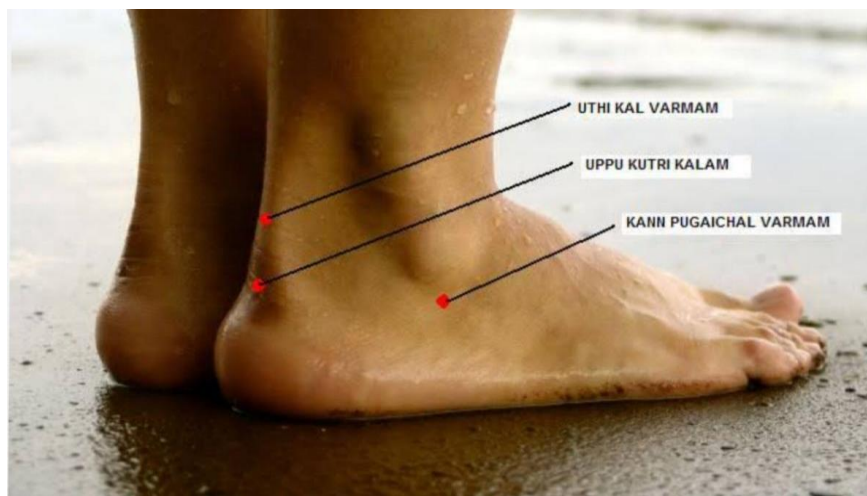
- i. Patient between the age group 30 to 60 yrs.
- ii. Patients with Primary Osteoarthritis Symptoms.

Exclusion Criteria,

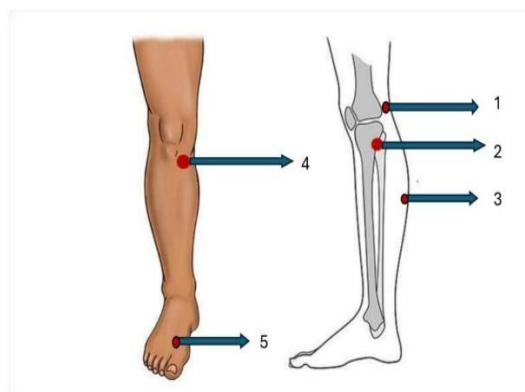
- i. Patients below age 30 Yrs and above 60 Yrs.
- ii. Secondary Osteoarthritis of Knee joint.
- iii. Rheumatoid arthritis & Gouty arthritis.
- iv. Pregnant Women.
- v. Patients having other Systemic disorders.
- vi. Patients having severe osteoarthritic changes.
- viii. Patient with skin Disease and Varicose vein.

Varma Points

1. **Uppukuttri varmam** - Situated 3 fingers breaths above posterior aspect of the heel.
2. **Kuthikaal Varmam** - Situated 7 fingers breaths above posterior aspect of the heel.



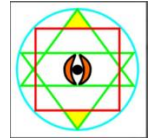
3. **Viruthi Kaalam** - Situated between big toe and adjacent in its dorsal aspect.
4. **Komberi Kaalam** - Situated 8 Fingers breaths above medial malleolus.
5. **Naai thalai Varmam** - Situated 3 fingers breaths below knee joint.
6. **Kaal Moottu Varmam** - Situated in centre of the popliteal fossa .
7. **Veeradangal** - Situated 4 fingers breaths above kaal moottu varmam.
8. **Mootu varmam** - situated around the patella.



1. Kaal Moottu varmam
2. Veeradangal Varmam
3. Komberi Kaalam
4. Naai Thalai Varmam
5. Viruthi kaalam



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3. Result

How Varmam Helps in Osteoarthritis:

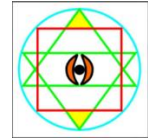
- Helps reduce joint pain and inflammation.
- Improves mobility and flexibility.
- Stimulates energy flow and promotes natural healing.
- Acts as a complementary therapy alongside conventional treatments.

4. Conclusion

Varmam therapy represents a promising integrative approach in the management of osteoarthritis. By targeting specific energy points, it helps reduce pain, improve joint mobility, and support the body's natural healing mechanisms. As a non-invasive, drug-free modality, Varmam holds potential in enhancing patient comfort and quality of life when used alongside conventional treatments.

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**Electromyography in Yoga and Varma Therapy for Sleep Quality
among Women Athletes**

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Abstract: This study investigated the effects of a combined yoga and varma therapy (VT) intervention on muscle activation and sleep quality (SQ) among women athletes, using a randomized control design with 27 participants (intervention group = 14, control group = 13) over twelve weeks. Surface electromyography (SEMG) was used to assess neuromuscular activity of levator ani (LA), erector spinae (ES), transverse abdominis (TA), and gluteus medius (GM), and SQ was evaluated using the Pittsburgh Sleep Quality Index (PSQI). Results show statistically significant reductions in post-test muscle activation in the intervention group compared to controls (non-intervention group), with LA activation decreasing from $37.3 \pm 4.2\%$ to $28.6 \pm 3.6\%$ ($p < 0.05$), ES from $58.7 \pm 5.1\%$ to $34.9 \pm 4.4\%$, TA from $49.1 \pm 4.8\%$ to $30.2 \pm 3.9\%$, and GM from $40.5 \pm 4.5\%$ to $24.1 \pm 3.5\%$ ($p < 0.01$). At the same time, PSQI global scores significantly improved in the intervention group from 11.5 ± 1.8 to 4.8 ± 1.5 ($p < 0.001$), compared to a non-significant change in the control group (11.2 ± 1.7 to 10.6 ± 1.6 , $p = 0.81$), the intervention group led to notable improvements in sleep latency, duration, and disturbance scores, suggesting that yoga and VT may serve as a safe, non-invasive technique for improving both muscular recovery and sleep health in female athletes. Promotes overall health and well-being among female athletes by reducing physical stress and improving sleep quality.

Keywords: Therapeutic Yoga, Varma therapy, SEMG, Sleep quality, Women athletes, Muscle recovery.

1. Introduction

Sleep is a vital biological function for athletes, as it contributes significantly to physical recovery and optimal performance [31]. In female athletes, the quality of sleep gains added importance due to the combined effects of intensive training, hormonal changes, and psychological demands [27]. Holistic practices such as yoga and traditional varma therapy (VT) have recently gained attention as potential interventions to enhance sleep quality (SQ) and overall health, with the development of non-invasive techniques like surface electromyography (SEMG) and other physiological parameters. SEMG helps to objectively measure muscle activity and relaxation patterns, offering valuable insights into the effectiveness of therapeutic interventions in promoting better sleep outcomes [6,24].

Sleep is vital to physiological recovery, emotional regulation, and cognitive functioning, all essential for optimal athletic performance. Inadequate SQ has been associated with diminished reaction times, impaired decision-making, heightened injury risk, and compromised immune function. Female athletes, in particular, may experience sleep disturbances due to hormonal fluctuations, psychological stressors, and demanding travel and competition schedules [16]. Additional factors such as academic pressures, body image concerns, and limited access to mental health resources further influence SQ in this population. Persistent sleep disturbances not only slow down recovery but can also cause long-term health problems. These include higher cortisol levels, lower bone mineral density, and issues with menstrual cycles. Therefore, optimizing sleep is imperative for both athletic excellence and the overall well-being of female athletes.

Yoga, an ancient Indian practice, integrates physical postures (asanas), breath control (pranayama), and meditation (dhyana) to harmonize the autonomic nervous system and promote relaxation [12]. Yoga can decrease sympathetic overactivity, enhance parasympathetic tone, and increase melatonin secretion, factors crucial for initiating and maintaining SQ [19]. Specific asanas such as supta baddha konasana (reclining bound angle pose) [25], Viparita Karani (Legs-Up-The-Wall Pose) [4], and Balasana (Child's Pose) [18] are particularly effective in inducing relaxation and alleviating muscular tension, making them beneficial for athletes experiencing physical fatigue and sleep disturbances. Pranayama techniques like Anulom Vilom (alternate nostril breathing) and Bhramari (bee breath) have been shown to reduce anxiety and foster a tranquil mind [10], thereby preparing the body for restful sleep. Moreover, incorporating mindfulness meditation into yoga has been associated with increased sleep duration and efficiency by mitigating intrusive thoughts and emotional dysregulation.

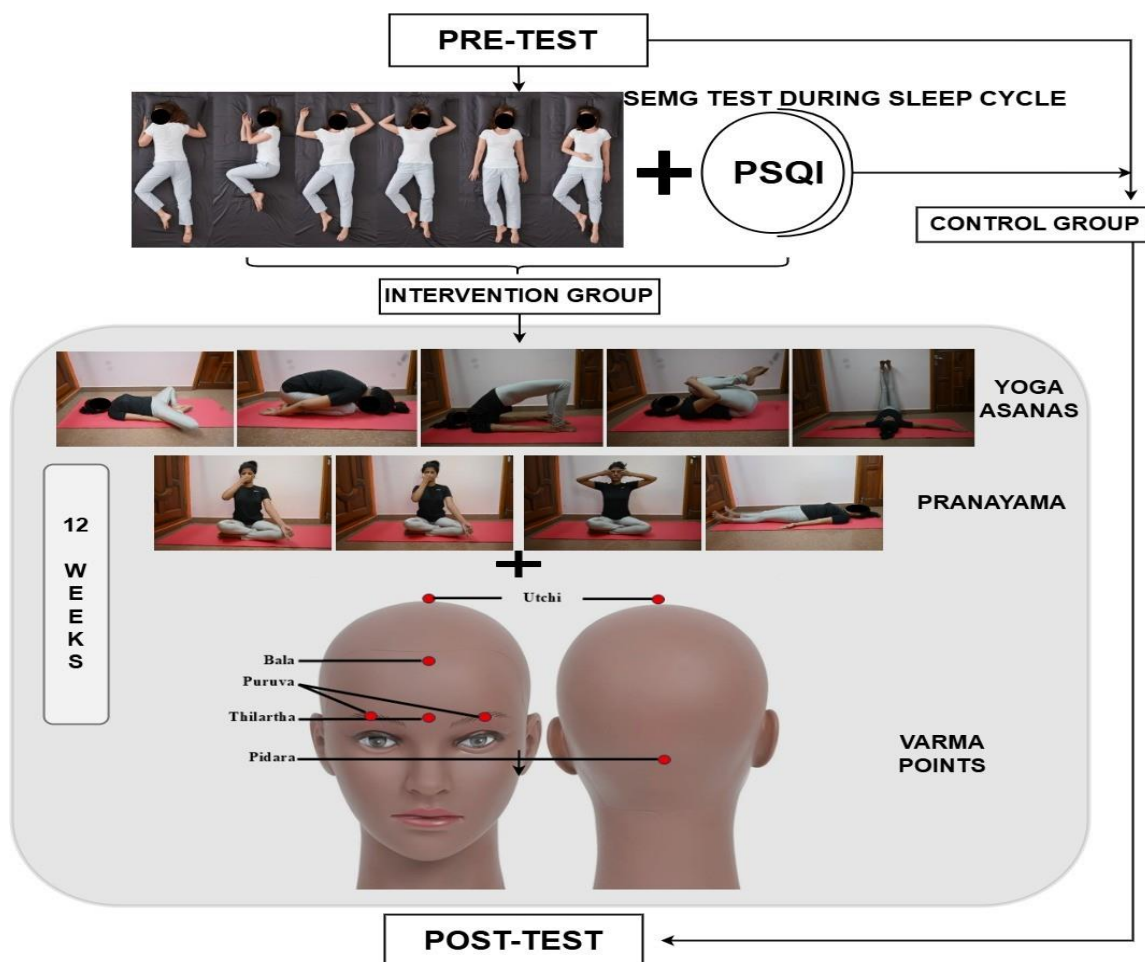
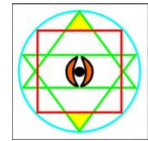


Figure 1. Graphical representation of a 12-week training intervention for women athletes

Varma therapy, a traditional healing method from South India rooted in Siddha medicine, involves stimulating specific energy points (known as Varmams) to harmonize the body's flow of vital life force or prana. This practice shares conceptual similarities with acupressure and meridian theories from traditional Chinese medicine, emphasizing regulating nervous activity, circulation, and muscular relaxation through targeted pressure [15]. For women athletes facing sleep disturbances from muscular fatigue, anxiety, or



hormonal imbalances, VT offers a gentle, holistic, and non-pharmacological solution. Specific cranial Varma points, such as Thilartha Varmam [14], Puruva Varmam, and Bala Varmam, are traditionally believed to regulate emotional balance and alleviate mental restlessness, thus facilitating sleep onset [14]. Additionally, Pidari Varmam and Utchi Varmam are used to calm the central nervous system and enhance cerebral relaxation.

In parallel, SEMG is a modern, objective tool to evaluate neuromuscular activity and relaxation. By recording electrical signals from superficial muscle groups like the trapezius or lumbar paraspinals, SEMG allows for detailed analysis of muscle tension and recovery in response to therapeutic interventions. This makes it particularly relevant for assessing the physiological effects of relaxation practices such as yoga and VT [17]. When combined with subjective measures like the Pittsburgh Sleep Quality Index (PSQI), EMG data can provide robust insights into how muscle relaxation corresponds to improvements in SQ. Integrating EMG into the research on yoga and VT represents an innovative convergence of ancient wisdom and modern science. This approach can help women athletes identify which postures or pressure points yield measurable relaxation, allowing practitioners to individualize interventions based on muscular response. EMG enables continuous assessment across training cycles, ensuring therapeutic strategies align with evolving neuromuscular and psychological demands. So, our study hypothesizes combining yoga and VT may significantly improve SQ in women athletes. This integrative approach bridges traditional knowledge with contemporary diagnostics and opens new pathways for evidence-based, personalized wellness 12-week intervention (Figure 1).

2. Methodology

2.1 Study Design

This study employed a quasi-experimental, pre-test and post-test control group design to evaluate the effects of a structured yoga and VT protocol on SQ and muscle relaxation among women athletes. A single-blinded study used a Latin square random design. The hypothesis was kept hidden from the subjects.

2.2 Sample Size Determination

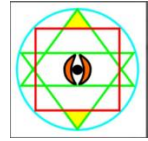
A priori power analysis using G*Power version 3.1 (effect size = 0.30, α = 0.05, power = 0.80) indicated a minimum sample size of 26 for repeated measures ANOVA (within-between interaction). To accommodate potential dropouts, 27 women athletes aged 18 to 30 years, were actively training (mean = 22 ± 3.4 hrs/week) and competing for at least two years, not on sleep-affecting medications, free from recent injuries or neurological [20] or musculoskeletal disorders, and not currently engaged in yoga or alternative therapies were recruited. After screening based on inclusion and exclusion criteria, we used a sleep diary to validate PSQI with subjective sleep logs.

2.2.1 Randomization and Group Allocation

Eligible participants were randomly allocated into two groups using a computer-generated sequence. The intervention group received a combined yoga and VT intervention. The control group continued their usual sports training without any added therapeutic input. Both groups were advised to avoid initiating any new physical or psychological regimens during the entire period of this study. An intervention group ($n = 14$) and a control group ($n = 13$) [23]. The total intervention period was systematically prepared, with assessments conducted at baseline and post-intervention [26]. All subjects provided written informed consent, and the institutional ethical committee approved the study protocol.

2.3 Intervention Protocol

The intervention was implemented over twelve weeks, comprising three weekly sessions, each lasting 45 minutes, 30 minutes of yoga followed by 15 minutes of VT. The protocol was designed based on validated



models that emphasize pelvic alignment, neuromuscular relaxation, and autonomic balance to improve sleep and recovery [33,34]. The control group continued with their standard athletic training and recovery regimens. They were not engaged in yoga, VT, or new lifestyle interventions. To ensure consistency, all participants were provided basic sleep hygiene education (e.g., limiting screen time before bed, regular sleep schedules).

2.3.1 Yoga Protocol

A certified yoga instructor conducted 30-minute sessions comprising 20 minutes of targeted asana practice: Supta Baddha Konasana to enhance pelvic floor circulation, Viparita Karani to alleviate lumbar tension and support venous return, Setu Bandhasana for lumbar and gluteal engagement, Apanasana to facilitate abdominal relaxation and digestion, and Balasana for spinal decompression and mental calmness, followed by 10 minutes of pranayama and relaxation techniques, including Anulom Vilom to regulate autonomic function, Bhramari to lower sympathetic arousal, and yoga nidra to promote parasympathetic dominance and sleep preparedness.

2.3.2 Varma Therapy

VT sessions, administered by a Siddha practitioner with expertise in Marma chikitsa, involved gentle circular fingertip pressure (30–60 seconds per point, clockwise) on key Varma points (Table 1); Thilartha Varmam [21], situated between the eyebrows, was stimulated using gentle fingertip pressure to regulate pineal gland activity and induce mental tranquillity. Puruva Varmam, located at the medial end of the eyebrows, was manipulated to reduce emotional agitation and tension on the forehead, helping in sleep initiation. Bala Varmam, found superior to glabella, was activated to ease stress in the cranial muscles and promote cerebral relaxation. Pidari Varmam, located at the external occipital protuberance, was stimulated to reduce neural excitability and induce deep relaxation. Finally, Utchi Varmam, found at the crown of the head, was engaged to harmonize brainwave activity and promote deeper sleep, aiming to correct pranic flow, reduce muscular stress, and enhance mental relaxation.

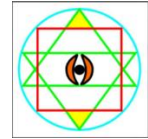
Table 1. Cranial varmam points location and manipulation technique

Varmam	Location of Varmam	Manipulating Technique
Thilartha Varmam	Between the eyebrows (glabella region)	Apply gentle fingertip pressure in a circular motion for 30–60 seconds to promote calmness.
Utchi Varmam	Crown of the head (topmost point on the skull)	Press and release using the thumb or index finger for 30 seconds to aid cerebral relaxation.
Puruva Varmam	Medial ends of the eyebrows	Use thumb pads to press gently for 30 seconds to reduce ocular tension and enhance focus.
Bala Varmam	Above the temple region on the forehead	Apply circular massage using three fingertips for 45 seconds to ease frontal stress.
Pidari Varmam	Anterior to the ear (temporal area)	Apply deep circular pressure with index fingers for 30–60 seconds to relieve temporal strain.

2.4 Assessment measures

2.4.1 Surface Electromyography (SEMG)

SEMG data were collected using Trigno Avanti wireless sensors connected to a 16-channel EMG acquisition system. Initial MVIC (Maximum Voluntary Isometric Contraction) assessments were performed during the first week to establish baseline values for data normalization [1]. Target muscles included the transverse abdominis(TA), erector spinae(ES), gluteus medius(GM) [2], and levator ani(LA)



[11], with electrodes applied bilaterally based on SENIAM guidelines to ensure consistent placement between participants [13].

To maintain high data fidelity and reduce variability due to skin-electrode impedance, participants were instructed to avoid inserting any chemical substances into the vaginal or anal areas for at least 24 hours prior to SEMG assessment, as per standard pelvic floor EMG protocols [11]. Signal acquisition parameters were standardized, including a sampling rate of 2000 Hz per channel, full-wave rectification, and RMS-based reintegration. Instrument gain was set at $\times 500$, with input impedance exceeding 1 M Ω . Signal quality was maintained using a Common Mode Rejection Ratio (CMRR) of -140 dB in the 20–500 Hz range, supported by a 50/60 Hz line filter depending on local electrical standards. Input bias current was kept below one picoampere, and noise levels were limited to under 0.1 V. A wide bandpass filter was employed, ranging from 20 Hz (± 5 Hz) to 500 Hz (± 50 Hz), in line with established signal acquisition standards [8]. To ensure consistent sleeping conditions for data collection, the same environmental setup was provided to each participant in the ergonomics laboratory of the National Institute of Technology, Puducherry, including two standardized pillows and pillow covers. Participants were allowed to sleep in their preferred positions, ensuring maximum comfort and ecological validity of the sleep assessment. During the scheduled recording, participants undergoing menstruation were rescheduled to the following week to avoid hormonal interference with EMG and sleep parameters [3]. In this study, three participants from the intervention group and one from the control group had their sleep muscle activation data deferred due to menstrual timing.

SEMG data analysis was focused on the N2–N3 stages of sleep, which were identified using standard sleep staging methods based on EEG and behavioural markers, representing stable non-REM sleep conducive to neuromuscular relaxation [5]. Amplitude values during sleep were normalized to each participant's MVIC baseline, and a percentage-based recovery index was calculated to quantify neuromuscular relaxation during the deep sleep phase.

2.4.2 Sleep Quality Assessment

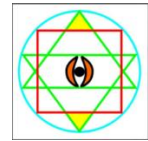
PSQI was administered at baseline and post-intervention to assess participants' subjective SQ over the preceding month. This validated instrument comprises 19 self-rated questions, grouped into seven components: subjective SQ, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleep medication, and daytime dysfunction. A global score > 5 indicated poor SQ [32].

3. Statistical Analyses

Statistical analyses were conducted using IBM SPSS Statistics version 29.0. Descriptive statistics, presented as mean \pm standard deviation (SD), were calculated to represent the distribution of all measured variables and central tendency. SEMG data were normalized based on MVIC values and reported as mean \pm SD. To evaluate the effects of the intervention, repeated measures ANOVA was utilized to compare changes within each group (pre- and post-intervention) and between the intervention and control groups for both SEMG amplitude and the global score from the PSQI. Statistical significance was determined at a threshold of $p < 0.05$.

4. Results

The muscle activation analysis and SQ assessment findings indicate that the integrated yoga and VT intervention produced significant physiological and behavioral improvements among the participants in the intervention group compared to the control group. Normalized SEMG demonstrated a significant reduction in muscle activity across all four monitored regions: LA, ES, TA, and GM after a 12-week intervention (Table 2). These reductions, confirmed through paired t-tests and mixed ANOVA ($p < 0.01$), suggest



improved muscle recovery and reduced neuromuscular stress during sleep. In contrast, the control group showed minimal changes, indicating persistent muscle activation, likely due to insufficient recovery during rest.

Table 2. Comparison of normalized muscle activation (%) between intervention and control groups, pre- and Post-Intervention.

Muscle Group	Intervention (Mean \pm SD)		Control (Mean \pm SD)		p-value
	Pre	Post	Pre	Post	
Levator Ani	37.3 \pm 4.2**	28.6 \pm 3.6	40.8 \pm 4.0	38.7 \pm 3.9	< 0.01
Erector Spinae	58.7 \pm 5.1**	34.9 \pm 4.4	59.9 \pm 5.0	55.1 \pm 4.9	< 0.01
Transverse Abdomen	49.1 \pm 4.8*	30.2 \pm 3.9	46.6 \pm 4.7	47.2 \pm 4.6	< 0.05
Gluteus Medius	40.5 \pm 4.5**	24.1 \pm 3.5	44.9 \pm 4.4	43.7 \pm 4.3	< 0.01

**p<0.001, *p<0.05

Parallel to the physiological changes, improvements were also observed in subjective SQ. As shown in Table 2, the global PSQI score in the intervention group decreased significantly from a pre-test mean of 11.5 ± 1.8 to a post-test mean of 4.8 ± 1.5 ($p < .001$), reflecting a transition from poor to good SQ. The control group showed no significant improvement in global PSQI scores (pre = 11.2 ± 1.7 ; post = 10.6 ± 1.6 ; $p = .81$).

Subscale analysis revealed that the intervention group experienced statistically significant improvements in subjective SQ ($p = .004$), sleep latency ($p = .004$), sleep duration ($p < .001$), and sleep disturbances ($p = .012$). These outcomes contrast sharply with the control group, which exhibited no meaningful changes across these domains.

Together, these findings highlight the effectiveness of the yoga and VT intervention in enhancing neuromuscular relaxation and promoting restorative sleep. The coordinated improvements in muscle deactivation patterns and sleep-related behaviors suggest that the combined therapeutic approach offers a non-pharmacological and holistic solution for improving recovery and SQ in women athletes experiencing fatigue, stress, or disrupted rest.

5. Discussion

Our study demonstrated significant reductions in activation in all targeted muscles, LA, ES, TA, and GM, following a 12-week combined yoga and VT protocol, as reflected by SEMG data. These neuromuscular changes were accompanied by marked improvements in SQ, with the intervention group's global PSQI scores decreasing from 11.5 ± 1.8 to 4.8 ± 1.5 ($p < .001$), while the control group showed no significant change.

These outcomes align with prior evidence linking mind-body interventions with enhanced sleep and muscular relaxation. A meta-analysis by Wang et al. (2020) reported moderate improvements in PSQI scores among women who engaged in yoga (SMD = -0.54 ; 95% CI, -0.89 to -0.19 ; $p = 0.003$) [30]. Complementary research in athletic populations suggests that practices like yoga improve sleep latency and efficiency and activate parasympathetic dominance [9]. Our data extend these findings by providing direct physiological evidence through SEMG of neuromuscular relaxation during sleep, particularly in muscles associated with core stability and pelvic control.

Table 3. Pre-test and Post-test PSQI Scores (Mean and SD) for Intervention and Control Groups

PSQI Variable	Group	Pre-test		Post-test		P-value
		Mean	SD	Mean	SD	
Global Score	Intervention	11.5	1.8	4.8	1.5	<.001**
	Control	11.2	1.7	10.6	1.6	.81
Sleep Quality Score	Intervention	1.8	0.7	1.2	0.6	.004*
	Control	1.9	0.6	1.8	0.6	.44
Sleep Latency Score	Intervention	2.3	0.9	1.5	0.8	.004*
	Control	2.4	0.9	2.0	0.9	.012
Sleep Duration Score	Intervention	2.2	1.1	1.5	0.7	<.001**
	Control	2.0	0.8	2.3	0.9	.17
Sleep Efficiency Score	Intervention	1.2	1.2	1.0	1.0	.83
	Control	1.5	1.3	1.9	1.1	.24
Sleep Disturbance Score	Intervention	1.3	0.5	1.2	0.5	.012*
	Control	1.3	0.5	1.3	0.6	1.00
Sleep Medication Score	Intervention	1.3	1.4	1.1	1.3	.55
	Control	1.8	1.2	1.7	1.2	.82
Sleep Dysfunction Score	Intervention	0.8	0.9	0.7	0.7	.35
	Control	0.9	0.6	0.9	0.6	.80

Note. *p<0.05, **p<0.001

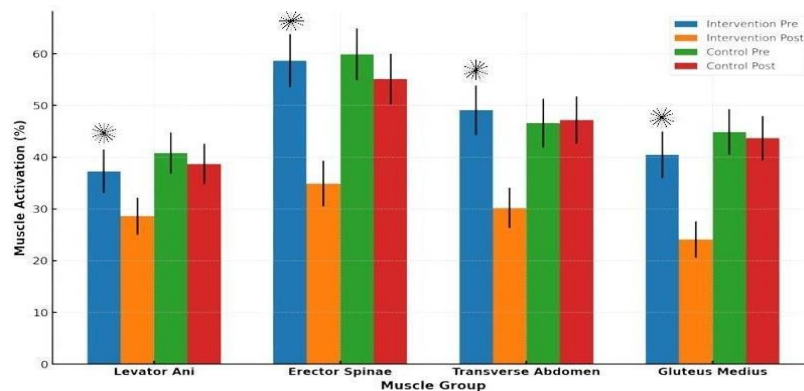
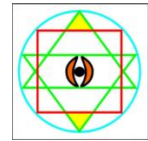


Figure 2. Normalized mean SD of SEMG activation (%) difference among Pre and Post test in intervention and control.

SEMG-based studies in yoga contexts remain limited; our results echo early work indicating reduced muscular activation following guided relaxation exercises (e.g., Sudershan Kriya), leading to improved sleep phases and cognitive function among non-athletic adults [22, 28]. Additionally, the concept of “local sleep” during yoga supports the neurophysiological basis of restful muscle states in conscious but deeply relaxed conditions [7]. Our study enhances these findings by demonstrating targeted improvements in



athletic muscle groups: for instance, Levator Ani muscle activation decreased from 37.3 ± 4.2 to 28.6 ± 3.6 V ($p < .01$), with a strong group \times muscle interaction in ANOVA ($F=64.12$, $p = 1.77 \times 10^{12}$) (Figure 2). Such reductions likely reflect better neuromuscular recovery facilitated by the autonomic shift toward parasympathetic dominance, consistent with prior evidence [9].

By providing objective muscle activation data and validated sleep quality metrics (PSQI), this work offers a blueprint for quantifying the efficacy of integrated somatic therapies in female athletic populations (Table 3). It underscores the utility of SEMG as a biomarker for neuromuscular recovery during sleep and opens the door to multimodal research combining physiological, psychological, and performance metrics for proper recovery. Yoga combined with VT shows promise as a supportive recovery method for athletes, offering improvements in muscle relaxation and sleep that could enhance performance and reduce injury risk, especially in women facing intense physical and mental demands. Further research should utilize tools like polysomnography or actigraphy to assess sleep stages, and include markers such as cortisol or heart rate variability, to better understand the underlying physiological effects [29]. Larger RCTs with neuroimaging or EEG could help confirm brain-muscle recovery connections.

6. Conclusion

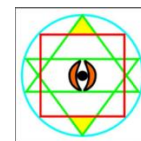
This study explored the impact of yoga and VT on muscle activation and sleep quality in women athletes. The intervention group showed significant muscle activity reductions and improved sleep patterns, while the control group saw minimal changes. These results highlight the potential of traditional therapies as effective recovery tools in sports. The findings support incorporating such methods into athlete recovery routines to enhance performance and reduce injury risk. Though the study was limited by its small sample size and reliance on subjective sleep measures, it lays the groundwork for future trials using objective tools like polysomnography, cortisol levels, or EEG. In summary, combining Yoga and VT offers a promising, non-invasive approach to supporting physical recovery and mental well-being in athletic populations.

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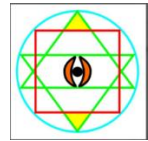
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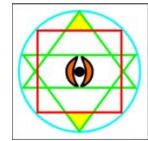
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**Balance Enhances Cognition: An Experimental Study of Balancing Asana
in Early Adolescent Children**

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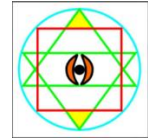
Abstract: Asana, the main component of yogic physical practice, promotes motor skills and cognitive functions in both normal and special needs children. Neural connectivity between the vestibular organ and cognitive areas of the higher brain via the cerebellum and locus coeruleus of the pons and induces neurotrophic factors such as brain-derived neurotrophic factor (BDNF). Regular practice of asanas enhances both balance and cognitive abilities, highlighting the role of Balancing Asana (BA) on cognition. This study is based on the mechanism linking to BA to cognitive function. A set of BA was introduced to children to examine their balance and cognitive function. Forty school children aged 10 to 13 years were randomized into BA and control groups (n=20 each; mean age 11.4 ± 1.2 years). The children were assessed for cognition using the Stroop color-word task tailored for children and their balance using the Bass stick test. After the pretest, the BA group practiced a set of BA for 30 minutes daily, five days a week for six weeks, while the control group continued with their usual routines. Both groups were assessed at the end of six weeks. Results showed that the BA group significantly improved in the Stroop color tasks ($p < 0.001$) and the Bass stick test ($p < 0.001$) compared to the control group with larger effect sizes. Our findings demonstrate that BA contributes to vestibular connectivity, aiding balance and enhancing children's cognitive abilities.

Keywords: Balancing Asana, Vestibular organ, Cerebellum, Cognition

1. Introduction

Childhood is a crucial period for the rapid development of physical fitness and cognitive function [1]. Additionally, Yogic techniques have been shown to promote health, wellness and mental well-being across various age groups of children [2-4]. Asana, the fundamental component of yogic physical activity, is believed to improve aerobic capacity, muscular strength, endurance, and balance [5-6] by enhancing core muscle stability connected to the spine, pelvis, legs, and shoulders [7-8]. Research indicates that regular asana practice positively influences cardiovascular health [9-10], cognitive function and academic performance [11-13] in children. The potential benefits of asana have generated interest in research focusing on both typically developing and special needs children in concerning cognition and motor skills [14-15]. Studies demonstrate that enhancing motor skills through asana [16-17] is linked with cognitive function [18]. The mechanism of yogic exercise influences the higher brain center responsible for memory and cognition [12;16-18].

To explore how asana improves cognitive functions, the authors sought to identify possible mechanisms supported by existing literature about the cognitive benefits derived from asana practice. Broadly, yogic asanas are categorized based on different movements and positions. One primary category is balancing asana (static balance). Balancing asanas (BA) involve various movements by shifting the center of gravity [19]. Regardless of whether performed standing, sitting, or supine, BA stimulates the vestibular, neuromuscular, and proprioceptive systems [20-21]. The perception of body movement and static balance in achieving the final posture is processed through vestibular detection of inertial motion combined with proprioceptive and visual signals [22]. Consequently, BA stimulates the vestibular system. The semicircular canals and otolith organs of the peripheral vestibular system are located in the inner ear [23]. While



achieving the final position of BA, it senses motion, navigation, and spatial orientation [24-25]. Anatomically, the vestibular organ connects with the cerebellum and pons via the vestibular nucleus [26-27]. Neuroanatomical studies reveal that the cerebellum serves as a bidirectional pathway linked to the dorsolateral prefrontal cortex, inferior frontal gyrus, and anterior cingulate cortex of the cerebral cortex, which regulate cognitive functions [28-31]. Thus, normal vestibular stimulation is somewhat essential for cognitive functions in children, such as spatial memory, navigation, and attention [32-34]. Neurological studies indicate that the locus coeruleus (LC) in the pons plays a vital role in numerous higher brain functions, including cognition and memory [35]. Furthermore, the vestibular system is interconnected with the dorsal raphe and the LC in the pons. The LC has a direct connection with the hippocampus and amygdala [36]. Therefore, BA transmits vestibular stimulation to the cerebellum, which then responds to the LC in the pons. In the hippocampus, place cell activity and theta rhythm can be modulated solely by vestibular stimulation [37]. Theta rhythm in the hippocampus enhances cognitive functions such as spatial orientation and spatial memory [38-39]. Occasionally, achieving a higher level of asana leads to a state of sukhaavastha or non-duality. Reaching this elevated mental state may promote theta rhythm in the hippocampus. Increasing literature also supports the neurochemical and neurophysiological changes that arise through asana practice. Neurochemical components such as neurotrophic factors [e.g., brain-derived neurotrophic factor (BDNF) or insulin-like growth factor 1 (IGF-1)], metabolites (e.g., lactate), and neurotransmitters (e.g., serotonin) play a crucial role in neuronal development and cognitive function [40 – 42]. Neurotrophic factors facilitate neural connectivity, which is a mechanism that may elucidate the relationship between BA and cognition.

Therefore, the present study was based on the premise of the mechanisms linking of BA and cognition. A set of BA was thus introduced to children, and their balance and cognitive function were assessed.

2. Material and methods

2.1 Design

It was a randomized pre-post-control trial that compared balance and cognition following the practice of a set of BA. A comparison was made both within the group and between the groups.

2.2. Participants

For this study, 40 students from Popular High School in Imphal, Manipur, studying in grades five to seven. Subjects were randomly assigned to two groups using a computerized random method. The ages of the subjects ranged from 10 to 13 years (group mean and SD 11.58 ± 2.02) with 53% being girl students. Inclusion criteria included healthy students with regular attendance within the age group of 10-13 years. Exclusion criteria comprised any history of psychiatric or neurological disorders and color vision impairment. Signed informed consent was obtained from the principal of the school. The subjects were divided into two groups of 20 each: Group 1 (BA) and Group 2 (Control). Data was collected from both groups, referred to as pre-test data. Following this, Balancing Asana training was administered to the BA group for six weeks while the control group continued with their usual routine. After the training was completed, data was collected again from both groups as post-test data.

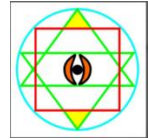
2.3. Assessments

The participants were assessed for cognition using the Stroop test and balance with the Bass stick test.

The stoop color and word test (SCWT) is a neuropsychological test design to assess the ability to inhibit cognitive interference. It is also considered a cognitive control task [43]. The SCWT was developed by John Ridley Stroop in 1935. In this task, subjects must read three tables as quickly as possible. The first card (set.1) requires reading words, the second (set.2) involves reading the color of the word and the third card (set .3) asks the participants to name the color of the ink in which a printed word is displayed. The



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Stroop test measures cognitive functions such as attention, processing speed, cognitive flexibility and working memory. Participants were instructed to respond as quickly and accurately as possible. Score were recorded in seconds for all three sets [44].

Bass stick test: The Bass stick test evaluates balance, in which participants alternate foot hopping and hold a static position. It measures the static balance of the subject by maintaining stability on a narrow surface while standing on the ball of the foot. This test is suitable for both sexes aged ten years and above. Scores are recorded in seconds [45].

2.4. Administration of the training program

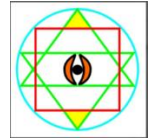
After completing the pre-test, the BA group underwent six weeks of BA training, while the control group engaged in their daily activities. Training was conducted six days a week, from Monday through Saturday. Initially, subjects were given to have balancing asanas. The BA training module was as follows.

Table 1. Practice modules of BA with their balancing potentiality

Sl. No.	Name of the practice	Time
1	Starting prayer: Om sahanavavatu	2 min
2	Standing Loosening exercise	2 min
3	Tadasana (standing palm tree): balance is maintained by putting body weight on the big toes and partially on the other toes of both legs.	2 min
4	Triyakatadasana (standing swaying palm tree): balance is maintained by both legs by shifting the center of gravity to the left or right side by bending the upper body from the waist region with hand stretch interlocking position.	2 min
5	Vriksasana (standing tree pose): balance is achieved in a single leg by folding one leg at the knee and placing the sole on the inner thigh of the standing leg.	2 min
6	Natrajasana (standing dancer pose): Balance is maintained in a single leg, and another leg is held by the same hand by pulling up from the back.	2 min
7	Garudasana (standing eagle pose): balance is achieved in a single leg by typically rapping another leg and both arms cross each other from at elbow joints.	2 min
8	Virabhadrasana (back bending warrior pose) balance is maintained in a single leg by bringing the body and another leg parallel to the ground.	2 min
9	Ardhanavasana (abdominal balancing half boat pose): balance is achieved by being in the prone position on the abdomen by lifting the upper trunk and legs towards the sky.	2 min
10	Parvatasana (sitting mountain pose): sitting in padmasana, then standing and balancing on both knees.	2 min
11	Prapadasana (sitting tip-toe pose): balance is maintained by squatting down both heels in the air.	2 min
12	Relaxation: Savasana (corpse) pose.	5 min
13	Closing prayer: Sarve bhavantusukhinah	3 min
	Total =	30 min

2.5. Statistical analysis

The data collected from the pre and post-test was analyzed using descriptive statistics. The significance level was set at 0.05, and all statistics were performed using Jamovi 2.2.1 free software. Cognition was



compared with the values of three sets of Stroop tests and balance was assessed using the Bass Stick test. Descriptive statistics was applied to determine the characteristics of the pertaining data. Additionally, a paired sample t-test was employed to identify the significant difference between the means of the pre- and post-test cognition tasks and balance. In the between-group comparison, Stroop test sets one and two did not show normal distribution. The results of Shapiro-Wilk Normality Test indicated that low *p*-values violate the normality assumption. Therefore, for Stroop tasks set 1 and 2, the Welch's t-test was conducted. Other variables, such as Stroop task set 3 and the Bass stick test also utilized Independent Samples t-test.

3. Results

Table 1: Comparison of Pre and Post test of BA Group on the three sets of Stroop test

Group	Mean \pm SD	t-value	<i>p</i> -value	Cohen's d
SET1-Pre	6.05 \pm 1.32	1.17	<0.001	1.17
SET1-Post	5.30 \pm 1.08			
SET2-Pre	8.50 \pm 1.50	2.67	<0.001	2.50
SET2-Post	6.90 \pm 1.29			
SET3-Pre	12.00 \pm 1.72	2.50	<0.001	2.67
SET3-Post	9.30 \pm 1.34			

Note: Result of Paired Samples t-test, Significant at 0.05, SET1-first card, SET2- second card, SET3- third card.

Table 1 indicates a significant difference regarding the Stroop test for the BA group with t-values of 1.17, 2.67, and 2.50 and *p*-values (sig) of <0.001, <0.001, and <0.001, respectively found lower than the 0.05 level of significance demonstrating larger effect sizes.

Table 2: Comparison of Pre and Post test of Control Group on the three sets of Stroop test

SET	Mean \pm SD	t-value	<i>p</i> -value	Cohen's d
SET1-Pre	5.85 \pm 1.27	0.294	0.204	0.29
SET1-Post	6.10 \pm 0.85			
SET2-Pre	8.70 \pm 1.46	0.000	1.000	0.00
SET2-Post	8.70 \pm 1.46			
SET3-Pre	11.75 \pm 1.55	0.188	0.412	0.18
SET3-Post	11.50 \pm 1.54			

Note: Result of Paired Samples t-test, Significant at 0.05, SET1-first card, SET2- second card, SET3- third card

Table 2 shows that there is no significant difference in the Stroop test of the control group with t-values of 0.29, 0.00, and 0.18, and corresponding *p*-values of 0.204, 1.000, and 0.412, all exceeding 0.05 and indicating smaller effect sizes.

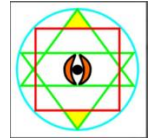


Table 3: Comparison of Pre and Post test of BA Group on Bass Stick Test

Variable	Mean±SD	t-value	p-value	Cohen's d
BST Pre	16.65±3.64	15.9	<0.001	3.56
BST Post	22.70±4.25			

Note: Result of Paired Samples t-test, Significant at 0.05, BST- Bass Sick Test

In Table 3 a significant difference is observed in the Bass Stick test for the experimental group with the t-value of 15.7 and p -value (sig) <0.001, both of which are below 0.05 and reflect a high effect size as indicated by Cohen's d value of 3.56.

Table 4: Comparison of Pre Post test of Control Group on Bass stick test

Variable	Mean±SD	t-value	p-value	Cohen's d
BST Pre	15.10±5.20	4.97	<0.001	1.11
BST Post	16.65±5.09			

Note: Result of Paired Samples T-Test, Significant at 0.05, BST- Bass Sick Test

Table 4 reveals a significant difference in the Bass Stick test for the control group with a t-value of 4.97 and a p -value (sig) <0.001, both lower than 0.05 and yielding a high effect size of Cohen's d value of 1.11.

Table 5: Comparison between BA and Control Groups on the three sets of Stroop test on their mean difference

Variable	t-value	p-value	Cohen's d
SET 1	4.20	<0.001	1.33
SET 2	6.84	<0.001	2.16
SET 3	6.23	<0.001	2.06

Note: SET 1 and 2 results of Welch's t and SET 3 student t-test, Significant at 0.05

Table 5 demonstrates a significant difference regarding the three sets of Stroop tasks between the BA and control group, with t-values of 4.20, 6.84, 6.23, and the p -values of (sig)<0.001, <0.001 and <0.001 and Cohen's d values of 1.33, 2.16 and 2.06.

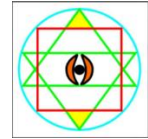


Table 6: Comparison between Experimental and Control groups of Bass Stick Test on mean difference

Variable	t-value	p-value	Cohen's d
BASS STICK TEST	9.15	<0.001	2.89

Note: Result of student t-test, Significant at 0.05

Lastly Table 6 indicates a significant difference in the Bass Stick Test while comparing between the BA and control groups with a t-value of 9.15 and p -value(sig) <0.001, both lower than 0.05, and a higher effect size represented by Cohen's d value of 2.89.

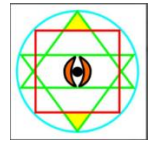
4. Discussion

The findings of this study reveal that six weeks of the BA program have an effect on improving the three sets of Stroop tasks and the Bass stick test. For the BA group, the results of the three sets of Stroop tasks analyzed using the paired sample 't' test showed a significant change between pre and post readings. Conversely, for the control group, from the same sets of Stroop tasks indicated no significant changes between pre and post readings. In the Bass stick test, the results of paired sample t-test that both groups demonstrated considerable change in their pre and post readings. Comparing the BA and control groups with the *Student t-test* and *Welch's t-test* revealed substantial changes in the three sets of Stroop tests and the Bass Stick test. Therefore, according to statistical analysis, it was confirmed that the six-week BA program was effective in improving balance and cognition among children.

The Stroop task is based on three interrelated cognitive processes: inhibition, working memory, and cognitive flexibility [43]. Inhibition is the ability to resist and control one's attention and thoughts, which may be habitual or impulsive. Working memory involves retaining essential and pertinent information in mind simultaneously engaging in another task. Cognitive flexibility refers to the ability to switch quickly and easily between different tasks [46]. In this study, the BA program improved these three levels of cognitive processes compared to the control group. The findings also support one of the modules aimed at enhancing inhibition skills in individuals by transferring skills from training, specifically, from BA training to cognitive abilities [47].

Another insight comes from neuroimaging studies using fMRI which have shown that the three components of cognitive function engage a network of brain regions, including the dorsolateral prefrontal cortex, inferior frontal gyrus, anterior cingulate cortex, supplementary motor cortex, pre-supplementary motor cortex (pre-SMA) and other areas are also involved in programming complex sequences of movements and coordinating bilateral movements [49]. In the present BA module, several Asanas such as Natarajasan, Guradadasana, Virabhadrasana, and Propadasana involve in bilateral complex sequences of movement in the final positions. This pathway may support the transformation of skills from BA asana training to cognitive abilities in the Stroopcolor-word task.

The study by Rogge et al. 2017 demonstrated that 12 weeks of balance training could induce structural plasticity in higher brain centers such as the superior temporal cortex, visual association cortex, posterior cingulate cortex, and superior frontal sulcus. These areas facilitate higher cognitive functions such as memory and spatial cognition and are also involved in visual-vestibular self-motion processing. Our present study replicates the Rogge et al.2017 findings [50]. The BA program induces neural connectivity through the vestibular pathway, which is reflected in improvements in balance and increased ability to inhibit cognitive interference in the Stroop task readings compared to the control group.



Generally, Asana, including the BA, is practiced with closed eyes and participants maintained the final posture with their eyes closed according to their individual ability. Studies have shown that achieving balance with closed eyes is more challenging than with eyes open [51]. In a review by Prosperini et al. (2013), the ability to balance with closed eyes was used to assess balance in patients with multiple sclerosis compared to those with open eyes. The result indicated that there is a greater degree of imbalance with closed eyes than with open eyes due to the absence of visual proprioception [52]. Silvas tested static balance among young women with open and closed eyes while wearing high-heeled shoes. The findings revealed that closed eyes were a contributing factor to maintaining static balance in standing posture [51]. Thus, practicing with eyes closed may also influence induced neural connectivity and improved balance. As a result, there may be improved cognition in children participating in the BA program compared to the control children.

The present study observed that BA improved motor skills by enhancing balance readings in the Bass stick test. Studies have demonstrated that motor skills and cognitive function are interconnected [53-54]. Children need to enhance their balancing motor skills through regular physical activity, which would, in turn, improve cognitive function.

In this study, we utilized BA to engage the vestibular, proprioceptive, and reticular formation systems. Regarding of children's balance skills, the cerebellar region plays a significant role in maintaining balance. A recent review the structural brain correlates with postural balance and training in humans revealed that a larger cerebellar gray matter volume is associated with better balance across various training programs for healthy and clinical populations [55]. Our findings regarding Bass stick test readings for static balance in healthy children may also support this concept. Another observation from the Bass stick test readings indicate that in the pre and post data, both the BA group and the control group showed improvements in balance. The reason for this could be that learning is a natural phenomenon in children [56] which they often observe and emulate from others' daily activities. However, between-group results revealed that BA enhances neural connectivity and significantly improves balance in BA children compared to their control children.

5. Conclusion

Based on the results obtained, the present randomized controlled trial demonstrated that balancing asanas positively impact vestibular connectivity, aiding in balance for children. The findings confirmed that enhancing balancing skills contributes to improved cognitive ability in children. Improvements in balance and cognitive tasks among children participating in BA may support the mechanisms underlying these benefits discussed at the beginning of this paper. Despite the small sample sizes, this study provides significant opportunities for future research to examine the impact of various types of asanas on cognition. Future studies could be exploring simple forms of asana compared to complex sequences regarding cognitive abilities. Additionally, this study could be replicated with children who have cognitive deficits or special needs utilizing neuroimaging methods.

Sources of funding

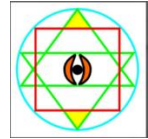
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Conflicts of interest

The authors declare that they have no conflicts of interest.

Author contributions in the main manuscript

KG designed the study, interpreted the results and compiled the manuscript and final review; **LN** participated in designing the study, designed the intervention, in the intervention and data collection.

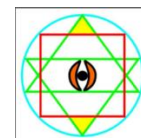


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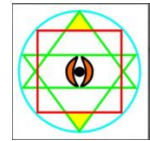
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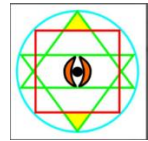
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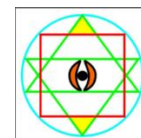
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Spiritual Tourism and Wellness Journeys through Yoga

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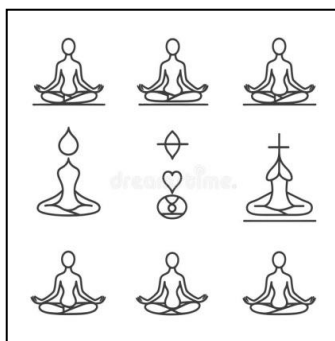
Abstract: Spiritual tourism is a growing domain in the global tourism sector, particularly in India where yoga originated. The present study explores how yoga-based wellness journeys influence tourists' spiritual and psychological well-being. Using primary data from yoga retreat participants in Rishikesh and Kerala, this research identifies key motivations, benefits, and challenges faced by spiritual tourists. The study is backed by qualitative and quantitative data collection, and literature from five key books on yoga and spiritual tourism. It highlights that yoga is not just a physical regimen but a holistic path to healing and transformation, increasingly valued in tourism.

Keywords: Spiritual Tourism, Yoga, Wellness Travel, Mindfulness, Retreat Tourism

1. Introduction

Spiritual tourism, also referred to as soul tourism or transformational travel, refers to the intentional travel experiences aimed at spiritual growth, healing, and self-realization. It often involves visits to sacred destinations, participation in rituals or retreats, and engagement in activities that foster inner awareness and holistic wellness. In the context of India—a land steeped in spiritual legacy—yoga emerges as a primary modality through which these spiritual journeys unfold.

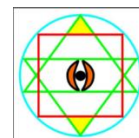
Yoga-based wellness journeys have gained prominence as an integral part of spiritual tourism, where travellers participate in immersive experiences such as yoga retreats, meditation camps, Ayurveda healing, and mindfulness workshops. These journeys are not limited to physical flexibility but are designed to cultivate harmony between body, mind, and spirit. With yoga's deep-rooted connection to Indian philosophy and its global acceptance as a healing practice, destinations like Rishikesh, Kerala, and Varanasi have become spiritual epicentres attracting global seekers.



The impact of these journeys is manifold. Participants report improved emotional well-being, reduced anxiety, enhanced focus, and a deep sense of purpose. More than just a travel trend, spiritual tourism through yoga enables transformation, encouraging introspection, lifestyle changes, and holistic healing. However, despite the popularity, there remains limited academic literature quantifying the personal impact on tourists or the specific factors that enhance or inhibit the experience. This study, therefore, adopts a mixed-method approach, gathering both qualitative insights and quantitative data from spiritual tourists. The research seeks to understand the dynamics of yoga-based wellness travel, its appeal to diverse age groups and nationalities, and the psychological and emotional transformations it brings about.



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Statement of the Problem

Despite the growing popularity of yoga-based spiritual tourism, there is a lack of data-driven analysis on its actual impact on tourist well-being and satisfaction. This study aims to fill this gap by analyzing primary data collected from spiritual tourists.

Objectives of the Study

- To study the profile and motivations of spiritual tourists.
- To assess the role of yoga in enhancing the wellness experience.
- To identify challenges faced by tourists in yoga-based journeys.
- To suggest improvements for promoting spiritual tourism in India.



2. Methodology

1. Type of Research: Descriptive and analytical.
2. Primary Data: Collected through structured questionnaires (sample size: 60 tourists in Rishikesh and Kerala).
3. Secondary Data: Drawn from books, articles, and reports.
4. Sampling Method: Purposive sampling.
5. Analysis Tools: Frequency tables, percentages, charts, and inference.

Sampling and Sample Size

The **sample size** for this study was **60 participants**, selected through **purposive sampling** from prominent yoga destinations like **Rishikesh** and **Kerala**. The rationale for purposive sampling was to target individuals who had participated in structured yoga or wellness retreats, ensuring relevance and depth in responses.

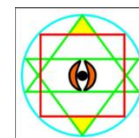
Primary Data Collection

Demographic Profile

Sl. No	Variable	Category	Percentage
1.	Age Group	25–40	40%
		41–60	50%
		Above 60	10%
2.	Country of Origin	India	30%
		International, (USA, EU, etc.)	70%
3.	Purpose of Visit	Spiritual/Personal Growth	60%
		Stress Relief/Health	30%
		Cultural Curiosity	10%



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Inference

- Majority of spiritual tourists are international visitors aged 40–60.
- The main purpose is personal growth and spiritual healing through yoga.
- Rishikesh and Kerala are leading destinations due to ashrams and retreats.

Findings

- Yoga improves emotional balance, sleep, and mental clarity for travelers.
- International tourists seek authentic Indian experiences with trained yoga gurus.
- A significant number of participants prefer longer stays (more than 10 days).
- Language barriers and lack of customized packages are common issues.

Suggestions

- Offer multi-lingual guided yoga programs.
- Develop customizable wellness itineraries.
- Collaborate with international wellness platforms for better outreach.
- Train local guides in yoga philosophy and mindfulness facilitation.

3. Conclusion

Spiritual tourism through yoga is not merely a geographical journey, but a profound inner transformation of consciousness. As modern life grows increasingly complex and stressful, more individuals are turning to wellness travel for deeper meaning, emotional healing, and spiritual connection. Yoga, with its unique blend of physical postures, breathwork, meditation, and ethical living, serves as an ideal pathway for this transformation. It allows spiritual tourists to reconnect with themselves, achieve inner peace, and return with a renewed sense of clarity and purpose.

The findings of this study clearly indicate that spiritual tourism—especially yoga-based journeys—has a positive impact on travelers' emotional and psychological well-being. Participants reported enhanced mental clarity, better emotional balance, improved sleep, and a greater sense of mindfulness. These journeys help in cultivating self-awareness, reducing stress, and fostering personal growth, making them not only a travel experience but a form of therapeutic engagement.

However, the study also highlights certain challenges or **cons**—such as language barriers, lack of personalization in retreat offerings, and limited awareness of authentic centers—which can hinder the experience. On the other hand, the pros include authentic learning from trained gurus, access to natural healing practices, and the opportunity for deep spiritual exploration in a culturally rich environment.

In conclusion, spiritual tourism via yoga is a powerful and growing facet of the global tourism industry. With proper infrastructure, multilingual guidance, and better global promotion, India can solidify its position as the leading hub for transformative spiritual journeys. These experiences do not just benefit the individual; they ripple outward, promoting cross-cultural understanding, mental health, and sustainable tourism rooted in inner peace and global harmony.

4. Questionnaire Design Overview

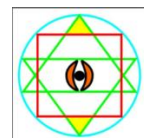
To collect robust primary data, a structured questionnaire was developed with both closed-ended and open-ended questions. These were designed to assess the demographics, motivations, experiences, satisfaction levels, and challenges faced by spiritual tourists.

Types of Questions Used

1. **Demographic Questions (Closed-ended)**
 - Age Group



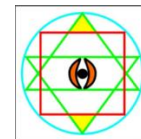
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- Gender
- Country of Origin
- Occupation
- 2. **Motivation and Purpose (Multiple choice / Likert Scale)**
 - What motivated your journey? (e.g., Healing, Self-discovery, Stress relief, Religious interest)
 - Rate the importance of yoga in your travel plans (1–5 scale)
- 3. **Experience-Based Questions (Likert scale / Rating)**
 - To what extent did yoga improve your well-being?
 - How satisfied were you with the teaching quality at the retreat?
 - Duration of stay and participation frequency
- 4. **Open-Ended Questions**
 - What aspect of the retreat impacted you most?
 - What challenges did you face during your spiritual journey?
- 5. **Suggestions and Feedback (Open/Multiple choice)**
 - What changes would you suggest for better experiences?
 - Would you recommend yoga-based spiritual tourism to others? (Yes/No + Why)

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**Veda-Heal Framework: A Value-Based Trauma-Informed Educational Reform Model
Aligned with NEP 2020 and UNESCO -SDGs**

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Abstract: The overview of current Indian educational system and its transformational changes from ancient Gurukul System to current modern educational systems are analyzed and explained briefly in this paper. Through literature study, each of the educational systems was reviewed and identified the gaps based on the analysis of current Indian educational policies and frameworks. This detailed analysis reports revealed the need for value-based, trauma-informed Educational Frameworks. This paper proposes a VEDA-HEAL Educational Framework which has proper alignment with NEP 2020 and the UNESCO's SDGs namely SDG3, SDG4, SDG5, SDG 10, SDG 11 and SDG17. This proposed VEDA-HEAL framework provides India with a path to both ancient knowledge and future preparation by addressing core cultural reconstruction, socioeconomic fairness, and sustainable development goals.

Keywords: NEP 2020, Sustainable Development Goals (SDG), Educational Framework, Value-based Educational System, Trauma-informed Educational System, VEDA-HEAL Educational Framework.

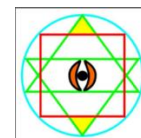
1. Introduction

India being the number one populous country in the world, with around 1.46 billion people, has the largest educational system. Though the country is currently holding 4th largest economy globally in 2025 surpassing Japan [1] it has over 1.5 million schools and around 0.1 million higher education institutions only [2]. This leads to the challenges in achieving SDG 4, providing equitable access to education, finding qualified teachers, meeting the industry and market needs, infrastructural development and resources management. The volatile employment landscape and global ecosystem, demands both value-based education and policy reforms. In ancient (1500 -500 BCE), India's "Gurukul" system emphasized the holistic approach to develop the intellectual skills along with building the moral and spiritual abilities. This system emphasized that "Aayakalai 64" i.e., 64 Arts of Life were of equal value, irrespective of the nature, i.e., whether it is considered as artistic, practical or intellectual. Also, ancient Tamil literature, said that the King or Rulers of kingdom, aim to master in all these art forms. Example, from Ramayana, it was known that the Ravana the ruler of Sri Lanka and Hanuman who acts as an advisor to king Sugriva ruler of Kishkinda knows all 64 art forms. It was evident from the history that, even if a person is proficient in at least one of the 64 art forms he/she could lead the life independently and fulfil all their requirements. It not only provides diverse career path but also ensures spiritual and ethical dimension to the learning process [5 - 6].

Over the last decade, Indian students faced lots of academic challenges, such as extreme exam stress, declined engagement, gender disparities, urban -rural divide, cyberbullying and digital stress, mental health dilution, increased rate of student suicides, educator shortages and digital exclusion. Apart from these challenges, the current issues in Indian Educational systems are a. Low Expenditure on Education –



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currently India allocates 4.1 - 4.6% of GDP to education, whereas UNESCO recommends 4 to 6% of GDP to achieve SDG 4, [8] b. Outdated Curriculum, c. lack of infra structural facilities, d. Evaluation and assessment systems, e. language burden, etc.

This research paper aims to:

- Investigate the transformational changes in Indian education system
- Identify gaps in current educational policies and frameworks
- Recommend an educational framework with the integration of value-based trauma-informed reforms in curriculum design, institutional policies, and student support systems for holistic student wellbeing aligned with NEP 2020 and UNESCO SDGs.

2. Overview of Indian Education System

The Indian Education System is divided based on the periods [7] as follows: (a) The Gurukul System during Vedic Age (6th century BC), which aims to develop both inner and outer dimensions of the pupil; (b) The Buddhist monasteries / viharas during the Buddhist period (600 BC-1200 AD) aimed to develop both physical, mental, moral values and the ability to tackle the real-life situations; (c) The Maktabas and madrasas during the Medieval Period (the Mughal era 1200 AD -1800AD) offered Islamic religious education along with the subjects like medicine, literature, philosophy, grammar, etc.; (d) The nature of our ancient Indian education system was collapsed during the colonial era giving importance to the English language and destroyed the functional knowledge into just passing test with grades, transforming the academic as a “rat” race and deteriorating the quality of Indian Education System; (e) The current education system during the Post-Independence period is an extension of the colonial era, though it established organizations like UGC, AICTE, MoE, IITs and IIMS still the quality is lagging.

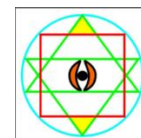
Transformational Change in Indian Education

a. Gurukul System

The Gurukul system as shown in Fig.1, was originated during the Vedic era i.e., approximately 1500 BCE to 500 BCE. This system offered Vedic recitation. The system taught 4 Vedas which is the oldest scriptures of Hinduism, Upanishads, Grammar, Dharma and the 64 Art forms. The students (Brahmacharya) stay at Guru's Ashrama (home) and learn the lesson till they get qualified to lead their life as a householder (Grihastha). The system followed experiential learning and oral recitations. The students develop their knowledge through memorization, do service to the people at ashramas and also participate in the traditional rituals. There were no fees for the education, it was offered free of cost. But the students showcased their gratitude to their Gurus by offering Gurudhakshina which was again used for the benefits of students and the people and animals in the ashramas. This traditional education system in India ensures 100% literacy and formed the root for intellectual civilization in ancient India.



Fig.1: Traditional Gurukul System in India^[9]

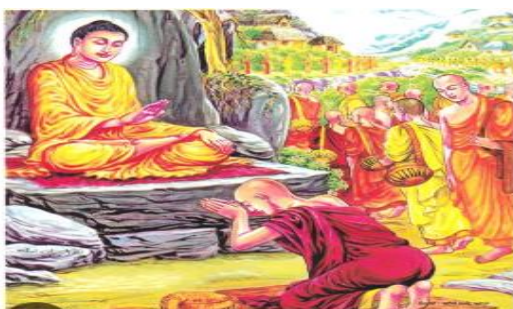


b. Buddhist Monasteries and Mahaviharas

Buddhist Monasteries as shown in Fig.2 (a) and Mahaviharas education system emphasizes moral cultivation, democratized learning i.e., unbound by caste unlike Vedic-era. It has residential academic centers called Monasteries and Viharas. The major centers are Nalanda, Vallabhi, Vikramashila, Odnatapuri etc., which is similar to modern universities and could accommodate thousands of students and scholars. The curriculum encompassed mathematics, philosophy, artistry, medicine i.e., Ayurveda, logical thinking as well as teaches foreign languages. This education system implied classroom style debates, structured lecture (late 7th Century), manuscript studies and apprenticeship. This system got destroyed in 12th century Muhammad bin Bakhtiyar Khilji destroyed major institutions like Nalanda, Vikramashila, and Odantapuri

c. The Maktabas and Madrasas during the Medieval Period

The Maktabas was the elementary schools during the Mughal era which taught Quran the holy book of Islam to the young children. They students also learnt and practiced the letters, arithmetic, letter drafting and bookkeeping through this educational system. The Madrasas (higher education institutions) as shown in Fig 2 (b) taught the Arabic, Persian languages, Islamic teachings, medicine, mathematics, astronomy, philosophy, law, history, geography, economics and also Vedantic thoughts during Akbar period in some instructions. This system produced well rounded graduates ready to serve as jurists, physicians, administrators and intellectuals from different traditions.



(a)



(b)

Fig.2: (a) Buddhist Monasteries (b) The Madrasas during the Medieval Period

d. Colonial Period – British Rule & Educational Collapse

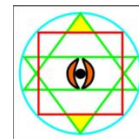
The Indian education system got collapsed during the colonial period due to Macaulay's minute in 1835. The curricula narrowed to rote-learning, administrative training and western sciences which depreciate the traditional Indian knowledge system. The regional languages like Sanskrit, Persian lost their prominences and English was promoted as the world's best language based on the advocacy of Thomas Babington Macaulay [10]. The social groupism was increased due to unequal access to the education. This situation led to cultural detachment and incoherent intellectual identity among the Indian Citizens.

e. Post-Independence Modern Education in India ^[11]

The independent India evolved the modern education system through a complex convoluted path shaped by constitutional values, social reforms, political changes and international influences. In 1948-49, Radhakrishnan Commission advocated modernizing universities and enhancing research in the field of arts and sciences. Later, during 1952-53, the framework of 10+2+3, vocational education and secondary school reforms were introduced by Mudaliar Commission. The Kothari commission (1964-66) promoted a common school system and allocated 6% GDP for education and teacher empowerment initiatives. The National Policy on Education (NPE) during 1968, its revision in 1986 and further 1992 addresses inclusive and quality education.



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Current NEP 2020 marks a significant reform in Indian educational system. It was founded on the 5 guiding pillars of Access, Equity, Quality, Affordability and Accountability. NEP 2020 provides a shift from 10+2 to 5+3+3+4 based on cognitive development. It emphasizes 21st Century skills and promotes multilingualism and local languages/ mother tongue as medium instruction during primary education. Its main focus is to modernize India's educational system and develop a holistic education for all.

3. Gaps in Current Indian Educational policies and frameworks ^[13]

The Indian educational policies and frameworks faces many challenges and gaps due to unequal access, poor infrastructure, socioeconomic disparities, inadequate teacher trainings, outdated curricula and focus on rote learning rather than critical thinking. The identified critical areas of concerns are as follows:

1. Inadequate Infrastructure & Resource Disparities ^[12]

In India, even after 75 years of Independence, there exists the Urban-Rural Divide, due to this millions of rural schools still lack essentials like proper water and sanitation facilities, electricity, laboratories, classrooms and digital connectivity.

2. Teacher Shortages & Capacity Deficits ^[14-15]

The student to teacher ratio (STR) in the country varies across different levels of education. As on 2024, the student teacher ratio for primary education is 21:1, for upper primary is 18:1 and for secondary schools is 16:1. In the higher education landscape the STR varies in the range from 10:1 to 30:1 depending on the type and nature of the institute and its managements. The higher STR provides the challenge for more personalized instructions and student teacher interaction and hence lacks in achieving the learning outcomes. Also, inadequate pre-service trainings, ineffective in-service Trainings, Administrative overload and lack of autonomy in curriculum adaptation, teaching learning innovation augments the constraints in implementing NEP 2020 and achieve SDG 4.7.

3. Funding Constraints & Inefficient Allocation ^[16]

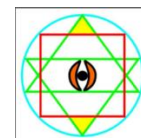
India's actual public expenditure has varied around 3.1% to 4.5%, of GDP which is far below the global average demand of around 6% of GDP for developing nations (UNESCO, 2022). The Indian education sector continues to struggle to allocate more funds for the development of education system in India due to raising population and their needs.

4. Pedagogical & Curriculum Transition Challenges ^[16]

The Rote-Based learning culture of the Indian students and teachers risks overburdening to adopt NEP's extensive list of teaching methods and Indian Knowledge Systems. Due to this around 75% of early-grade students still lack basic reading comprehension, reflecting slow transition in both the curriculum and the teaching strategies.

5. Language & Multilingual Policy Complexities ^[16]

The NEP 2020, spotlights a three-language formula which promotes Hindi, English, and a regional language. The strategy has come under criticism on the marginalisation of regional languages. Critics argue that this approach unfairly benefits Hindi and English, therefore sacrificing linguistic diversity and regional identities.



6. Digital Divide & Socio-cultural Barriers

Fig.3 shows the digital divide in India's education system which multifaceted—spanning infrastructure, income, caste, gender, and culture. Also, over 50% of rural internet users face structural deprivation. With over 216 mother tongues in the country challenges the learning content delivery in their native language because most of the contents were available only in English which hinders the vernacular learners. The study reported that only 18.4% of Indian adults can operate a computer, and 22.9% can use the internet. This becomes a great challenge especially in the higher education sector because, the digital migrants struggle to meet the needs of digital native students. This demands the proper training for the teachers to achieve the expected educational objectives and outcomes.



Fig. 3: Understanding Digital Divide in India

7. Governance, Coordination & Bureaucratic Hurdles

The NEP 2020 lacks operational clarity, in various sections, especially when defining the roles and the responsibilities of local governments, private schools, and state-level implementations.

Lack of coordination in timeframes, resource allocation, and outcome monitoring are the results from decentralized implementation road map. Due to resource constraints, budget limitations, ideological biases, policy disagreements and political resistances among the states, further increases the implementation gap. Rigid hierarchies, segregated departments, and delayed decision-making among India's educational reforms cause bureaucratic delays. Furthermore, causing teacher tiredness and implementation opposition are regular policy changes and insufficient training.

8. Equity Gaps & Socio-Economic Barriers

Despite improvements in access and enrollment over the past two decades, equity in educational quality, completion, and outcomes remains uneven across gender, caste, income, region, and digital access. The National Education Policy (NEP) 2020 acknowledges these challenges, but structural gaps still remain in implementation. India has achieved 96% of enrollment at the elementary level [17] but the learning outcomes remain poor in government schools, especially in tribal and rural regions due to resource deficits, language barriers and teachers' shortage [18]. Table 1 shows the comparative data report of equity gaps and socio-economic barriers in India. Girls from rural regions are more likely to drop out after puberty due to safety concerns, early marriage, lack of toilets, and household responsibilities.



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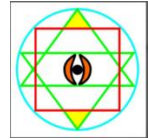


Table 1: Data Summary of Equity Gaps & Socio-Economic Barriers in India

Indicator	General	SC	ST	Girls	Rural
Secondary Completion Rate	74%	63%	51%	68%	58%
Dropout Rate (15–18 yrs)	18%	23%	29%	24%	27%
Internet Access at Home	50%	29%	18%	35%	25%

9. Impact of Modern Lifestyle and COVID-19 on Students' Mental Health ^[19-28]

The current Indian educational system was rooted on rote learning, strict evaluation, and disregard of emotional intelligence, which is not fit to handle the mental health epidemic. Today's young people's fast-paced, interwoven lifestyle has brought chronic stress into their daily lives. Fig. 4 and Fig. 5 shows the statistical connect on pre and post COVID impact of psychological trauma trends and the mental health effects of modern lifestyle of on Indian students respectively.

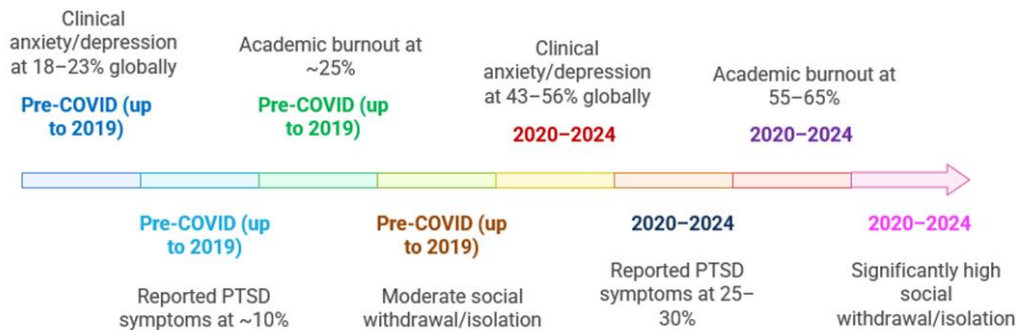


Fig. 4: Psychological Trauma Trends on COVID Impact of Indian Students'

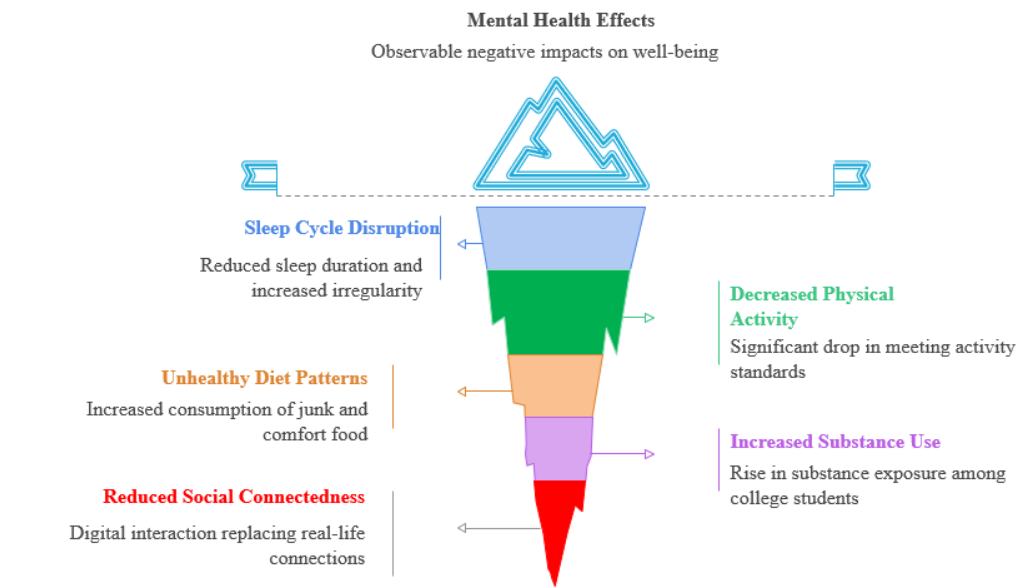
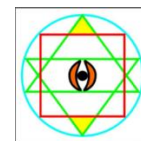


Fig. 5: Modern Lifestyle Impact on Indian Students'



The trauma of COVID-19 and the demands of the modern life have set off a silent epidemic of student mental health issues all throughout India. Around 69% of students reported to poses mobile gaming habits and in that 51% are described as addiction to this mobile games. These mobile games habits led to reduced attention span, impatience and irritating behavioral changes. The study on student's modern lifestyle reported around 63% of students sleep less than 5 hours a day, 41% or students reported over eating habits led to obesity in young age and suffered with lots of medical issues. It was identified that around 30% of students are respondents to substance usage. The findings also reflect that 44% of students reported academic burnout, 33% faced lack of concentration and 27% felt socially disconnected. Despite advancements in digital learning, the emotional cost has been overlooked. The current educational systems have failed to incorporate mental health scaffolding and the nation stands the risk of failing its young people without a direction towards trauma-informed, inclusive, and emotionally supportive learning.

Recommendations: VEDA-HEAL Framework for Holistic Education in India

The gap analysis of current Indian educational system reflects the need of transformations in the educational pattern with a culturally rooted, emotionally conscious, and globally inclusive paradigm to handle mental health crises, academic pressure, and loss of indigenous knowledge [29 – 40]. This paper proposes a VEDA-HEAL framework as shown in Fig. 6, which combines value-based trauma-informed framework that aligns with NEP 2020 and targets UNESCO's Sustainable Development Goals (SDGs) especially SDG 4 – Quality Education by 2030.

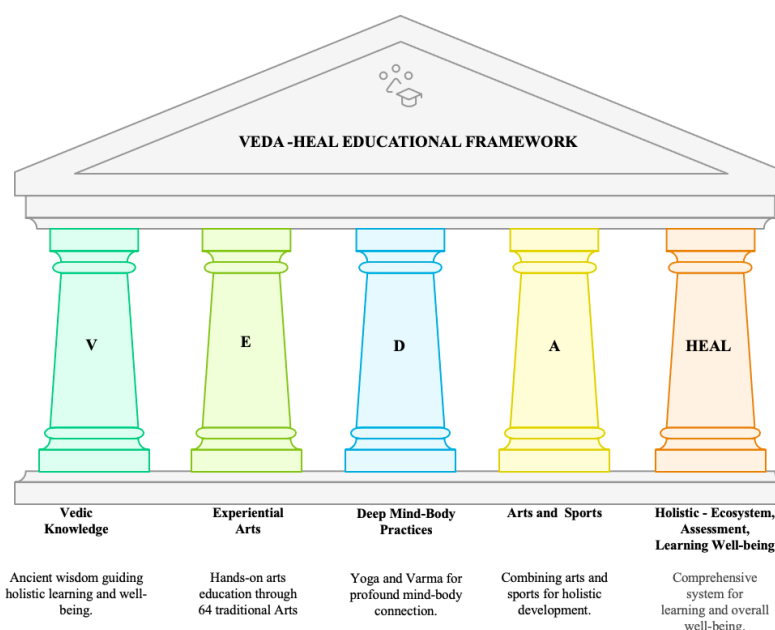
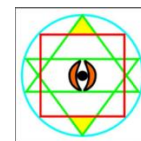


Fig. 6: VEDA-HEAL Educational Framework

The core components of the proposed framework are V- Vedic knowledge and values, E- Experiential Arts i.e., "Aayakalai 64", D – Deep Mind-Body Practices (Yoga & Varma), A – Arts & Sports Integration, HEAL – Holistic - Ecosystem, Assessment, Learning Well-being.



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V – Vedic knowledge and values:

It emphasizes Bhakti, karma, Jñāna, selected slokas from Vedas and Upanishads, moral dialogue from Puranas and Idhigasas, Indian Philosophies, etc., as Morning Vedic Modules (MVM) which build cultural confidence, ethical reasoning, emotional stability. Through proper strategic teaching learning activities such as chants / recitations, ethical/moral story telling exercises, etc., the cultural identity, meaning and resilience can be restored.

E – Experiential Arts i.e., "Aayakalai 64":

It integrates 64 art forms of life such as architecture, poetry, dramatics, metallurgy, medicine like Siddha, Ayurveda, etc., painting, musicology, dance, crafts, etc., as Rotate Art Modules (RAM). This RAM integration mainly focuses on peer connection and encourages emotional expressions, which helps to enhance creativity, self-awareness, Socio-Emotional Learning (SEL).

D – Deep Mind-Body Practices (Yoga & Varma):

It introduces advanced Yoga Nidra, Pranayama therapies, marma self-activation, building a personal sadhana routine for stress coping. Proper Integration of daily guided trauma-sensitive Yoga such as asanas, pranayama and mindfulness practices along with Varma sessions for stress relief can reduce anxiety and improves attention as well as cultivates internal safety among the learners. This supports physiological regulation thus recover trauma.

A – Arts & Sports Integration:

It promotes Student-led Kala Mandapams (art collectives), interschool Yoga, community healing projects, and village immersion techniques to build trust, teamwork and physical resilience. Through proper integration of indigenous sports and arts across curriculum helps to promote cognitive flexibility, community bonding and both physical and mental fitness of the young generation.

HEAL – Holistic - Ecosystem, Assessment, Learning Well-being: It implements advanced trauma counselling availability, training in emotional first aid, gender-responsive education and integrates with NEP's life-skills & vocational streams (vocational-arts-health fusion). It supports academic growth, inclusion and empowerment to the learners through proper monitoring of mental and socio-emotional health status of learners. It also integrates flexible teaching strategies and parents/community engagement to address trauma.

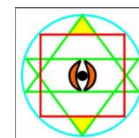
4. Integration of NEP 2020 and SDGs in VEDA-HEAL Framework

Fig.7 shows the detailed alignment of the VEDA-HEAL Framework with the NEP 2020's 5+3+3+4 educational structure, integrating trauma-informed practices, value educations (Vedas, Yoga & Varma therapy, and 64 Indian art forms), all geared toward achieving the goals of NEP 2020 and UNESCO SDG 4 (Quality Education). The NEP 2020 educational structure of (5+3+3+4) such as foundational, preparatory, middle and secondary stages and the targeted [18], [35 - 36] and [45] are addressed through the VEDA-HEAL Pillars effectively by this framework. Fig.7 also addresses the sustainable development goals (SDGs) that are targeted in each educational structures specifically through the VEDA-HEAL Pillars are as follows:

- SDG 3 (Good Health & Well-Being): Improved mental and physical health through PE integration.
- SDG 4 (Quality Education): Balanced education with moral, cultural, and physical literacy.
- SDG 5 (Gender Equality): Equal access and support ensures girls can access sports and education.
- SDG 10 (Reduced Inequalities): Targeted programs for the disadvantaged, fostering inclusion.
- SDG 11 & 17 (Sustainable Communities, Partnerships): Preserve cultural heritage and mobilize multisectoral support.



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The features of the proposed frameworks are the involvement of community role, proper changes in the assessment methods that aligns inclusivity, integration of arts and culture to obtain equity and equality, Teacher Training aspects to practice trauma care and develop SEL, emotional development of learners through traditional healing sciences and development of integrative value-based, trauma-informed and culturally rooted curriculum.

The expected outcomes of this VEDA-HEAL Framework are as follows:

- Improved academic performance, attendance, reduced dropout.
- Enhanced mental health — less anxiety, behavioral issues.
- Stronger cultural identity and socio-emotional resilience.
- Empowered, creative citizenry ready for 21st-century challenges.
- Demonstrated progress toward NEP and SDG 4 benchmarks by 2030.

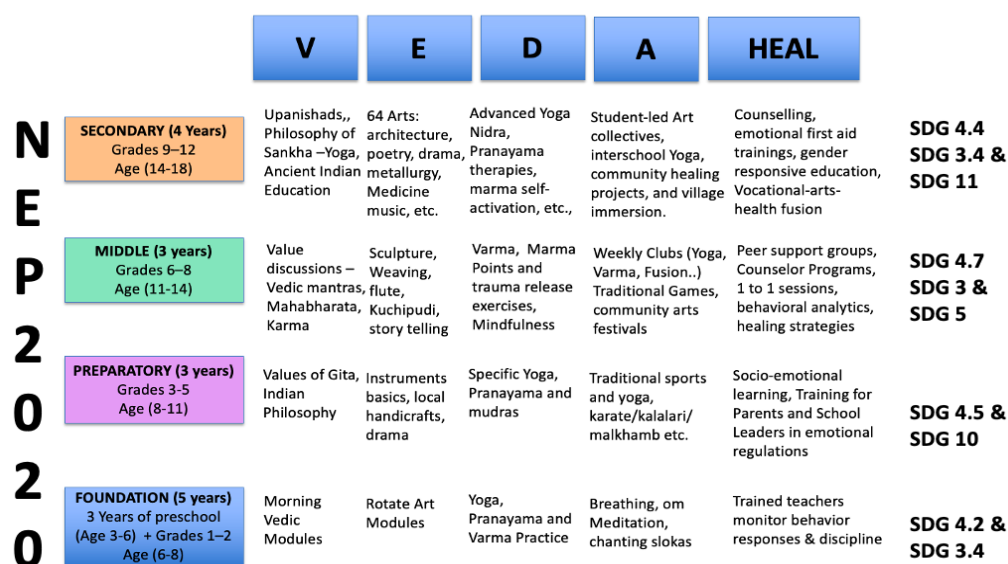


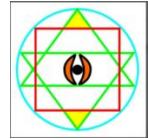
Fig. 7: Detailed VEDA-HEAL Framework Integration

5. Conclusion

In the past decade, Indian students have faced significant academic pressure, escalating mental health concerns, and systemic disparities, particularly regarding gender, caste, and rural–urban distinctions. The NEP 2020 offers a comprehensive structural and instructional reforms focused on fairness, health, and quality, serving as a means to attain UNESCO SDGs. Merging trauma-informed practices with India's cultural revival, sports-centric wellness, NEP 2020 momentum, and UNESCO SDGs creates a robust, compassionate educational paradigm. The result is not just academic excellence but emotional healing, cultural rootedness, and equitable inclusion — forming the bedrock of a truly transformational education system. The gaps in the current educational systems are analysed and the value-based, trauma-informed framework is proposed in this paper. This proposed VEDA-HEAL framework addresses deep cultural renewal, socio-economic equity, and global development goals—offering India a path to both ancient wisdom and future readiness. Combining contemporary infrastructure, inclusive policies, comprehensive ancient wisdom-based cultural-educational regeneration with strong Physical Education frameworks can change India's educational storyline. Securing these reforms inside the NEP 2020 and UNESCO SDGs will help India to leverage its great youthful population—ethical, healthy, skilled—to become an equitable, rich global leader by 2047.



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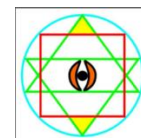


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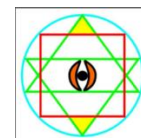
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Yoga for Holistic Living and Lifestyle Transformation: A Pathway to Wellness

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Abstract: In an era marked by high stress, sedentary lifestyles, and emotional instability, yoga emerges as a comprehensive approach to holistic living and sustainable wellness. This paper explores how the ancient discipline of yoga facilitates lifestyle transformation by integrating physical health, mental clarity, emotional resilience, and ethical consciousness. Drawing from yogic philosophy and scientific evidence, it highlights the multidimensional benefits of yoga—including improved physical fitness, stress management, emotional regulation, and value-based living. The paper also discusses the relevance of yoga in education, public health, and global development, along with practical strategies for integrating yoga into modern life. By addressing the body-mind-spirit connection, yoga offers a pathway to personal well-being, social harmony, and environmental sustainability.

Keywords: Yoga, Holistic Living, Lifestyle Transformation, Mental Health, Emotional Resilience, Yogic Philosophy, Wellness, Ashtanga Yoga, Mindfulness, Sustainable Development.

1. Introduction

The Modern Lifestyle Crisis

In the contemporary world, individuals are grappling with rising stress, unhealthy routines, emotional disconnection, and lifestyle diseases. With the rapid advancement of technology, fast-paced careers, and limited personal time, the balance between body, mind, and soul has been severely disrupted. Sedentary habits, excessive screen time, processed food consumption, and declining social connections have collectively weakened overall health. Consequently, more people are turning toward integrative practices such as yoga, which offer not only physical fitness but also inner peace and mindful living.

Holistic Living

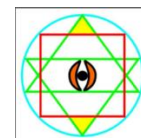
Holistic living refers to an inclusive lifestyle approach that nurtures physical vitality, emotional balance, mental clarity, social harmony, and spiritual awareness. It encourages conscious choices in areas like diet, sleep, relationships, environment, and behavior. Instead of treating illnesses in isolation, holistic wellness focuses on identifying root causes and establishing harmony among various aspects of life. The yogic lifestyle, with its emphasis on awareness, non-violence, self-discipline, and mindfulness, aligns seamlessly with this approach. It transforms everyday activities into conscious rituals that support health and harmony.

2. The Philosophical Roots Of Yoga

Yoga, as defined in classical Indian texts like the Yoga Sutras of Patanjali and the Bhagavad Gita, is both a science and a philosophy. It is derived from the Sanskrit root yuj, meaning "to unite" representing the union of individual consciousness with universal consciousness. Patanjali's Ashtanga Yoga system includes eight interconnected limbs that provide a framework for ethical behaviours, self-discipline, physical well-being, sensory control, focused attention, meditation, and spiritual liberation. These principles, when practiced consistently, lead to long-term transformation and a meaningful life.



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Physical Transformation Through Yoga

Regular yoga practice enhances flexibility, strength, posture, and stamina. Asanas such as Tadasana, Trikonasana, Bhujangasana, and Shavasana target different muscle groups, improve blood circulation, and stimulate glandular function. Unlike intense cardio workouts, yoga provides low-impact movement that reduces joint strain and promotes healing. Studies have shown that yoga helps manage lifestyle diseases such as hypertension, diabetes, obesity, and arthritis. It also supports detoxification, boosts immunity, and enhances respiratory function through deep, conscious breathing.

Enhancing Mental And Emotional Well-Being

One of yoga's most profound contributions lies in its impact on mental and emotional health. Breathing techniques like Anulom Vilom and Bhramari pranayama reduce anxiety and activate the parasympathetic nervous system. Meditation practices, including mindfulness and loving-kindness meditation, foster self-awareness and reduce overthinking. These techniques help individuals manage emotional reactivity, develop inner calm, and cultivate mental focus. Research has consistently shown that yoga reduces symptoms of depression, PTSD, and insomnia while improving emotional regulation, resilience, and self-esteem.

Ethical Values And Behavioural Discipline

The ethical foundation of yoga, outlined in the Yamas and Niyamas, serves as a compass for responsible and conscious living. Practicing Ahimsa (non-violence), Satya (truthfulness), Aparigraha (non-greed), Tapas (discipline), and Svadhyaya (self-study) fosters personal integrity and social responsibility. These values influence daily behavior, including eating habits, consumption patterns, relationships, and digital discipline. For example, practicing non-violence may encourage vegetarianism or compassion in communication, while self-study fosters lifelong learning and introspection.

Scientific Support For Yogic Practices

Modern science has validated many of yoga's traditional claims. Clinical studies using biomarkers, brain scans, and longitudinal data have confirmed yoga's positive effects on inflammation, heart rate variability, neuroplasticity, and immune function. Functional MRI studies show increased grey matter density in areas related to emotional regulation, memory, and empathy among regular yoga practitioners. Yoga interventions have also shown positive outcomes in school settings, workplaces, and rehabilitation programs, indicating its broad applicability and effectiveness.

Yoga For Youth, Adults, And The Elderly

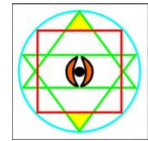
Yoga is a versatile practice that benefits people across age groups. For adolescents, it improves concentration, body image, and stress management — critical during the developmental phase. For adults, yoga offers relief from chronic stress, job fatigue, and sedentary discomfort. For elderly individuals, gentle yoga supports mobility, reduces fall risk, and enhances cognitive function. Tailored practices and modifications make yoga accessible to people with different needs and health conditions, reinforcing its inclusive and adaptive nature.

Integrating Yoga Into Everyday Life

Incorporating yoga into daily life does not require major changes but consistent commitment. Starting the day with Surya Namaskar, followed by five minutes of conscious breathing, can set a positive tone. Evening practices such as guided meditation or restorative poses can help unwind and improve sleep quality. Beyond physical postures, yogic living includes mindful eating, compassionate interactions, digital detoxing, and eco-conscious habits. Communities, educational institutions, and organizations can support this integration through regular sessions, workshops, and wellness programs.



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Overcoming Barriers To Practice

Despite growing awareness, barriers like time constraints, cultural myths, physical limitations, and lack of access prevent many from adopting yoga. To overcome this, educators and wellness advocates must promote the secular, evidence-based benefits of yoga. Virtual sessions, beginner-friendly routines, community outreach, and inclusive language can make yoga approachable to wider populations. Furthermore, aligning yoga education with public health campaigns can significantly increase its reach and impact.

Yoga And Global Sustainable Goals

Yoga Extends Beyond Personal Wellness To Support Global Well-Being. By Fostering Simplicity, Minimalism, Compassion, And Ecological Awareness, Yoga Contributes To Climate Resilience And Sustainable Consumption. Recognizing This, The United Nations Has Declared June 21 As International Day Of Yoga. Yoga Is Relevant To Several UN Sustainable Development Goals (Sdgs), Including Good Health And Well-Being (SDG 3), Quality Education (SDG 4), Gender Equality (SDG 5), And Climate Action (SDG 13). By Integrating Yogic Values Into Policy, Education, And Public Life, We Can Nurture A Healthier Planet.

3. Conclusion

Embracing Yoga As A Way Of Life

Yoga Is More Than A Health Routine — It Is A Timeless Blueprint For Balanced Living. It Harmonizes The Physical, Emotional, Mental, Ethical, And Spiritual Dimensions Of Human Existence. As The World Faces Rising Stress, Health Crises, And Moral Confusion, Yoga Offers An Accessible, Affordable, And Effective Pathway To Holistic Wellness. Adopting Yoga As A Lifestyle Practice — Not Just As Exercise — Can Lead Individuals From Fragmentation Toward Integration, From Chaos Toward Clarity, And From Stress Toward Sustainable Joy. In Embracing Yoga, We Embrace A Future Grounded In Wisdom, Well-Being, And Wholeness.

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Effectiveness of Acupuncture and Lifestyle of Asthma Patients

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Abstract: If an asthma patient gets injured, how they feel can depend on the type and severity of the injury — but there are some specific concerns that are unique to people with asthma: Breathing Becomes Even Harder: Pain or stress from injury can trigger asthma symptoms like shortness of breath, wheezing, or tightness in the chest. If the injury is to the chest or ribs, it may physically restrict breathing, making asthma symptoms worse. Pain + Panic = Risky Combo: Injuries can cause anxiety, which may lead to hyperventilation or panic attacks, both of which can make asthma symptoms worse. The fear of an asthma attack itself can increase stress, which may trigger one. Emergency Situations: If an asthma patient is seriously injured, they may need oxygen or respiratory support faster than someone without asthma. Certain medications (like some painkillers or anaesthesia) might not be ideal for asthma patients, so emergency care must be careful with treatment choices. Extra Vulnerable After Injury: Healing can take longer if breathing is compromised — asthma can make it harder to cough properly, clear lungs, or avoid infections like pneumonia after injury. Would you like to know how to help someone with asthma in an emergency? Or was there a specific injury or situation you were thinking about? A patient with seasonal asthma treated with acupuncture is now feeling comfort and reduced dependency on medicine.

1. Introduction

நோய்நாடி நோய்முதல் நாடி அதுதணிக்கும்
வாய்நாடி வாய்ப்பச் செயல்.

The explanation is Let the physician inquire into the disease, its cause, and its method of cure, and treat it faithfully according to the rule. This is one of the strategies followed by an acupuncturist.

மருந்தென வேண்டாவாம் யாக்கைக்கு அருந்தியது
அற்றது போற்றி உணின்.

The explanation is No medicine is necessary for him who eats after assuring himself that what he has eaten has been digested.

மிகினும் குறையினும் நோய்செய்யும் நூலோர்
வளிமுதலா எண்ணிய மூன்று.

The explanation is The three things that the writers have counted as the cause of disease, whether in excess or in deficiency.

வாதம், பித்தம் மற்றும் கபம் சரியான அளவில் இல்லை எனில் பிணி
உண்டாகும்.

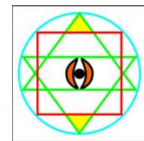
The above quotes are from the Thiru Kural, written by Thiruvalluvar, the great poet of Tamil literature, in adhikaram Marundhu; in English, it's Medicine.

These are the guiding principles of our acupuncture treatment. If a person follows the healthy lifestyle, there is very little intervention required from the therapist.

But the majority doesn't heed this basic principle of a healthy and balanced lifestyle; only a minority does this. In that case, the basic elements such as vata, pita, and kapa imbalance affect the body.



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We acupuncturists treat the patient not just by symptoms but by understanding the cause and regulating the vata, pitta, and kapha, which leads to less medication in the short term and total relief from all medications in the long term, provided they adhere to the guidelines we shared with them.

Acupuncture: Its Origin and Evolution

Acupuncture is said to have originated in China by 2600 B.C.; from there, it evolved into a major practicing therapy during the Opium Wars of the Qing dynasty.

When Mao Zedong ruled China, he advocated teaching acupuncture to the masses to reduce the reliance on allopathic treatment.

In 1962, WHO compiled a list of alternative medicines and advised nations to add them to their national medicines list. Acupuncture is one among them.

In the 1980s, the treatment came to Tamil Nadu through Dr. Anton Jayasurya, who is of Sri Lankan origin.

Later, Dr. Fasalur Rahman and Dr. Siddiq, who are allopathy doctors, understood the power of acupuncture and relinquished their allopathy practice and started treating masses with acupuncture, which led to the spreading of acupuncture all over India.

Core principles of acupuncture

- Detoxification
- 5 elements
- Yin and yang

Origin of disease

Diseases are due to not following a balanced lifestyle in accordance with nature, such as hunger, thirst, sleep, and rest. When the above-mentioned are not synchronized, there would be toxic cells in our body.

Case study

A woman in her 40s suffering from bronchial asthma for the last 10 years, post-pregnancy.

She faces difficulty in breathing during seasonal change and if there is any dust or smoke.

So, the environment and pollution are also contributing to her illness.

When the patient visited for diagnosis, I learned she is using multiple inhalers and tablets for combating the illness, which will eventually lead to side effects and only temporary relief.

She is not getting relief from the disease and also has a fear instilled every time during pollution and every year during seasonal change. She is also affected by insomnia and constipation despite so much medication. I checked the pulse and find there is an imbalance in one of the five elements, which is air.

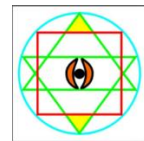
I gave a touch to activate LU 11, which made the air element activated and in turn helps to balance the wood that is Sky.

Initially, every week consultation is done for the first 2 months, and later the frequency is reduced to just one visit per month.

After one and a half years, the patient is using half of the medicine used earlier, and also due to the five elements balance, her weight has also reduced, which helps her mobility.

Apart from this sleeping disorder, constipation was also cured.

I am sure if the patient continues the treatment for another 6 months without interruption, getting carried away by the temporary relief, she can fully recover from the usage of medicines.



2. Method

In Traditional Chinese Medicine (TCM), pulse diagnosis is a key method to understand the internal condition of the body. The division of the pulses refers to the classification of pulse types based on their qualities. These pulses are felt at three positions on each wrist (cun, guan, chi), and each can reflect the state of specific organs.

Here's a basic overview of how pulses are divided:

◆ Three Wrist Positions (Pulse Locations)

Each wrist has three positions, and each has a superficial (fu) and deep (shen) level:

Position Left Hand Right Hand Cun (inch) Heart/Small intestine Lung/Large intestine Guan

(bar) Liver/Gall Bladder Spleen/Stomach Chi (cubit) Kidney (Yin)/Bladder Kidney (Yang)/Triple Burner

In acupuncture and Traditional Chinese Medicine (TCM), "Cun Guan Chi" (寸关尺) refers to the three positions on the radial artery of the wrist that are used in pulse diagnosis (脉诊, Mài Zhěn). These three pulse positions are essential for assessing the state of the internal organs and overall health.

Meaning of Cun Guan Chi:

These terms indicate three anatomical positions on the wrist (felt with the index, middle, and ring fingers):

Cun (寸) – "Inch" position

Closest to the wrist crease

Felt with the index finger

Guan (关) – "Barrier" position

Middle position

Felt with the middle finger

Chi (尺) – "Cubit" position

Farthest from the wrist crease, near the edge of the ulna

Felt with the ring finger

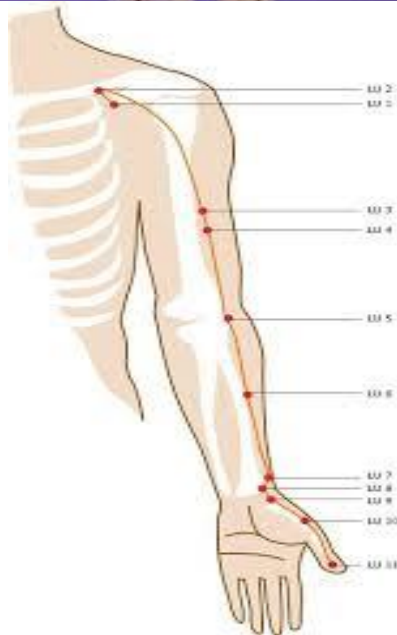
Organ Correspondence (Left and Right Wrists):

Side Cun (Inch) Guan (Barrier) Chi (Cubit) Left Heart / Small intestine Liver / Gallbladder Kidney

(Yin) Right Lung / Large intestine Spleen / Stomach Kidney (Yang) / Bladder

Why It Matters in Acupuncture

Practitioners use pulse diagnosis by placing three fingers on these positions to feel the depth, strength, and quality of the pulse. Each position and depth (superficial, middle, deep) provides insight into the state of the corresponding organ systems. This guides acupuncture point selection and treatment strategy.



3. Result

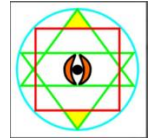
Yes, acupuncture treatment can give good results in the Lung channel, especially when dealing with respiratory, immune, and skin-related conditions. In Traditional Chinese Medicine (TCM), the Lung channel (Lung meridian) is associated with the lungs, nose, throat, skin, and immune system.

Benefits of Acupuncture on the Lung Channel

Here's how acupuncture on the Lung meridian can help:



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Condition Effect of Acupuncture Asthma & Wheezing Opens airways, regulates Qi, reduces inflammation
Chronic Cough Disperses Lung Qi stagnation, moistens dryness Allergic Rhinitis Strengthens Wei Qi
(defensive energy), clears nasal passages Shortness of Breath Tonifies Lung Qi and resolves phlegm Skin
Disorders (eczema, dryness) Improves Lung's function of governing the skin Fatigue or Weak Immunity
Boosts Lung Qi and strengthens the immune system

Clinical Applications

Used in asthma management alongside medication

Enhances recovery in post-COVID conditions

Helps prevent seasonal respiratory infections

Improves emotional issues like sadness and grief (Lung is related to grief in TCM)

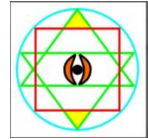
By this method, I have addressed 10 patients and all of them recovered well.

4. Conclusion

If a patient is ready to cooperate and follow the balanced lifestyle to maintain five elements and accept that due time should be given for the treatment, it will not work as a short-term relief like other treatments. Acupuncture will help them to lead a drug-free life by addressing the root causes of their conditions rather than just alleviating symptoms. By committing to this holistic approach, patients can experience lasting health improvements and rediscover a sense of well-being.

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**Therapeutic Effect of Isometric and Isotonic Suryanamaskar with Mantras:
An Analytical Study**

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Abstract: Suryanamaskar (Sun Salutation), in both isometric and isotonic forms, is gaining scientific attention as an effective lifestyle-based intervention for stress, obesity, and hypertension. This study analyzes the therapeutic benefits of both forms of Suryanamaskar, accompanied by mantra chanting, on physical and mental health, targeting obesity, blood pressure, fatigue, and sleep disturbances. Over 12 weeks, weekly 5 days, 35 participants—women (housewives and professionals), men, and children—practiced both isometric Suryanamaskar (6 times SN for 50 minutes) and Isotonic suryanamaskar (72 times SN in 50 minutes) variations.

“Each variation of Suryanamaskar followed a structured breathing protocol, adapted for dynamic (isotonic) and static (isometric) execution.” Primary outcomes assessed were weight and blood pressure; secondary outcomes included fatigue levels and sleep patterns. Results showed isometric Suryanamaskar was more effective for weight reduction, while isotonic improved fatigue and sleep. Children exhibited increased height and better morning alertness. This research demonstrates that Mantra-based Suryanamaskar, in both forms, provides holistic benefits and is a sustainable wellness practice across all age groups in modern life. Why This Works for a Busy Lifestyle, All-in-One: Physical, mental & spiritual wellness in a single session, Time-Efficient: Quick, structured & effective, Sustainable: Builds lifelong discipline & health, Customizable: Choose Isotonic for cardiac exercise or Isometric for endurance, This study highlights Suryanamaskar as a simple, adaptable, and powerful wellness tool for all ages, promoting holistic health in a fast-paced world.

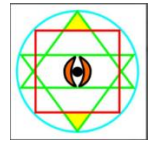
Keywords and Short Meanings:

- Suryanamaskar (SN) – A traditional yogic sequence of 12 postures, also known as Sun Salutations, practiced with breath synchronization.
- Sun Salutations – English term for Suryanamaskar; used for physical, mental, and spiritual well-being.
- Isometric Suryanamaskar – A static form of SN where each posture is held with rhythmic breathing to build endurance and stability.
- Isotonic Suryanamaskar – A dynamic version of SN involving continuous flow through postures to enhance cardiovascular and muscular activity.
- Mantra Chanting – Repetition of sacred sounds (like the 12 names of the Sun) during practice to enhance focus, healing, and inner calm.
- Yoga Therapy – Application of yoga practices for preventive and therapeutic health benefits.

1. Introduction

Suryanamaskar, or Sun Salutation, is a foundational yogic practice with deep roots in Vedic tradition. Ancient texts such as the Rigveda, Aditya Hridayam, and the Gayatri Mantra extol the Sun as a divine source of vitality, light, and health. In modern times, yoga master Sri T. Krishnamacharya played a pivotal role in reviving and systematizing this practice by integrating it with asanas (physical postures) and pranayama (breath regulation).

The practice of Suryanamaskar—performed in isometric (static) and isotonic (dynamic) forms—is gaining increasing attention in contemporary research as a potential remedy for issues related to sedentary lifestyles,



chronic stress, obesity, and cardiovascular disorders. These health challenges contribute significantly to physical and mental imbalances, and Suryanamaskar has emerged as a preventive and therapeutic tool. Integrating Suryanamaskar as a complementary intervention alongside conventional medicine holds the potential to enhance holistic care. The unique combination of movement, breath control, and mantra chanting in Suryanamaskar aligns the body, mind, and spirit, thus promoting total well-being.

1.1 Scientific Relevance

In today's fast-paced world, lifestyle-related disorders such as obesity, hypertension, sleep disturbances, and chronic fatigue are on the rise. While modern medical interventions offer symptomatic relief, they often overlook the root causes of such disorders. Suryanamaskar provides a side-effect-free, holistic approach that addresses both physiological and psychological dimensions.

1.2 Two Approaches to Suryanamaskar

This study focuses on two distinct formats of the practice:

- Isotonic Suryanamaskar – Performed 72 times SN in 50 minutes, involving dynamic and rhythmic sequences of postures.
- Isometric Suryanamaskar – Performed 6 times SN in 50 minutes, emphasizing static holds and controlled breathing at each step.

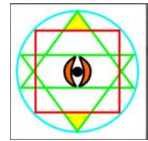
The image shown below are the steps which we practiced for 12 weeks with right breath



Each round of Surya Namaskar (Sun Salutation) consists of 12 sequential steps, combining physical movement, breath regulation, and mantra chanting. These steps include: Namaskarasana (Prayer Pose), Hastauttanasana (Raised Arms Pose), Hasta Padasana (Hand to Foot Pose), Ashwa Sanchalanasana (Equestrian Pose), Dandasana (Plank), Ashtanga Namaskara (Eight Limbs Pose), Bhujangasana (Cobra Pose), Parvatasana (Mountain Pose)—followed by a mirrored return through the same sequence. Each posture is paired with a specific breath pattern (inhale, exhale, or hold) and a Sanskrit mantra dedicated to the Sun, such as Om Mitraya Namah and Om Bhaskaraya Namah. These mantras hold symbolic meanings—such as "Friend of all," "Illuminator," and "Giver of energy"—and are believed to activate energy centers (chakras) like the Anahata (heart), Ajna (third eye), and Manipura (solar plexus). The physical benefits of these movements include stimulation of organs such as the heart, liver, pancreas, thyroid, and intestines, while the breath-mantra coordination fosters mental clarity, emotional balance, and vibrational healing. Thus, Surya Namaskar offers a multidimensional approach to well-being—uniting body, breath, mind, and spirit in a single dynamic practice.



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Both formats, when combined with mantra chanting, activate the autonomic nervous system, lower cortisol levels, enhance serotonin production, and promote emotional resilience. Together, they serve as powerful techniques to restore balance and promote integrated health.

2. Objectives

This study investigates the therapeutic effects of Isometric and Isotonic Suryanamaskar, practiced alongside mantra chanting, on diverse demographic groups:

- Adults (40–60 years) – including housewives and working professionals
- Children (12–15 years) – from rural Tamil Nadu

A total of 35 participants engaged in both variations over a span of 12 weeks, with a 3-month washout period between interventions. The study is supported by 50+ literary sources and followed a standardized protocol comprising prayer, warm-up exercises, Suryanamaskar, breathwork, Yoganidra, and meditation.

2.1 Primary Objectives

To compare the effects of isometric and isotonic Suryanamaskar on the following physiological outcomes:

- Body Weight – Measured in kilograms using a calibrated digital scale.
- Blood Pressure – Recorded as systolic/diastolic values (mmHg) using a validated automatic digital blood pressure monitor.
- Children's Growth – In place of blood pressure monitoring, height was measured in children using a wall-mounted stadiometer to observe physical growth during the intervention.

2.2 Secondary Objectives

To assess the influence of both Suryanamaskar formats on lifestyle and wellness factors, specifically:

- Fatigue levels- Daily energy patterns (added based on practice experience and feedback)
- Sleep patterns

These outcomes were evaluated based on participant self-reports and interactive assessments conducted throughout the intervention.

Isometric Suryanamaskar for cardiovascular health with chanting

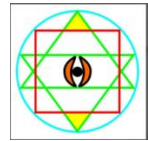
- Participants: 50 adults with mild hypertension.
- Methods: Blood pressure and heart rate variability before and after 8 weeks.
- Conclusion: Significant reduction in blood pressure and improvement in cardiovascular health.
- Researcher(s): Agarwal & Jain, 2020

Impact of isotonic Suryanamaskar with mantras on weight loss

- Participants: 45 overweight women. Methods: Weight and body fat percentage measured before and after 12 weeks.
- Conclusion: Significant reduction in weight and body fat.
- Researcher(s): Ghosh & Patel, 2021

Isotonic Suryanamaskar for reducing stress and enhancing well-being

- Participants: 50 adults with moderate stress.
- Methods: Stress and well-being assessments using PSS and WHO-5 scale before and after 12 weeks.
- Conclusion: Significant reduction in stress and enhancement of overall well-being.
- Researcher(s): Patel & Shah, 2020



3. Methodology

This study adopted a mixed-method approach, combining experimental and observational designs to investigate the effects of isometric and isotonic Suryanamaskar, practiced with mantra chanting, on health and well-being.

3.1 Participants and Protocol

A total of 35 participants, including women, men, and children (ages 12–65), were enrolled. Each participant followed a 12-week structured routine, practicing five days per week, with 90-minute daily sessions including:

- Prayer and Om chanting-5 mins
- Warm-up exercises-6 mins
- Suryanamaskar (isometric or isotonic variation)-50 mins
- Counter stretches-7 mins
- Cyclic breathing-5 mins
- Yoga Nidra-10 mins
- Prayer and om chant-10mins

A three-month washout period was maintained between the two practice phases to minimize crossover effects.

3.2 Data Collection Methods

- **Quantitative Data**

Objective measures were collected at baseline and post-intervention for:

- Body weight (kg)
- Blood pressure (mmHg)
- Children's height (cm)

These were assessed using calibrated digital devices and standard clinical procedures to ensure data reliability.

- **Qualitative Data**

To understand participants' experiences, self-reflections and weekly verbal feedback were gathered. Additionally, a Google Form-based wellness questionnaire was administered once every 15 days to assess:

- Daily fatigue and energy levels
- End-of-day tiredness
- Sleep/wake times
- Sleep duration and quality
- Morning freshness and alertness

This subjective data provided deeper insight into how Suryanamaskar influenced the participants' overall wellness and daily functioning.

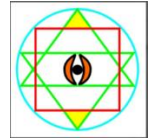
3.3 Participant Profile

A total of 35 participants, aged 12 to 65 years, were included:

- 60% women, 22% men, and 18% children
- Participants were selected based on health-conscious interest and willingness to commit to the full protocol
- All had basic yoga experience prior to the intervention
- A 3-month washout period was maintained between phases to minimize carryover effects



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3.4 Assessment Timeline

Health parameters were assessed at two critical time points:

- Baseline (Week 0)
- Post-Intervention (Week 12)

Both quantitative metrics (weight, blood pressure) and qualitative feedback (fatigue, sleep, mental clarity) were collected via:

- Clinical measurements
- Google Forms
- Weekly interaction with participants

3.5 Statistical Data Analysis

The quantitative data collected during the study were analyzed using standard descriptive and graphical statistical techniques to assess central tendency, variability, and trends across different participant groups and time points.

- **Mean (Average)**

The mean was calculated for key parameters—body weight, blood pressure, and height (in children)—at three intervals: baseline (pre-intervention), midpoint, and post-intervention (week 12). It provided a representative value to compare changes over time between the isometric and isotonic Suryanamaskar practices.

- **Standard Deviation (SD)**

Standard deviation was computed to measure variability within each group. A higher SD indicated greater dispersion around the mean, while a lower SD suggested data consistency.

- **Tools Used**

- Microsoft Excel was used for data entry, organization, and calculations of means and standard deviations.
- Pie charts, bar graphs, and line charts were created to illustrate trends in weight and blood pressure, growth in children, and pre-post intervention comparisons, enhancing visual clarity and interpretation.

4. Results

4.1 Women and Men

Among women, diastolic blood pressure reduced by 9% with isotonic and 1% with isometric Suryanamaskar, while systolic BP decreased by 2% (isotonic) and 1% (isometric). Weight reduced by 3% in the isometric group and 2% in the isotonic group. Participants reported complete resolution of fatigue in both formats, with notable improvement in sleep quality particularly in the isotonic group.

In men, systolic BP decreased by 6% (isometric) and 5% (isotonic), and diastolic BP dropped by 2% in both variations. Weight reduced by 1% (isometric) and 3% (isotonic). All male participants reported 100% improvement in fatigue levels and sleep quality, regardless of the format practiced.

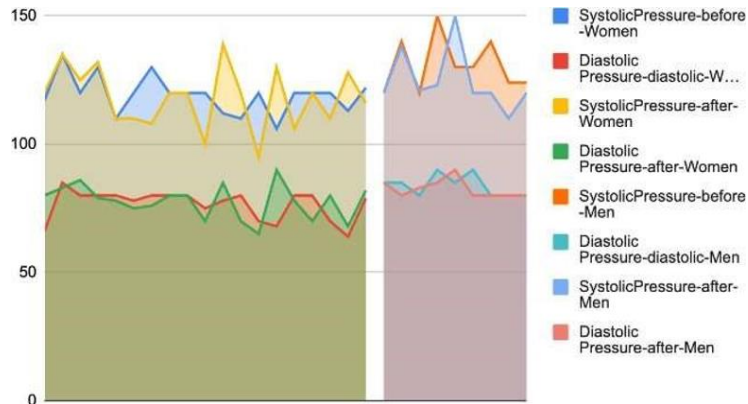


Figure 2: Comparative reduction in systolic and diastolic blood pressure among women Pre and post Isotonic Suryanamaskar.

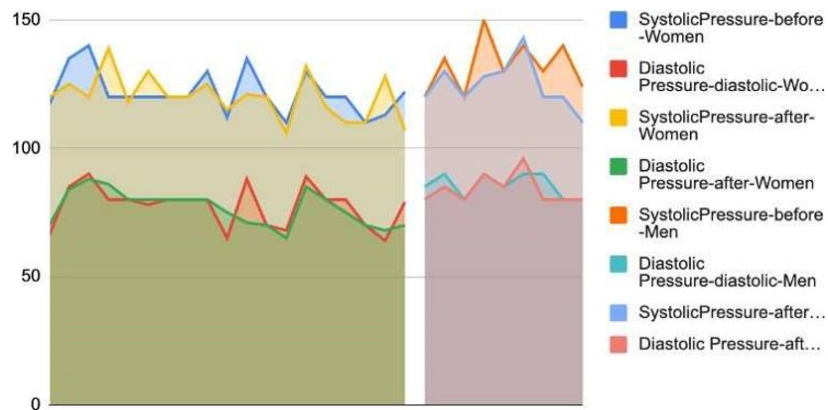


Figure 3: Comparative reduction in systolic and diastolic blood pressure among women Pre & post isometric Suryanamaskar.

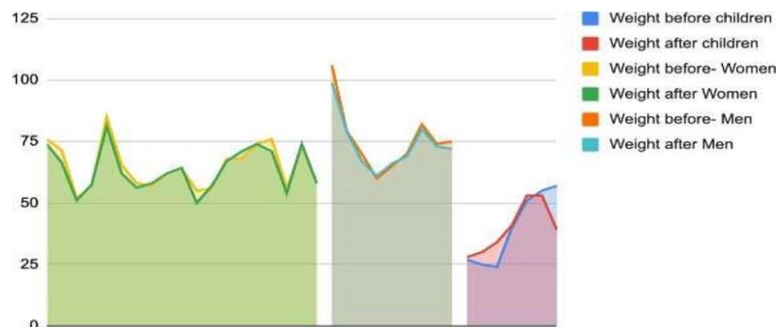


Figure 4: Percentage change in body weight across all age groups Pre and post 12 weeks of Isotonic Suryanamaskar.

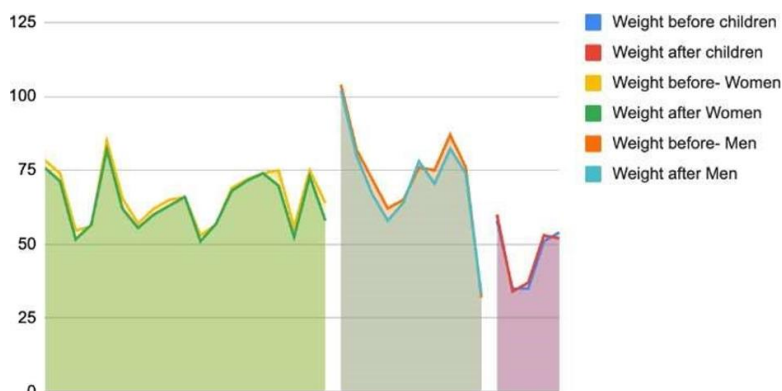


Figure 5: Percentage change in body weight across all age groups Pre and post 12 weeks of Isometric Suryanamaskar

4.3 Children

Children practicing Suryanamaskar showed a 2% height increase with isometric and a 3% increase with isotonic variation. A slight 1% weight gain was observed in the isometric group, while the isotonic group showed no significant weight change. Although total sleep duration remained unchanged, children reported greater freshness and alertness upon waking, indicating improved sleep quality and daytime vitality.



Figure 6: Increase in height observed in children Pre and post 12 weeks practicing Isotonic Suryanamaskar

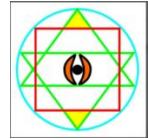


Figure 7: Increase in height observed in children Pre and post 12 weeks practicing Isotmetric Suryanamaskar

Cultural and Yogic Reference



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The episode of Aditya Hridaya Stotra from the Yuddha Kāṇḍa of the Valmiki Ramayana, in which Sage Agastya advises Lord Rama to invoke the Sun God (Surya) before his battle with Ravana, served as a significant source of inner strength and inspiration during this research journey. This sacred hymn also helped guide participants in adopting Suryanamaskar with mantra chanting. While modern practice often uses shorter mantras, the spiritual intention (bhāva) remains equally meaningful and effective in aligning body, breath, and mind.

Acknowledgments

The researcher expresses deep gratitude to all the participants who committed to the 12-week practice, and to Samskrutam University, Florida for their guidance. Special thanks to the teachings of classical texts like the Aditya Hridayam, which inspired the structure and intent of this study.

This study was conducted in accordance with ethical standards. Informed consent was obtained from all participants, and their identity and data have been kept confidential.

5. Discussion

This study confirms that both isometric and isotonic Suryanamaskar, when practiced with mantra chanting, offer significant therapeutic benefits across age groups. Women experienced improvements in weight, blood pressure, fatigue, and sleep quality; men showed enhanced sleep and energy levels; and children demonstrated increased alertness and vitality, even without changes in total sleep time.

Research Gap

While Suryanamaskar is a widely adopted yogic practice, few studies have evaluated its comparative impact—especially in women over 40, who are often underrepresented in yoga therapy research. This study uniquely compares the static (isometric) and dynamic (isotonic) formats, revealing their differential benefits and filling an important research gap.

Contribution to Yoga Therapy

Unlike most studies focusing on general asanas, this research integrates mantra chanting with structured Suryanamaskar variations. It demonstrates that isometric SN improves muscular stability and weight, while isotonic SN is more effective for fatigue relief and sleep enhancement, making it a customizable and time-efficient therapeutic model.

Support for Aging and Youth

Findings support the inclusion of Suryanamaskar in preventive health programs for middle-aged adults, targeting hormonal balance, joint health, and emotional resilience. For children, the practice improved energy, focus, and morning alertness, suggesting a strong case for its integration into school wellness routines.

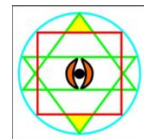
6. Conclusion

Suryanamaskar, in both its forms, proves to be a holistic wellness tool, blending physical, mental, and spiritual dimensions. This structured, sustainable, and adaptable practice holds promise for both preventive and therapeutic yoga care. Future studies should explore its long-term impact on emotional well-being, physiological biomarkers, and behavioral health in wider populations.

The results of this study demonstrate that both isometric and isotonic Suryanamaskar, when integrated with mantra chanting, offer measurable therapeutic benefits across age groups. Women showed significant improvement in weight, blood pressure, fatigue, and sleep quality; men experienced enhanced sleep and energy levels; and children showed improved alertness and vitality.



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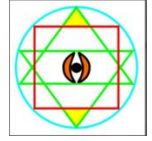


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The Divine Radiance of Grace: The Supreme Spiritual Medicine: The Medicine of Immortality a Philosophical and Spiritual Analysis Based on Vallalar's Teachings

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Abstract: Arutperunjothi! Arutperunjothi! The Embodiment of Infinite Compassion!

This paper explores the philosophical and spiritual depth of Arutperunjothi (Supreme Grace-Light) as elaborated in the teachings of Vallalar (Ramalinga Adigalar). It delves into the distinction between physical ailments and soul-based diseases, highlighting the supreme role of Arul Shiva Marundhu (Grace-Light Medicine) in transcending all afflictions. Drawing from original Tamil verses and integrating with metaphysical interpretation, this study demonstrates how Vallalar's path of Jeevakarunya (compassion toward all life) leads to Mukthi (liberation) and Siddhi (realized state). the supreme spiritual medicine (*Arut Shiva Marunthu*) that heals both physical and soul-afflictions. Through the teachings of *Vallalār* (Saint Ramalinga Swamigal), we examine how divine grace operates as an inner light, guiding the soul from bondage to liberation (*mukthi* and *siddhi*). The study highlights the interplay of *Jeeva Karunya* (compassion for all beings) and *Satchidananda* (truth-consciousness-bliss) as the path to realizing the Divine.

Keywords: Vallalar, Arutperunjothi, Jeevakarunya, Shiva Marundhu, Tamil Spirituality, Soul Disease, Siddhi, Mukti

1. Introduction

In the modern world, disease is primarily associated with physical illness. When someone is ill, they typically seek medical interventions through systems like Allopathy, Homeopathy, or Siddha. These systems address physical ailments. However, Vallalar introduces the concept of "Uyir Pini" – soul-related afflictions, which are deeper and subtler than physical diseases. This paper seeks to explore these layers of suffering and Vallalar's solution through Arut Shiva Marundhu – the Supreme Grace-Medicine. Saint Ramalinga Swamigal (Vallalār) teaches that while doctors can heal the body, only *Divine Grace* (*Arutperunjothi*) can cure the soul's afflictions. He proclaims:

உடற்பிணி அனைத்தையும் உயிர்ப்பிணி அனைத்தையும் அடர்ப்பறத் தவிர்த்த
அருட்சிவ மருந்தே

"The Grace-Medicine of Shivam eradicates all bodily and soul-afflictions."

This *Arut Shivam Marunthu* is not a bitter pill but a sweet nectar of wisdom (*Jnana Amurtham*), an inner light that awakens the soul to its divine nature. Unlike worldly medicines, which offer temporary relief, this divine remedy grants eternal liberation.

1.1 Vallalar's Vision: Every Soul Must Attain the State of Siddhi (Miraculous Power)

Original Verse (Tamil):

உலகுயிர்த் திரளெலாம் ஒளிநெறி பெற்றிட இலகும் ஐந்தொழிலையும்
யான்செயத் தந்தனை



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இப்பிறப்பை எடுத்த ஒவ்வொரு ஆன்மாக்களும் சித்தி நிலை பெற வேண்டும் என்பதற்காக நம் வள்ளல் பெருமான் இறைவனிடம் வேண்டி எல்லாத் தொழிலும் செய்கின்ற தகுதியை நான் புரிதல் வேண்டும் என்கிறார்.

In order for every soul that has taken birth to attain the state of Siddhi (miraculous power), our Vallalar earnestly prayed to the Arutperunjothi and received the capability to perform all five divine functions.

Vallalar's Prayer for the Five Divine Functions (ஐந்தொழில்)

"அடிகேள்நான் வேண்டுதல்கேட் டருள்புரிதல் வேண்டும்
அண்டமெலாம் பிண்டமெலாம் கண்டுகொளல் வேண்டும்
துடிசேர்எவ் வுலகமும்எத் தேவரும்எவ் வுயிரும்
சுத்தசிவ சன்மார்க்கம் பெற்றிடுதல் வேண்டும்
படிவானும் படைத்தல்முதல் ஐந்தொழிலும்
ஞானம் படைத்தல்முதல் ஐந்தொழிலும்
நான்புரிதல் வேண்டும்
ஒடியாத திருவடிவில் எந்தாயும் நானும் ஒன்றாகி
எஞ்ஞான்றும் ஒங்குதல்வேண் டுவனே."

O Lord, hear my prayer—may You grant Your divine grace upon my request. Let me perceive the entirety of the cosmic universe (Andam). Let all embodied beings, worlds, and divine entities attain the Pure Suddha Sanmarga path. Let me gain the wisdom and power to perform the five divine functions—creation, preservation, destruction, veiling, and grace. Let me perform these not merely as acts, but from the depth of divine grace wisdom. May I become one with You in an indestructible divine grace form, and forever shine in that eternal oneness. Vallalar humbly prays that he may not only understand these divine grace roles but perform them through the wisdom granted by grace (ஞானம்). He yearns for oneness with the Divine grace in an eternal, unchanging form (ஒடியாத திருவடிவு), not just for himself, but to uplift all beings (அண்டமெலாம், பிண்டமெலாம், எவ்வுயிரும்) through the path of Suddha Sanmarga—the pure path of truth, compassion, and divine grace light.

1.2 Arutperunjothi as the All-Encompassing Medicine

“அருட்பெருஞ்ஜோதி மருந்து என்னை
ஐந்தொழில் செய்தற்களித்த மருந்து
பொருட் பெரும் போக மருந்து – என்னைப்
புறத்தும் அகத்தும் புணர்ந்த மருந்து”

Arutperunjothi is the medicine (திருவருள் சக்தி) that granted me the power of the five divine functions. It is the supreme medicine (திருவருள் சக்தி) that bestows both spiritual and material abundance. It is the medicine that united with me, both outwardly and inwardly.

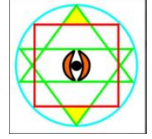
Every Particle Can Perform Divine Functions through Grace

“அருள் பெறில் துரும்பும் ஓர் ஐந்தொழில் புரியும்
தெருளிது எனவே செப்பிய சிவமே”

If graced by Divine Light, even a dust particle can perform the five divine functions—this is the deep truth proclaimed by Pure Shivam (சுத்தசிவம்) Vallalar emphasizes that *Arutperunjothi*, the Divine Grace-Light, is not merely a philosophical concept but a living, transformative medicine (திருவருள் சக்தி) that empowers the soul to perform the five divine functions—creation, preservation, destruction, veiling, and grace. This sacred divine grace is described as the ultimate remedy that offers both spiritual



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liberation and material well-being. It unites with the seeker completely, both internally and externally, signifying total transformation. Further, Vallalar echoes a profound truth declared by PureShivam (சுத்தசிவம்) - that when touched by divine grace, even the smallest and seemingly insignificant being, like a dust particle, can perform the cosmic functions. This highlights the limitless potential of all life when illuminated by *Arul*, reinforcing Vallalar's central message: Divine grace is the supreme force that elevates, heals, and transforms every aspect of existence.

2. Methodology (Supreme Spiritual Medicine)

2.1.The Nature of Disease According to Vallalar

“உடற்பிணி அனைத்தையும் உயிர்பிணி அனைத்தையும்

அடர்பறத் தவிர்த்த அருட்சிவ மருந்தே”

Translation: He who dispels both bodily and soul-based afflictions, the Supreme Arut Shiva Marundhu.

(திருவருள் சக்தி) **Explanation:** Vallalar clearly distinguishes physical ailments from soul diseases. While physical illness is observable and treatable, the afflictions of the soul are subtle, arising from ego (Anava), karma (Kanma), and illusion (Maya). True healing is achieved not by material medicines but by awakening to the inner Light of Compassion – Arutperunjothi

2.2.Arut Siva Marundhu as the Supreme Spiritual Remedy

“சித்திக்கு மூலமாம் சிவமருந்து எனஉளம்

தித்திக்கும் ஞானத் திருவருள் மருந்தே”

Translation: The sweet medicine of Jnana(wisdom) that leads to Siddhi (miraculous power) is the Shiva Marundhu.

Explanation: Unlike conventional medicine, this Grace-Light (Arulamutham) is sweet, symbolizing its non-invasive, blissful nature. It works not on the gross body but on the causal and subtle layers, dissolving karmic residues and the primal ignorance that binds the soul. here, he reveals the Divine Grace (*Arutperunjothi*) as the fundamental medicine (திருவருள் சக்தி) for spiritual attainment. Unlike bitter worldly remedies, this Grace-Light Medicine is sweet like nectar - it is the luminous wisdom (*Jnana*) that intoxicates the soul with divine bliss. The Divine Grace-Light manifests in three forms: as illuminating Light (*Arul Oli*), as sustaining Nectar (*Arul Amudhu*), and as the transformative Power that eradicates both physical and soul-afflictions.

2.3.Anava Mala and the Five Impurities

Vallalar identifies the root cause of soul disease as Anava Mala – the egoistic impurity. This is compounded by Kanma (actions) and Maya (illusion). These three together prevent the soul from realizing its true divine nature. Through the Grace-Light, these are gradually dissolved.

Verse: “வடுவறும் அசுத்த வாதனை அனைத்தையும் அடர்புற அடக்கும் அருட்பெருஞ்ஜோதி”

2.4. The Primordial Bond of Grace

Vallalar describes the soul's eternal connection to this Divine Medicine:

“உள்ளத்தினுள்ளா மருந்து – என்றன்

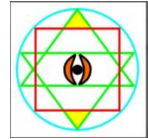
உயிர்க் கனாதி உறவா மருந்து

தெள்ளத் தெளிக்கும் மருந்து என்னைச்

சிவமயமாக்கிக் கொண்ட சிவாய மருந்து”



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Before physical birth, the soul exists in *Pāsāntakāram* (primal darkness), bound only by *Āṇava Malam* (the impurity of ego). Even in this state, Grace functions through three divine powers: as *Kriyā Sakthi* (Creative Power) that shapes existence, *Ichā Sakthi* (Will-Power) that directs evolution, and *Jnana Sakthi* (Wisdom-Power) that illuminates. God does not create souls but guides them through various births, bestowing appropriate bodies according to their past karma (*Thanu*), faculties (*Karana*), and worlds (*Bhuvanam*) and pleasure (*Bhogam*).

2.5. The Three States of Soul's Journey

Vallalar's theology identifies three key stages:

1. *Kevala Avasthai* - bound only by *Āṇava Malam* (primordial ignorance)
2. *Sakala Avasthai* - bound by the triad of *Āṇava*, *Karma* and *Māyā Malas*
3. *Suddha Avasthai* - liberated through Grace

The Divine Grace acts as the inner light that gradually elevates the soul through these stages, culminating in liberation.

2.6. Grace as the Divine Form

Vallalar's mystical verses reveal:

"அருளே நம்அடி அருளே நம்முடி
அருளே நம்நடு ஆம் என்ற சிவமே"
"அருளே நம்மியல் அருளே நம் உரு
அருளே நம்வடிவாம் என்ற சிவமே"

Here, Grace is described as the soul's foundation, crown and core - its very nature and form. Vallalar employs beautiful metaphors: Love (*Anbu*) is the cage that traps the mountain (God), the palace where the Divine King resides, and the light that makes the soul radiant. This reveals Grace as the all-pervading divine presence.

2.7. Compassion as the Path to Grace

Vallalar's practical teaching emerges in his declaration:

"அன்பெனும் பிடியுள் அகப்படும் மலையே
அன்பெனும் குடில் புகும் அரசே"

When compassion (*Jeeva Karunya*) flourishes, divine love (*Anbu*) and wisdom (*Arivu*) manifest spontaneously. His famous maxim - "ஜீவகாருண்ய ஒழுக்கமே கடவுள்

வழிபாடு" ("Compassionate living is true worship") - encapsulates the practical path to realizing this Divine Grace-Medicine in daily life. Through selfless love and service, the soul awakens to its divine nature.

3. Result

Arutperunjothi as the Eternal Grace-Medicine Operating Through All States of Existence

Vallalar expounds that Arul (grace) is the compassionate will of the Divine, and Jeevakarunyam is the living expression of that grace through the compassion of beings. The Divine, as Arutperunjothi (Supreme Grace-Light), is Suyanjothi—self-effulgent—and His grace operates as an all-encompassing medicine (அருள்சக்தி) across all existential states of the soul. He reveals that this arulaic medicine not only revives the spiritually dead but enables eternal youth and purity, as seen in the verse:



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“இறந்தவர் எல்லாம் எழுந்திடப் புரியும்
சிறந்தவல்லபம் உறு திருவருள் மருந்தே”
(Thiru Arutpa – Nalla Marundhu Patigam, Verse 1)

This divine medicine prevents death-related diseases and demonstrates immense subtle power:

“மரணப் பெரும் பிணி வாரா வகை மிகு
கரணப் பெருந்திறல் காட்டிய மருந்தே”

It is described as a remedy that protects from aging and degeneration:

“நரைதிரை மூப்பனவை நண்ணர் வகைத்தரும்
உரைதரு பெருஞ்சீர் உடைய நன் மருந்தே”

And it bestows lasting youth and clarity:

“என்றே என்னினும் இளமையோடு இருக்க
நன்றே தரும்ஒரு ஞானமா மருந்தே”

The Divine grace medicine not only removes anava impurities but brings auspicious spiritual strength:

“மலப்பிணி தவிர்த்தருள் வலம் தருகின்றதோர்
நலத்தகை அதுவென நாட்டிய மருந்தே”

Vallalar begins the Nalla Marundhu Patigam with the invocation:

“நல்கிய சிற்பாநாதமருந்து”

He describes the medicine as inner wisdom, not worldly education, saying:

“என்னறி வுட்கொள் மருந்து - என்றும்
என்னறி வாகி இலங்கு மருந்து
என்னறி விற்ப மருந்து - என்னுள்
என்னறி வுக்கறி வென்னு மருந்து”

It is further praised as:

“மதியில் விளைந்த மருந்து - யார்க்கும்
மதிக்கப்ப டாதபொன் வண்ண மருந்து
கதிதரும் இன்ப மருந்து - அருட்
கண்ணால்என் றன்னைக் கலந்த மருந்து.”

Ultimately, it is the act of grace by arulsakthi in the Supreme Space (Ambalam), merging with the soul:

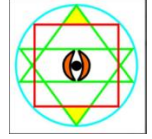
“ஆதி அனாதி மருந்து - திரு
அம்பலத் தேநட மாடு மருந்து
ஜோதி மயமா மருந்து -என்னைச்
சோதியா தாண்ட துரிய மருந்து”

In a deeply metaphysical verse, Vallalar describes how the arulsakthi itself became all cosmic expressions:

“ஒன்றில்ஒன் றான மருந்து - அந்த
ஒன்றில் இரண்டாகி ஓங்கு மருந்து
அன்றிமூன் றான மருந்து - நான்



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காகிஜந் தாகி அமர்ந்த மருந்து”

(Verse 5301, Thiru Arutpa)

This shows that the Arul Marundhu became One (Truth), Two (Shiva-Shakthi), Three (Brahma-Vishnu-Rudra), and Five (including Maheshwara and Sadashiva) to perform cosmic functions. However, Vallalar also reminds us that this supreme medicine is simple and accessible to the pure-hearted:

“அன்பர்க்கு எளிய மருந்து ஆனால்

மற்றைக் ஐவர்க்கும் காண்பதுக்கு அறிய மருந்தாக இருக்கிறது”

He concludes this divine revelation by naming it as the true Sanmarga medicine:

“சுத்த சன்மார்க்க மருந்து

அருட்ஜோதி மலையில் துலங்கு மருந்து”

Thus, Arutperunjothi Marundhu is not a symbolic cure but an ever-living, divine force working within and around us, guiding every soul toward light, wisdom, and liberation. Vallalar highlights that **Arul (grace)** is divine compassion, while Jeevakarunyam reflects this grace through the compassion of beings. God expresses Himself through nature, and souls reflect the divine as luminous extensions of this nature. *Arutperunjothi*, being *Suyanjothi* (self-effulgent light), operates not just as philosophical truth but as Arul Marundhu (grace medicine) across all existential states. Vallalar emphasizes its healing powers in all conditions—physical, mental, and spiritual. This immortal medicine exists beyond the elemental self, merges with the seeker internally and externally, guards life, and acts as wisdom itself. It is not ordinary learning but *Saakaa Kalvi*—deathless knowledge. Vallalar illustrates that it evolves from mind-born light into the golden bliss-medicine, ultimately becoming the Karpooa Jyoti Marundhu that dissolves ego and brings liberation. This *Arul Marundhu* is described as eternal, luminous, and dancing in the cosmic theatre, transforming the soul toward the *Turiyatheetha* state. The Arutperunjothi, in His grace, becomes One, then Two, Three, and Five, assuming the roles of cosmic transformation. However, such a profound medicine is accessible only through pure love and compassion, and not by egoistic pursuit. Therefore, the *Suddha Sanmarga Marundhu*, glowing atop the hill of divine light (*Arutjyoti Malai*), becomes the soul’s ultimate refuge and radiant cure.

4. Conclusion

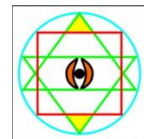
Vallalar’s teachings offer a transformative spiritual philosophy where medicine transcends the physical realm. Arutperunjothi as Shiva Marundhu operates at the deepest layers of being – purifying the soul, granting wisdom, and leading to the supreme goal of Suddha Siva Sanmarga Mukthi. True healing is the union with Arutperunjothi, made possible through Jeevakarunya, introspection (Satvisaram), and surrender. The soul, freed from its impurities, realizes its oneness with the Divine, which Vallalar describes as the eternal bliss of the Supreme Light.

5. References

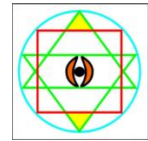
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Efficacy of Yogic Practices with and without Yoga Nidra on Selected Risk Factors for Smartphone Addiction-Related Ocular Symptoms in College Students

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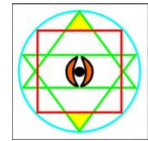
Abstract: College students who are addicted to smartphones are more likely to experience psychological anguish and digital eye strain, yet there are currently few evidence-based solutions available. Our objective was to determine if yoga nidra in conjunction with yoga poses offers more advantages than yoga alone in terms of enhancing ocular health in college students who are hooked to smartphones. Methods: From June to October of 2024, we did a single blind, randomised controlled experiment. Over the course of 16 weeks, college students between the ages of 18 and 25 who were addicted to smartphones (scores of ≥ 31 for men and ≥ 33 for women on the smartphone addiction scale-short version) were randomised (1:1) to receive either yoga practices plus yoga nidra (YP+YN; 90 minutes per session) or yoga practices alone (YP; 60 minutes per session). Anxiety was one of the main outcomes and the latha stress scale, the Pittsburgh sleep quality Index and the Rosenberg self esteem scale were used to quantify stress levels and perceived stress levels. To determine group allocation, outcome assessors were disguised. Results: Out of the 156 pupils who had their eligibility evaluated, 120 were assigned at random to either YP (n=60) or YP+YN (n=60). Out of 120 participants, 106 demonstrated an overall retention rate of 88.3%. All psychological assessments indicated substantial improvements for both groups: however, the YP+YN group had better results (mean difference -8.45[95%CI-9.78 to -7.12] versus -5.23 [-6.41 to -4.05]; between group difference $p<0.001$). Similar trends were noted for the stress ($p=0.002$) and anxiety ($p<0.001$) subscales. Perceived stress ($p<0.001$) and self-esteem ($p=0.021$) were among the major psychological outcomes that preferred the YP+YN group. There were no severe negative incidents. Conclusions: Compared to yogic practices alone, yoga nidra offers college students who are hooked to smartphones more psychological advantages. When yoga nidra is included, the benefits of anxiety, stress and general psychological health are greatly amplified. According to these results, comprehensive yoga therapies may be included into mental health programs that aim to address psychological discomfort associated with technology.

Keywords: Yoga; Mental Health; Stress; Anxiety; Smartphone addiction; Students; Yoga nidra.

1. Background

The exponential rise in smartphone use had led to previously unheard of mental health issues, especially for college students who are among the groups most at risk of acquiring psychological problems linked to technology [1]. According to recent meta-analyses, between 23% and 87% of college students worldwide suffer from smartphone addiction, which is significantly correlated with anxiety, depression and long term stress [2, 3]. There is a complicated relationship between excessive technology usage and declining psychological well-being since members of this cohort use digital gadgets for an average of 7-11 hours per day [4].

There seems to be reciprocal and self-reinforcing link between psychological suffering and smartphone addiction. Overuse of smartphones has been linked to negative sleep patterns, social isolation, poor academic performance and decreased physical activity all of which are known risk factors for anxiety and depression [5]. Smartphones can be used as maladaptive coping strategies by those who already have psychological vulnerabilities which can worsen their addiction and psychological health [6]. This cyclical



pattern produces a complicated clinical picture that calls for an encompassing therapy strategies that address underlying psychological suffering as well as addictive behaviours.

Instead than treating the underlying stress response and emotional regulation deficiencies, traditional approaches for smartphone addiction and related psychiatric symptoms such as cognitive-behavioural therapy and pharmaceutical treatments, frequently concentrate on symptom management [7]. Furthermore, college populations continue to have limited access to affordability of such therapies. Therefore, evidence-based comprehensive strategies that may be broadly used in educational contexts are desperately needed [8].

Yogic techniques proven benefits for stress reduction, emotional regulation and general mental health make them a viable remedy for technology-related psychological issues [9-11]. The effectiveness of yoga therapies for lowering stress, anxiety and depression while enhancing psychological resilience and coping skills has been demonstrated by systematic reviews [11, 12]. Increased gamma-aminobutyric acid (GABA) synthesis, improved parasympathetic nervous system activation and hypothalamic-pituitary-adrenal axis regulation are some of the neurobiological processes that underlie these advantages [13].

A specialised relaxation method known as “yogic sleep,” or yoga nidra, crates a distinct state of consciousness that is marked by profound physical relaxation and elevated mental awareness [14]. Yoga nidra practice has been linked to considerable activation of the parasympathetic nervous system, decreased cortisol levels, increased melatonin synthesis and increased alpha and theta wave activity, according to neurophysiological research [15]. Yoga nidra may offer more therapeutic advantages than physical yogic activities alone, especially for psychological problems associated to stress, according to these neurobiological alterations [16].

Although yoga based mental health therapies are gaining popularity, there are still few thorough clinical studies evaluating their effectiveness in treating psychological symptoms associated with smartphones addiction. Small sample numbers, a lack of suitable control groups, short intervention durations and insufficient evaluation of psychological effects using validated instruments have all limited previous research. Additionally, no prior study has explicitly examined whether adding yoga nidra to traditional yogic practices offers those who are addicted to smartphones additional psychological advantages.

Evidence-based, easily available strategies that address the behavioural and psychological aspects of smartphone addiction are desperately needed, specially in light of the growing mental health crisis among college students and the shortcomings of current therapies. Therefore, we carried out this randomised controlled experiment to assess whether yoga nidra in conjunction with yoga practices offers greater psychological benefits than yoga practices alone for college students who are addicted to smartphone and experiencing related psychological discomfort.

2. Methods

Study Design

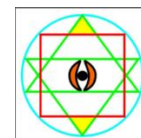
To assess the effects of yoga practices both with and without yoga nidra on psychological factors in college students who are hooked to smartphones were undertook a single-blind, randomised controlled experiment. The study was carried out at Udumalpet, Tamil Nadu, India from June to October of 2024. The Clinical Trials Registry of India (CTRI?2024/06/065432) has the study protocol recorded.

Participants

Convenience sampling was used to choose 18-25 year old college students who were addicted to smartphones from Udumalpet city’s colleges. The smartphone addiction scale-short version (SAS-SV), which has cut-off values of ≥ 31 for men and ≥ 33 for women, was used to diagnose smartphone addiction [17].



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Inclusion criteria

- Age 18-25 years
- Students presently enrolled in college.
- Willingness to attend three yoga sessions a week for 16 weeks;
- Smartphone addiction according to SAS-SV criteria
- DASS 21 total score ≥ 21 (showing at least mild psychological distress)
- Written informed consent was given

Exclusion Criteria

- Physical restrictions that hinder yoga practices
- A history of serious mental illness necessitating hospitalisation;
- Current use of psychiatric medications;
- Pregnancy;
- Prior substantial yoga experience (>6months of regular practices);
- Current involvement in other stress management techniques

Prior to enrolment all subjects provided written informed permission. The Institutional Ethical Committee granted ethical approval (IEC No. YR-2024-05-23).

Randomization and Masking

Using computer-generated random numbers with permuted blocks of different sizes (4,6,8) eligible participants were divided into two groups at random (1:1): the yogic practices alone group (YP) and the yogic practices plus yoga nidra groups (YP+YN). Sequentially numbered opaque sealed envelopes created by a separate statistician were used to guarantee allocation concealment. Due to the nature of the intervention, participants and yoga instructors could not be blinded to group allocation, however outcome assessors and data analysts were.

Procedures

All participants had baseline examinations, which included a thorough psychiatric evaluation, demographic data and smartphone usage trends. For 90 minutes each session, the YP+YN group engaged in yoga nidra after yogic practices, whereas the YP group only got yoga nidra for 60 minutes each session. For 16 weeks, three days a week for a total of 48 sessions both therapies were conducted by licensed yoga teachers who had at least five years of experience instructing therapeutic yoga.

Yoga Practices Protocol

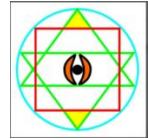
For both groups, the yoga practice program consisted of:

- Relaxing exercises (10 minutes of pawanamuktasana sequence)
- Eye exercises (five minutes of trataka and associated techniques)
- Three sets of ten minutes of suryanamaskar
- Trikonasana, Padahasthasana, Vakrasana, Ardha Matsyendrasana, Ushtrasana, Janu Sirasasana, Triyanka Bujangasana, Dhanurasana and Navasana (all 25-minute poses).
- Pranayama: Five minutes of Bhramari and Nadi sodhan pranayama
- Five minutes of Maha Mudra

After the yoga exercises, the YP+YN group also had 30 minutes of yoga nidra. In accordance with the conventional Satyananda yoga approach, the yoga nidra routine comprised body awareness, breath awareness, visualisation methods and methodical relaxation.



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Assessments of Outcomes

Latha Stress Scale: Developed by Latha Satish, this 52-item questionnaire measures life stress by considering the amount of change or adjustment that is necessary, rather than the unfavourable aspects of occurrences. The items are listed in order of mild to severe stress. Concurrent validity is high and test-retest reliability is 0.87. Interpretation of scores: low stress, 0-17; moderate stress, 18-35; and severe stress, 36-52 [18].

Rosenberg Self-Esteem Scale (RSES): A 10-item measure of overall self-esteem, the Rosenberg self-esteem scale (RSES) yields scores between 10 and 40. Self-esteem is positively correlated with higher scores [19].

Perceived Stress Scale: With scores ranging from 0 to 40, the perceived stress scale-10 (PSS-10) is a 10-item measure of perceived stress levels during the previous month. Perceived stress increases with higher scores [20]. All tests were performed by qualified psychology graduates who were blind to group assignment at baseline and after the intervention (week 16).

Statistical Analysis

The estimated effect sizes from earlier yoga intervention studies for depression (Cohen's $d=0.6$) were used to calculate the sample size. We needed 60 participants per group with $\alpha = 0.05$, power = 0.80 and a 20% dropout rate. SPSS version 28.0 was used to analyse the data [21]. Shapiro-Wilk tests and visual examination of histograms and Q-Q plots were used to determine normality. Independent t-test for continuous variables and chi square tests for categorical variables were used to compare baseline characteristics. For outcome measure, we employed independent t test to examine difference between groups for normally distributed data and paired t test to examine changes within groups. We employed Mann-Whitney U tests respectively, for data that was not normally distributed. Cohen's d was used to calculate effect sizes. The threshold for statistical significance was $p<0.05$.

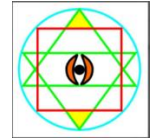
3. Results

Participant Flow and Baseline Characteristics

After 156 students underwent eligibility screening, 120 of them satisfied the requirements for inclusion and were assigned at random to the YP+YN group ($n=60$) or the YP group ($n=60$). Six people left the YP+YN group during the 16-week intervention period while eight participants left the YP group; as a consequence, 54 and 52 participants respectively, finished the research. 88.3% was the overall retention rate. Schedule issues ($n=8$), relocation ($n=3$), and disinterest ($n=3$) were among the reasons given for dropping participants.

Table 1: Baseline demographic and clinical characteristics of participants

Characteristic	Yogic Practices + Yoga Nidra ($n=60$)	Yogic Practices ($n=60$)	p-value
Age (years)	20.28 \pm 2.16	20.41 \pm 2.12	0.743
Gender			0.892
- Male	31 (51.7%)	32 (53.3%)	
- Female	29 (48.3%)	28 (46.7%)	
BMI (kg/m^2)	22.76 \pm 3.19	22.88 \pm 3.22	0.834
Education level			0.823
- Undergraduate	44 (73.3%)	45 (75.0%)	
- Postgraduate	16 (26.7%)	15 (25.0%)	
Daily smartphone use (hours)	9.34 \pm 2.67	9.52 \pm 2.71	0.712
SAS-SV total score	38.45 \pm 6.23	37.89 \pm 6.14	0.602



Data are presented as mean \pm SD or n (%). BMI = body mass index; SAS-SV = Smartphone Addiction Scale-Short Version.

The individuals initial clinical and demographic details are shown in Table 1. At baseline, there were no notable differences between the groups in terms of age, gender distribution, BMI, education level, amount of time spent using smartphones or baseline psychological assessments.

Table 2: Comparison of Stress and Anxiety Scores between Yoga with Yoga Nidra group (Group A) and Yoga-Only Group (Group B)

Variable	Group	Baseline (Mean \pm SD)	Post (Mean \pm SD)	Mean Difference (95%CI)	Within Group p- value	Between Group p- value	Effect Size (Cohen's d)
Latha Stress Questionnaire	A	38.2 \pm 6.5	24.1 \pm 5.2	-14.1 (-16.8 to -11.4)	<0.001	<0.01	1.25
	B	37.6 \pm 6.3	30.5 \pm 5.8	-7.1 (-9.3 to -4.9)	<0.01		0.80
Anxiety Questionnaire	A	42.5 \pm 7.2	26.7 \pm 5.6	-15.8 (-18.7 to -12.9)	<0.001	<0.01	1.35
	B	41.8 \pm 6.9	33.9 \pm 6.1	-7.9 (-10.4 to -5.4)	<0.01		0.85

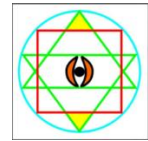
Anxiety Scores showed similar patterns, with the YP+YN group demonstrating greater improvement (-15.8) compared to the YP group (-7.9), with a significant between group difference ($p < 0.001$) and large effect sizes in both groups.

Stress Scores decreased more substantially in the YP+YN group (-14.1) compared to the YP group (-7.1), with a significant between group difference ($p = 0.002$).

4. Discussion

For college students who are addicted to smartphone this randomised controlled research offers strong evidence that yoga nidra in conjunction with yoga poses offers more psychological benefits than yoga alone. Anxiety, stress and the intensity of smartphone addiction all improved noticeably when yoga nidra was incorporated into a full yoga practice regimen. Our main results show that the YP+YN group significantly outperformed the YP group in reducing stress (14.1 vs 7.1 points) and anxiety (15.8 vs 7.9 points). Large effect sizes and benefits that are clinically significant are shown by these distinctions. Significant clinical recovery was shown by the YP+YN groups magnitude of improvements which shifted the majority of patients from moderate to severe psychological distress to normal to mild ranges. The extra benefits of yoga nidra are further supported by the better improvements in all secondary psychological assessments. A change from high stress to moderate stress is shown by the YP+YN group 24.1 \pm 5.2 point decrease on the Latha Stress Scale as opposed to the YP group. Comparably, the larger gains in and the intensity of smartphone addiction point to all encompassing psychological advantages that go beyond symptom relief to improved general wellbeing.

The increase in psychological effects shown with the inclusion of yoga nidra are consistent with the growing knowledge of yoga as a comprehensive technique for improving self-regulation and digital detox [22]. The



superior results are probably related to the special neurophysiological effects of yoga nidra which produce a hypnagogic state marked by deep relaxation while retaining consciousness. This state is linked to increased alpha and theta wave activity, decreased cortisol and inflammatory markers and enhanced activation of the parasympathetic nervous system.

Our results lend credence to the idea that by targeting core self-regulatory systems, yoga poses, meditation and breath control might help manage the symptoms of addiction. Yoga nidra methodical relaxation technique may particularly target the persistent hyperarousal state that characterises smartphone addiction and related mental health conditions [23]. Our findings are crucially contextualised by the meditation hypothesis put out by Kong et. al., (2025), which holds that academic worry causes smartphone addiction through self-regulatory tiredness [24]. This route may be especially addressed by the better stress reduction and improved self-regulation shown in our YP+YN group, which might account for the larger declines in the severity of smartphone addiction.

Strengths and Limitations

Our study's strengths include its randomised controlled design, intention to treat analysis. The comparison of two active therapies offers clinically relevant information on the enhanced value of yoga nidra and the 16-week intervention period gave enough time for significant psychological changes. A significant gap in the research is filled by including smartphone addiction as an outcome measure and selection criterion. There are a few limits to take into account. Given the nature of the intervention, the single blind design was inevitable and might introduce bias into self reported results. This worry is lessened, though by using blinded outcome assessors and established, standardised measures. The study scope was restricted to college students in a single geographic area which would have limited its applicability to other demographics or cultural settings. Due to ethical concerns about depriving disturbed individuals of potentially helpful therapies we did not include a no-treatment control group. Nonetheless, prior studies have demonstrated the superiority of yoga over control circumstances and the comparison of two active therapies offers useful clinical information on the incremental effects of yoga nidra.

5. Conclusions

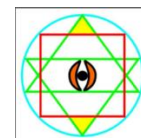
For college students with smartphone addiction and related psychological discomfort, this study offers strong evidence that yoga nidra in conjunction with yoga practices offers more psychological benefits than yoga practices alone. Yoga nidra greatly increases reductions in stress and anxiety while lessening the intensity of smartphone addiction. The incorporation of integrated yogic therapies into university mental health programs is supported by the wide range of psychological benefits, high acceptance and feasibility of group application. Policymakers, educators and healthcare professionals should think about including evidence based yoga interventions especially yoga nidra into therapeutic and preventative initiatives aimed at addressing psychological discomfort associated with technology use.

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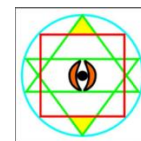
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Enhancing Life Education through Yoga Practice among School Students: A Case Study of Ever Bright School, Guduvanchery

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Abstract: In the modern educational environment, the focus on academic success often overlooks life education—skills and values necessary for emotional intelligence, physical wellbeing, discipline, and holistic development. This paper presents a case study from Ever Bright School (Kuthanur, Guduvanchery), which successfully integrated yoga as a life-skill training module within the school curriculum. Drawing parallels from ancient Indian Gurukulam traditions as depicted in mythological epics like *Ramayana* and *Mahabharata*, the school adopted yoga as a means to impart practical wisdom, social behavior, and mindfulness. The research highlights improvements in student behavior, eye health, physical flexibility, peer relationships, intelligence, and emotional maturity. By encouraging consistent yoga practice among children, the school has observed enhanced adaptability, creativity, and academic performance. This paper advocates for widespread adoption of yoga as a fundamental tool in school-based life education programs.

1. Introduction

Education in ancient India was not limited to academic subjects alone. The Gurukulam system emphasized *Jeevana Kalvi*—life education—which included discipline, self-reliance, empathy, respect, and mental focus. Students were trained not only in scriptures but also in ethical behavior, decision-making, and real-life problem-solving. In the current generation, the heavy dependence on gadgets such as smartphones, tablets, and television has affected children's focus, eye health, and interpersonal skills. There is a growing detachment from physical activity, leading to health issues and emotional imbalance. To counter these challenges, modern schools need to revive life education in the classroom. Yoga, as a physical, mental, and spiritual practice, holds immense potential in reshaping school education.

The principal of Ever Bright School, Mrs. Geetha Murugesan, observed these emerging problems among students and took a proactive step by incorporating yoga into the daily routine of the school. This paper explores the impact of that initiative and emphasizes the necessity of incorporating yoga as a formal component of school education.

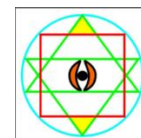
2. Methodology

This research is based on a qualitative observational study conducted at Ever Bright School. The yoga integration model included:

- **Daily Morning Yoga Sessions:**
Students began each school day with 15–30 minutes of yoga, including basic asanas, pranayama (breathing techniques), and meditation.
- **Trained Teachers and Instructors:**
Yoga-trained staff facilitated sessions, ensuring age-appropriate practices. Teachers also received basic training to supervise yoga activities.
- **Focus Areas:**
The program focused on the following developmental aspects:
 - Visual hygiene through eye exercises
 - Physical fitness and flexibility
 - Emotional calmness and stress relief
 - Awareness, focus, and problem-solving



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- Social behavior and team collaboration
- **Observation and Case-Based Learning:**
Teachers and parents observed and recorded behavioral and academic improvements. Specific case studies were documented, such as students' problem-solving behavior and peer coordination.
- **Comparison Groups:**
Informal comparisons were made between students who actively participated in yoga and those who did not, to understand the practical impact of the program.

3. Results and Discussion

A. Improved Eye Health and Attention

With regular practice of eye yoga exercises, students exhibited better eye contact and visual focus. This directly countered the harmful effects of prolonged exposure to screens. Parents also noticed a reduction in children's dependency on mobile phones and TV.

B. Enhanced Creativity and Problem-Solving

A standout incident involved a shorter child struggling to wash hands at a high sink. Instead of waiting or asking for help, the yoga-trained child requested another student to bend down and used their back to climb up—a display of quick thinking, teamwork, and applied intelligence, which reflected the benefits of creative bodily awareness taught in yoga.

C. Physical Fitness and Body Awareness

Children who participated in yoga had noticeably better posture, core strength, and flexibility. This not only benefited physical health but also translated to better classroom endurance and sitting attentiveness.

D. Calmness and Emotional Maturity

Yoga helped students manage stress and frustration, especially during exams or interpersonal conflicts. They became more cooperative, patient, and self-aware.

E. Academic Improvement

By reducing stress and improving mindfulness, students' memory retention and attention span improved. Teachers reported increased classroom engagement and better academic performance, especially in previously hyperactive or distracted children.

F. Social Discipline and Group Harmony

Yoga practice instilled a sense of respect, patience, and humility, fostering a peaceful classroom atmosphere. Children learned the value of non-violence, empathy, and helping behaviour.

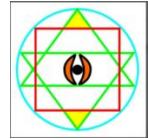
4. Implementation in Schools

At Ever Bright School, the implementation model was structured in a way that did not burden the existing timetable:

- Yoga was conducted during the morning assembly period.
- Students were encouraged to practice simple yoga at home.
- Teachers provided feedback to parents regarding their child's progress.
- Competitions, yoga awareness camps, and guest lectures were organized.
- Students were allowed to share their experiences and improvements in class, which encouraged peer motivation.



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This practical and inclusive model made yoga not just a subject but a way of life in the school environment.

5. Conclusion

The findings from Ever Bright School clearly demonstrate that yoga education is not merely a supplementary wellness practice but a transformative foundation for holistic modern schooling. Yoga addresses multiple dimensions of student development—physical vitality, academic focus, emotional stability, and social harmony. In an era where children face overstimulation, emotional disconnection, and the pressures of academic competition, yoga serves as a time-tested tool that nurtures balance, resilience, and self-awareness.

Through consistent yoga practice:

- Students gain physical fitness and better body awareness,
- Develop mental clarity and concentration,
- Cultivate emotional regulation and inner calm,
- Evolve into empathetic, mindful, and socially responsible individuals.

These benefits extend beyond the classroom and prepare students for real-life challenges with greater adaptability and ethical grounding. Thus, yoga should not be seen as an optional or extracurricular activity, but as a core element of life education. Integrating yoga into the heart of school education helps nurture a generation that is not only intellectually competent but also emotionally intelligent and spiritually rooted. The success of Ever Bright School offers a compelling model for other institutions seeking to restore balance, values, and vitality in the education of young minds.

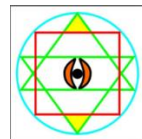
“Let us teach our children not just how to make a living, but how to live—through yoga.”

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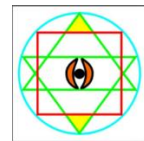
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Vallalar's Spiritual Herbology: Integration of Compassionate Siddha Tradition with Botanical Healing

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Abstract: Saint Vallalar (Ramalinga Swamikal), a 19th-century Tamil mystic and visionary, not only pioneered a philosophy of universal compassion and spiritual equality but also emphasized the curative potential of spiritual herbs. This paper explores the intersection of Vallalar's teachings with traditional Siddha herbal practices, focusing on herbs such as *Karisalai* (*Eclipta alba*), *Thuthuvalai* (*Solanum trilobatum*), and *Musumusukkai* (*Mukia maderaspatana*). Integrating spiritual insights from Vallalar's *Thiru Arutpa*, this article highlights how these herbs embody his holistic approach to physical, mental, and spiritual wellness rooted in Jeevakarunya (compassion for life). This article aims to highlight the medicinal and metaphysical significance of these herbs in light of Vallalar's teachings and poetic works, especially his *Thiru Arutpa*.

1. Introduction: The Mystic Saint

Vallalar, or Ramalinga Adigal, revolutionized Tamil spirituality with his doctrine of Samarasa Suddha Sanmarga Sathiya Sangam, promoting truth, purity, and compassion over ritualistic orthodoxy. He envisioned a world devoid of caste, creed, and religious boundaries. His ideology centered around Jeevakarunya (compassion to all beings), divine grace (Arutperunjothi), and the path of internal enlightenment through love and service.

“Arutperunjothi Arutperunjothi Thaniperungkarunai Arutperunjothi” (*Thiru Arutpa*, Invocation)

This invocation reflects his core belief that divine grace is infinite and accessible through boundless compassion. Vallalar's vision extended beyond spiritual practice into health, nutrition, and healing, promoting the use of spiritually charged herbs as part of holistic wellbeing.

1.1 Vallalar's Institutions and Social Reform

Samarasa Suddha Sanmarga Sathiya Sangam: Founded to eliminate social discrimination, this movement championed unity among all beings.

Satya Dharma Salai: A free feeding center established in Vadalur where food is served to all without any caste bias. This act of feeding was considered the highest form of divine worship.

Sathya Gnana Sabhai: A temple of wisdom where no idol worship was practiced. Instead, an ever-burning lamp symbolizing divine light was worshipped.

Vallalar's rejection of idol worship and emphasis on formless divinity aligns with his belief in inner light, or spiritual enlightenment.

2. Philosophical and Spiritual Foundations

2.1 Jeevakarunya (Compassion for Life)

Vallalar proclaimed that true spirituality lies in compassion:

"அருட்பெருஞ்ஜோதி ஆடும் அழகம்..."

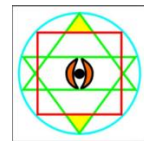
அறத்தினில் ஒருனை சம்போலன்று இல்லையே..."

(*Thiru Arutpa*, Verse 459)

He championed compassion over ritual, encouraging feeding the poor and caring for all beings as the highest form of divine service.



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2.2 Divine Grace and Inner Light

He viewed God as Arutperunjothi—the Infinite Grace-Light—and rejected idol worship, focusing instead on the internal spiritual light.

2.3 Structures for Social and Spiritual Reform

Satya Dharma Salai: A dining center for the poor, without caste discrimination.

Sathya Gnana Sabha: A temple of wisdom promoting universal spiritual truths.

Methodology (Divine Herbology in Vallalar's Philosophy)

Promotes hair growth and prevents premature graying

Improves scalp health and reduces dandruff

Acts as a liver tonic and aids in jaundice treatment

Enhances memory and reduces inflammation

Effective in treating asthma, cough, cold, and bronchitis

Reduces throat irritation and fever

Acts as an antimicrobial and digestive aid

Possesses antioxidant and anti-inflammatory properties

Vallalar alluded to specific herbs, considered "spirited" due to their vibrational alignment with divine energy. These herbs were not only medicinal but symbolized inner purification and the removal of karmic impurities.

3. Specific Herbs with Divine Energy

3.1 Karisalai (*Eclipta alba*): The Liver and Hair Healer Medicinal Benefits:

Spiritual Interpretation: Karisalai, with its black leaves, symbolizes absorption of negativity and restoration of purity—akin to Vallalar's belief in shedding ego and ignorance to realize divine light.

"Manam thelinthe arul peruvatharku, Marunthidhu unarchi karunaiyenavae" (*Thiru Arutpa*, Verse 1171)

Translation: "The medicine for purifying the mind is compassion."

3.2 Thuthuvalai (*Solanum trilobatum*): The Respiratory Savior Medicinal Benefits:

Spiritual Interpretation: Used to clear respiratory blocks, Thuthuvalai metaphorically represents the opening of the subtle pranic pathways, facilitating higher consciousness and inner clarity.

"Sirasu meliya thuyar theerndhida, Suruthi porul thelivu pada" (*Thiru Arutpa*, Verse 521)

Translation: "Let the sufferings in the head dissolve so the truth can resound clearly."

3.3 Musumusukkai (*Mukia maderaspatana*): The Digestive and Respiratory Cleanser Medicinal Benefits

Acts as a natural expectorant to clear mucus

Supports digestion and relieves constipation and gas

Contains anti-inflammatory, antioxidant, and antibacterial compounds

Improves skin health and may help with diabetes and hypertension

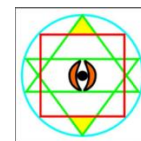
Spiritual Interpretation: Musumusukkai purifies the digestive tract—symbolic of cleansing the inner koshas (sheaths of existence). According to Siddha tradition, digestive fire (Agni) is central to both physical and mental clarity.

"Udal neenga ullam thelivu, Odungi nindru oli peruga" (*Thiru Arutpa*, Verse 2073)

Translation: "As the body dissolves, the mind becomes clear, and divine light shines within."



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4. Integrative Understanding: Herbology and Four Disciplines

Vallalar emphasized four dimensions of self-development:

1. **Physical Discipline** – Clean body through sattvic food and herbs
2. **Mental Discipline** – Contemplation and discrimination
3. **Spiritual Discipline** – Meditation on divine light
4. **Soul Discipline** – Non-violence and unconditional love

The spiritual herbs aid the physical and mental purification necessary to ascend toward spiritual and soul disciplines. In this context, herbs like Karisalai, Thuthuvalai, and Musumusukkai are not just medicines—they are sacred tools.

5. Result (Practical Application of Vallalar's Herb Wisdom)

- Dosage and Use: *Karisalai*: As hair oil, decoction, or capsule o *Thuthuvalai*: As soup, herbal tea, or powder
- *Musumusukkai*: As a paste with sesame oil or mixed with jaggery for internal use
- Combined Practices: Consumption alongside chanting of *Thiru Arutpa* for vibrational healing
- Use in Vadalur-based therapies where herbs and spiritual discourses are combined.

The study of Vallalar’s spiritual herbs—Karisalai (*Eclipta alba*), Thuthuvalai (*Solanum trilobatum*), and Musumusukkai (*Mukia maderaspatana*)—reveals their multifaceted therapeutic potential rooted in traditional Siddha medicine. Karisalai is noted for its hepatoprotective and hair-nourishing properties, promoting liver health, preventing premature graying, and stimulating hair growth. Thuthuvalai serves as a powerful remedy for respiratory conditions such as cough, asthma, and sinusitis, while also offering anti-inflammatory and antimicrobial benefits. Musumusukkai acts as a natural expectorant and digestive aid, helping to relieve congestion, bloating, and skin-related issues through its antioxidant and antiinflammatory actions. When aligned with Vallalar’s teachings, these herbs represent not just physical remedies, but tools for spiritual purification and holistic well-being, echoing his vision of compassionate, light-cantered healing.

6. Conclusion: Toward a Compassionate Herbal Future

Vallalar’s holistic approach shows that spiritual awakening and physical well-being are not separate paths but interconnected. By merging divine consciousness with natural healing, he provided a sustainable, compassionate, and inclusive model of living. His herbology echoes in modern Siddha and natural healing practices, offering timeless relevance.

“Anbe sivam endru arinthu, arul pera marundhu ithu Enrum vaazhga enathu uyir” (*Thiru Arutpa*, Verse 3377)

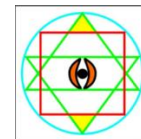
Translation: “Knowing love is God, this is the true medicine for grace—may my soul live by it forever.”

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Exploring Yoga's Role in Boosting Memory and Concentration

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Abstract: The practice of yoga includes static and dynamic postures (Asana), breathing manipulations (Pranayama) and meditation (Dhyana). Yoga is a tool which works from the gross body level to the shuttle mind level. In competitive sports like Football, success relies not just on physical talent but also on the mental game of staying focused, thinking clearly, and reacting quickly.

This study was aimed to review scientific literature related to yoga practice for memory enhancement. The results were analysed using simple percentages. It is concluded that regular practice of yoga asana develops the physical and mental capabilities, which improves the memory power, grasping power and intelligence.

Keywords: Yoga asana, Football, concentration, mental clarity, pranayama, cognitive performance, yogic intervention.

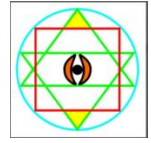
1. Introduction

In competitive sports especially, fast-moving games like Football mental toughness is just as important as physical skill. Sure, players need speed, strength, and coordination, but it's their focus, clarity, and ability to stay calm under pressure that often make the biggest difference. With Football's constant motion and split-second decisions, athletes need more than muscle; they need mental sharpness. That's why more players and coaches are looking at training methods that strengthen the mind, not just the body. One such method gaining ground is yoga. Yoga isn't new. It's been around for thousands of years, rooted in ancient Indian traditions. The word itself comes from the Sanskrit "YUJ", meaning to unite body, mind, and breathe. And while it started as a spiritual practice, today it's being recognized for its real-world benefits in high-performance sports. At its core, yoga blends physical poses (called asanas), breathing exercises, and mindfulness. The goal? Greater inner balance, awareness, and calm all of which are crucial when the pressure's on. Athletes today are under more mental strain than ever. The need to perform consistently, handle criticism, and compete at high levels takes a toll.

That's where yoga can help. Regular practice can lead to better focus, fewer distractions, and stronger emotional control. In a Football game, where players are constantly switching Between offense and defense, making fast calls, and reacting to opponents, this mental edge can be a game winner. What makes yoga especially useful is how it works on multiple levels. The poses help with balance and body control. Breathing exercises calm the nervous system, dialing down anxiety. Meditation teaches the mind to stay present. Together, these elements help players manage stress and keep a cool head during chaotic moments. Studies show that yoga can even change how the brain works, increasing activity in areas that handle focus and reducing it in areas linked to fear and overreaction. This kind of mental conditioning isn't new to sports psychology. Ideas like flow state, focus, and resilience are common in athletic training now. What's interesting is that these same ideas show up in ancient yoga texts. One well-known line from the Yoga Sutras says, "Yoga is the stilling of the fluctuations of the mind". That's exactly what top athletes aim for: a quiet, clear mind that stays locked in when it counts. Football players deal with intense pressure. Whether it's noise from the crowd, the stakes of the game, or their own expectations, the mental load can be heavy. That kind of stress wears down focus and leads to poor decisions. But yoga offers tools to fight that. It helps players become more aware of their thoughts and emotions, so they're less reactive and more in control. And yoga isn't just about the mind. Certain poses-like Tree Pose, Lotus Pose, and Corpse Pose-also build physical stability and awareness. When done with intention, these poses help athletes stay grounded, not just physically but mentally. Over time, this can lead to steadier, more confident performances, especially when the pressure ramps up. Even though yoga is used in many sports now, it hasn't been widely studied



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in the context of Football. Most research has focused on runners, martial artists, or general fitness. That leaves a gap in understanding how yoga can specifically benefit Football players' mental game-like staying focused through an entire match or handling high-stakes situations without losing clarity. This study aims to explore that gap. With so many athletes facing digital distractions, sleep issues, and rising anxiety, yoga might be more than just an add-on-it could be a necessary tool for mental well-being. And unlike medications or expensive treatments, it's accessible, natural, and rooted in a longstanding tradition. By combining practical training with psychological assessments, this research hopes to show how yoga can improve focus and mental clarity for Football players. If it works, it could give athletes not just a physical boost, but a mental one too. In the end, adding yoga to Football training might be the missing piece. It won't replace drills or strength work, but it can support the mental side of performance-helping players think clearly, stay calm, and play their best when it matters most.

In Sanskrit, the word 'Memory' is called 'Smriti'. The text book Patanjali Yoga Sutra describes memory as 'an experienced object not being lost from the mind. '

Yogas citta vrtti nirodhah

Yoga - Process of yoking Union

Citta - Consciousness

Vritti -Patterning,turnings,fluctuations

Nirodhah - Stilling,cessation,restriction

Yoga is the control of the modifications of the mind field.

Tada drastuh svarupe vasthanam

Then the Seer abides in itself,resting in its own True Nature,which is called Self-realization.

Vrttayah pancatayyah klistaklistah

"There are five activities of the mind. Each has both beneficial and problematic potentials."

Pramana viparyaya vikakalpanidrasmrtyah

The five activities of the mind are:

- Knowing correctly
- Incorrect knowing
- Imagination
- Deep Sleep
- Memory

In the following five sutras, Patanjali describes each of the above, allowing us to reflect on the mind with objectivity.

Pratyaksanumanagamah pramanani

Comprehension is based on direct observation of the object, inference, and reference to reliable authorities. "Direct observation" is a sensory experience. "Inference" is the mind at work when a sensory experience is unavailable. It could be logic, or memory. "Reference to reliable authorities" would trust a teacher, a text, a close friend, to give accurate information.

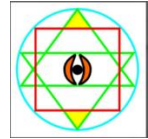
In yoga, it is strived to not only perceive, but also to know the inherent truth in all things, and first to know the inherent truth of ourselves.

Viparyayo mithyajnanamatadrupapratistham

"Misapprehension is that comprehension that is taken to be correct until more favorable conditions reveal the actual nature of the object."



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Anubhuta visaya asampramosah smrtih

Recollection or memory(smriti) is mental modification caused by the inner reproduction of a previous impression of an object, but without adding any other characteristics from other sources.

Abhyasa vairagya bhyam tan nirodhah

These thought patterns (vrittis) are mastered (nirodhah, controlled, quitted) through practice(abhyasa) and non-attachment(vairagya).

Enhancing the memory is a great way to discover soul and self. People that have used yoga have benefited mentally and physically. Yoga can be described as a relaxation technique that ancient sages invented to assist the needy who suffered from mental disorders or physical conditions. This technique includes Yama, Niyama, Asana, Pranayama, Prathyahara, Dharana, Dhyana, Samadhi, Kriya and chanting Mantra. Yoga practices have proven to heal the soul and mind. Yoga encourages peace, making it easier to cope with stress.

Causes for Memory loss

Chronic stress: In this situation the fight or flight mode that is only intended to work briefly becomes the norm. Over time the brain loses cells and has trouble creating neurons.

Sleep deprivation: Sleep deprivation compounds the effects of stress on the brain, because memories are sorted and organized during normal sleep.

Depression: It is usually linked with the lack of serotonin, a neurotransmitter connected to the arousal system. Concentration and focus are affected, impairing the ability to properly store new memories.

Nutritional deficiency: Good nutrition (including high-quality proteins and fats) is important to proper brain function. Deficiencies in vitamin B1 and B12 specifically can affect memory.

Alcohol, tobacco, or drug use: Excessive alcohol use has long been recognized as a cause of memory loss.

Stroke: A stroke occurs when the blood supply to the brain is stopped due to the blockage of a blood vessel to the brain or leakage of a vessel into the brain. Strokes often cause short-term memory loss. A person who has had a stroke may have vivid memories of childhood events but be unable to recall what he or she had for lunch.

Head injury: A severe hit to the head from a fall or automobile accident, for example can injure the brain and cause both short- and long-term memory loss. Memory may gradually improve over time.

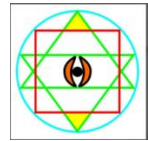
As memory loss is a critical problem which is people finding a solution, this study was aimed to review scientific literature related to yoga practice for memory enhancement.

2. Methodology

To understand how yoga might influence the mental performance of professional Football players, this study used a pre-test and post-test approach without random assignment. Over the course of eight weeks, players followed a structured yoga program, and their mental clarity and concentration were tracked before and after the training. The research combined numerical testing with hands-on observations to capture both hard data and day-to-day behavioral changes. Efforts were made to keep the process straightforward, reliable, and consistent so that others could repeat the work if needed. The entire study was reviewed and approved by an independent ethics board to ensure it met standard research guidelines. Experienced yoga



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instructors, who also had a background in working with athletes, led the sessions, bringing both expertise and practical understanding to the program.

Participants of this study included 30 Football players-15 men and 15 women-between the ages of 18 and 30. All of them had been competing for at least four years and were actively involved in regular training. Players dealing with neurological conditions, current psychiatric issues, or injuries that could limit their ability to practice yoga were not included. Each participant gave written consent after being informed about the purpose of the study and their right to withdraw at any point without consequence. To ensure fair representation, players were grouped based on gender, skill level, and experience, and then randomly divided into two groups. One group practiced yoga as part of the intervention, while the other continued with their usual training schedule and did not participate in any yoga-related activities.

Intervention Design

The yoga program was designed specifically to support mental clarity and focus, with input from both yoga therapists and Ayurvedic practitioners. It combined physical poses (asanas), controlled breathing (pranayama), and meditation (Dhyana) into one routine. Each session lasted around 45 minutes and took place five days a week, running for eight weeks straight. The goal wasn't just physical flexibility-it was to help players feel more focused, calm, and mentally sharp during game situations.

Yoga Practices Included in the Training

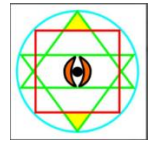
Each yoga session started off simply-with a bit of stretching and joint rotation to loosen up and get the body ready. From there, players moved into a set of yoga postures chosen for their mental benefits just as much as their physical ones. One of the core poses was *Padmasana*, or Lotus Pose. It's a seated position that helps the body feel grounded and steady-something that sets the tone for calm, focused breathing. Then came *Vrikshasana*, better known as Tree Pose. Balancing on one leg while holding your posture builds focus in a very direct way. The athletes had to stay centered, both physically and mentally, to hold it properly. To help with visual focus, players practiced *Trataka*-a technique where they fix their gaze on a single point, often a candle flame. It might seem simple, but it trains the eyes and mind to stay with one task, which is a powerful skill in fast-paced games like Football. *Mountain Pose*, or *Tadasana*, was also part of the routine. It may look like just standing still, but there's a lot happening-posture alignment, breath control, and mental centering. Every session closed with *Shavasana*, or Corpse Pose. Lying still and letting go of tension helped players mentally reset before returning to their daily training. Breathwork, or *pranayama*, played a big role too. One technique, *Nadi Shodhana*-alternate nostril breathing-was used to balance the left and right sides of the brain and calm the system down. Then there was *Bhramari*, a soft humming breath that helped quiet mental noise. *Ujjayi* breathing-sometimes called "victorious breath"-was taught to build internal awareness and help athletes stay alert but not overstimulated.

The sessions also included guided relaxation. *Yoga Nidra* helped athletes enter a state of deep rest, even though they remained awake. It was especially useful for clearing the mental clutter that often builds up during intense training cycles. Some sessions ended with *Om* chanting-a simple sound repeated out loud or silently to calm the mind and ease scattered thoughts.

Throughout the program, instructors didn't just demonstrate the poses-they paid close attention. They made sure players were breathing in sync with their movement, maintaining good alignment, and staying focused on the practice. The goal wasn't perfection-it was presence.

3. Results

The main goal of the analysis was to see whether the yoga training actually improved focus and mental clarity in professional Football players. Both groups-15 in the yoga group and 15 in the control group-were assessed at the start and again after eight weeks. The analysis pulled from both descriptive and inferential



statistics, using the methods laid out earlier. To start, basic averages were looked at to see if both groups were comparable before the intervention. The experimental group had a starting mean score of 60.32, with a standard deviation of 4.75. The control group's starting average was 59.84 (± 5.11), showing both groups were fairly even at the beginning.

After the eight-week yoga program, the experimental group's average score jumped to 69.23 with a tighter spread (± 3.56), suggesting real improvement. The control group also saw a small bump to 62.35 (± 4.31), but the change wasn't strong enough to be considered statistically significant. Overall, the data points to a clear pattern: those who followed the structured yoga plan saw noticeable gains in focus and mental clarity, while the control group stayed mostly where they started. These results are laid out in Table 1, showing side-by-side how each group progressed.

Table 1: Descriptive statistics of cognitive scores (Pre- and Post-Test)

Group	Test Type	Mean Score	Standard Deviation
Experimental	Pre-Test	60.32	± 4.75
Experimental	Post-Test	69.23	± 3.56
Control	Pre-Test	59.84	± 5.11
Control	Post-Test	62.35	± 4.31

Table 2: Results of Statistical Tests

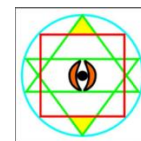
Comparison	T-Statistic	P-Value	Significance
Experimental Group (Pre vs Post)	6.89	< 0.001	Significant
Control Group (Pre vs Post)	1.43	0.163	Not-Significant
Post-Test: Experimental vs Control	6.80	< 0.001	Significant

Statistical Results

To dig deeper into the results, statistical tests were run to confirm whether the changes seen in concentration and mental clarity were truly significant. Within the experimental group, a paired sample t-test showed a major difference between the scores before and after the yoga training. The test produced a t-value of 6.89, with a p-value of less than 0.001—clearly showing that the improvement wasn't by chance. Players who practiced yoga regularly saw meaningful gains in focus and cognitive clarity. In contrast, the control group didn't show much change. When the same test was applied to their pre and post-scores, the t-value came out to just 1.43, and the p value was 0.163. That result doesn't meet the threshold for statistical significance, suggesting that sticking with regular training—without yoga—wasn't enough to boost mental performance in any noticeable way. To double-check the differences between the two groups, an independent sample t-test was also run using the post-test scores. This time, the t value was 6.80, again with a p-value well below 0.001. The takeaway? The group that added yoga to their routine significantly outperformed the group that didn't. These results reinforce the idea that the yogic practices made a real, measurable impact. A full



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breakdown of these outcomes is available in Table 2, showing not just the differences, but how strong and reliable they are.

4. Discussion

There were 15 asanas mentioned in Hatha Yoga Pradeepika. They are Swasthikasana, Gomukhasana, Veerasana, Kurmasana, Kukkuta asana, Uttana kurmasana, Dhanurasana, Mathsyasana, Pashchima Thana, Mayurasana, Shavasana, Siddhasana, Padmasana, Simhasana and Badrasana. Only Dhanurasana and Padmasana were important in enhancing memory among asana mentioned in Hatha yoga Pradeepika. But other sources revealed that Bujangasana, Sarvangasana, Pashchimoththanasana, Thadasana, Padahasthasana, Bakasana and Halasana also help enhance memory.

Regular practice of Pranayama along with Asana is helpful for all round development and improving the memory power. In a seated position there are four Pranayama exercises that will stimulate the brain cells, energize the mind on the whole, unify the body mind and breathe causing calm and facilitate clear thinking. Bhastrika, Kapalabhati, Brahmari, Ujjayi, Nadi Shuddhi Pranayama and full yogic breathing are the best. They improve the memory power and cures forgetfulness.

Pranayama or the breathing exercises help to focus the mind on breathing patterns as breathe in and out and thus helps to increase the oxygen flow to the body and also improves the concentration and focus. It also helps to correct the breathing pattern that helps in improving the oxygen flow to the brain and nourishes it. It also clears any blockages in the system and also helps to correct the energy flow. Therefore, Prana or the life energy flows unobstructed. This process helps in deeply nourishing the brain and to improve concentration and memory.

Surya Namaskara or the sun salutation (12 different postures) can be practised daily. It helps to work out the entire body. Shavasana for the purpose of observing the breath or creating awareness of the body. Other Asanas that can be practiced are Sarvangasana as its shoulder-stand works on the sympathetic and parasympathetic nervous systems, and creates health in the brain and spine by increasing blood flow to the scalp and brain. This pose has been clinically observed to promote vitality and increase memory and IQ. Salabasana improves the nervous system that will in turn affect the brain. Dhanurasana increases circulation to the head region. It also helps the respiratory system that if working properly will allow the mind to be clear and light instead of drowsy and heavy. Urdhva Prasrita Padasana is good for circulation of blood for heart to head and is good preparation for Sarvangasana. Following are the standing/balancing postures that all build concentration and awareness, quietness the mind as well as activate it, improves memory power makes the body lighter and fresher, cleansing and mentally challenging as well as preparation for other asanas like Parighasana for backbends.

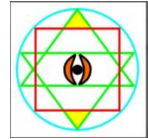
Regular practice of Sarvanagasana supplies fresh oxygenated blood to the brain. It makes the pituitary and pineal glands healthy, and so activates the brain. It increases the memory power, grasping power and intelligence among the children. Bhujangasana is a rejuvenating asana and it is also beneficial for improving memory power.

In addition to its effect of balancing the Doshas and strengthening the body, yoga also has the result of calming the mind, for yoga postures are performed in a slow, peaceful manner, with a centered mind. This has both an immediate calming effect and long term result of a calm and peaceful countenance.

Yogic practices like Asanas, Pranayama meditation and Om chanting increase the circulation of blood to the brain. This helps calm the mind and enhances concentration skills. Memory lapses can also be prevented



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through yogic practices that enhance the power of recall. One can draw upon the immense power of the mind with consistent yogic endeavor.

When someone fails to remember something, which he or she has read, heard or seen and cannot remember despite several efforts then it is called loss of memory power or forgetfulness. People of all age groups are suffering due to this problem. There are a number of reasons for this problem. For example, mental tension, excessive mental work or not using it at all, busy schedule throughout the day, physical and mental weakness or serious head injury.

Yogic exercises are also helpful in improving memory power and reducing forgetfulness. Practice the yogic exercises with the feeling that the memory power is improving and forgetfulness is reducing. Regular practice of these exercises develops the physical and mental capabilities, which improves the memory power, grasping power and intelligence. Regular practice of Sarvangasana and Bhujangasana cures all the physical and mental related problems and thereby improves memory power.

5. Conclusion

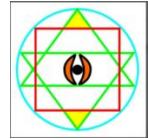
This study set out to answer a simple but important question: can yoga help professional Football players think more clearly and stay focused under pressure? After eight weeks of practice, the answer appears to be yes. Players who added yoga to their routine didn't just feel better-they performed better in ways that matter during a game. They concentrated longer, reacted faster, and handled stress with more control. What made the difference wasn't just moving through yoga poses. It was the combination of stillness, breath, and focused attention that gave athletes a clearer mind. They weren't just physically fit-they were mentally steady. Coaches noticed it too. Players in the yoga group made fewer careless mistakes, stayed calmer during scrimmages, and showed more poise when it counted. Meanwhile, players who followed their regular training routines-without yoga-didn't show the same kind of progress. Their focus and clarity stayed mostly the same. This contrast tells us something important: the gains seen in the experimental group weren't random, and they weren't just from practice. They were linked to the specific effects of yoga. In a sport as fast and demanding as Football, those small mental advantages can have a big impact. Being able to keep your head clear, stay focused, and make the right choice under pressure can change the outcome of a game. Overall, this study supports the idea that yoga isn't just good for general wellness-it's a practical, powerful tool for serious athletes. It's simple, low-cost, and deeply rooted in Indian tradition. For players and coaches looking to build sharper, more resilient teams, yoga offers a way to train the mind with as much intention as we train the body.

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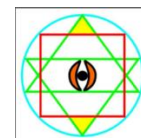
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Healing Beyond Pills: The Role of Yogic and Aerobic Practice in Cyclic Mastalgia

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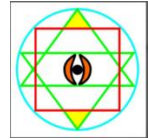
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Abstract: Background: Mastalgia, also known as Mastodynia, refers to the medical terminology for breast pain, a prevalent condition experienced by women. The practice of asana, combined with an ideal diet, cleansing practices, and relaxation techniques, strengthens the Annamayakosha. Asana plays a crucial role in yoga therapy, contributing significantly to the enhancement of vitality across all systems. The consistent stretching in each position may lead to a decrease in discomfort in the arm, neck, and thoracic area. Adhering to a satvik diet and eliminating caffeine intake contributes to maintaining a sense of calm and control. Cleansing (Shatkarma) has been shown to effectively detoxify the body's systems. Aim Of The Study: To evaluate the effect of structured yoga exercise protocol and aerobic exercise have on cyclic mastalgia patients. Methodology: The participants were recruited according to the inclusion and exclusion criteria, the pretest was analysed using vas and breast pain score, then the participants segregated into two groups, in group A the participants were intervened yoga therapy and in group b the participants were intervened with aerobic exercise, then after 12 weeks of exercise the post test was taken and collected samples were statistically analysed. Result: The mean value of post vas score in group A was 2.94 and in Group B was 5.13 on parallel the mean value of breast pain score in group A was 3.19 and group B was 5.13. Conclusion: This study concludes that the breast pain was significantly reduced among participants in group A than the participants in group B.

1. Introduction

Mastalgia, also known as Mastodynia, refers to the medical terminology for breast pain, a prevalent condition experienced by women. The majority of women, approximately 70%, may encounter breast pain at some stage in their life. Breast cysts are a component of a broader noncancerous condition called fibrocystic disease of the breast, which is primarily discussed in the breast clinic. A simple breast cyst is an anomaly that arises during the normal development of the breast. It is characterized by a fluid-filled cavity bordered with epithelial cells, located within the breast tissue. They could be either minuscule microcysts or large macrocysts, either as single entities or in multiple quantities. Fluid-filled cysts are present inside the breast parenchyma and typically hold a volume of 20 to 30 ml of liquid. Approximately 1 out of every 14 women gets a detectable cyst. The cause of cyclic breasts is still unknown. Mastalgia is the most common breast complaint observed in individuals seeking treatment at the breast clinic.



Mastalgia is classified into two main categories: Cyclic Mastalgia and non-cyclic Mastalgia. The condition typically manifests between the ages of 30 and 40, affecting both breasts. However, the pain is typically more pronounced in one breast compared to the other. Cyclic Mastalgia subsides upon the onset of menstrual flow. Along with treatment improves the condition in approximately 22% of individuals, it persists in around 65% of patients.²

Non-cyclic Mastalgia typically occurs in women who are premenopausal and over the age of 40-50. There are several potential causes for this condition, including cysts, periductal mastitis, straining of Cooper's ligaments, traumatic fat necrosis, Mondor's disease, diabetic mastopathy, and neoplasia.^{3,4} The study conducted by Sharma et al. found that cyclic Mastalgia is distinct from non-cyclic Mastalgia, which is similarly linked to abnormal lipid metabolism. It can be resolved in 50% of cases, but in certain instances, it can be challenging to treat. There is an underlying hypothesis regarding a potential correlation between Mastalgia and breast cancer, although no definitive proof has been shown thus far. Cochrane et al. did a retrospective study and discovered that among a total of 2332 patients, only one patient reported having cancer along with symptoms of Mastalgia. According to Khan and Apkarian's findings, those experiencing breast pain have a lower probability of receiving a breast cancer diagnosis⁸. The worldwide incidence of Mastalgia is approximately 41 to 79%, but in metropolitan areas of India it is around 51-54%.

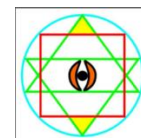
The endocrine problems associated with Mastalgia include elevated estrogen secretion from the ovary, inadequate progesterone production, and hyperprolactinemia. Some various factors, such as coffee and methylxines^{5,6}, have been associated with an increase in breast pain by considerably elevating epinephrine levels⁵. Globally, the prevalence rate of women is markedly higher than that of men. Additionally, women fulfil a dual function as both homemakers and community workers. Overall, there is a consistent focus on women's health due to the significant impact it has on the overall functioning of daily tasks at home and within the community.

The practice of asana, in conjunction with an optimal diet, cleaning rituals, and relaxation techniques, fortifies the Annamayakosha. Asana is a fundamental component of yoga treatment that enhances the vitality of all bodily systems. The repeated stretching in each position may lead to a decrease in discomfort in the arm, neck, and thoracic area. Adhering to a satvik diet and abstaining from caffeine help to maintaining composure under control. Cleansing (Shatkarma) has shown to be useful in purifying bodily systems. Alternative therapies such as naturopathy, Ayurveda, and acupressure adhere to the fundamental premise of eliminating accumulated toxins, which obstruct the passage of prana. The cleansing procedure alleviates panic-induced blockages and facilitates detoxification. Pranayama is the practice of pranayama kosha, including the intentional regulation of breathing by a certain ratio of intake, expiration, and breath retention. Also referred to as purak, rechak, and kumbhak, respectively. The Hathapradipika states, "chalevatechalechittam," indicating that when breathing is tranquil, the mind naturally attains calmness. Diverse modalities of prana facilitate the passage of prana to various organs, specifically targeting the breast region in instances of cyclical mastalgia. Meditation is the primary practice of Manomayakosha. Meditation (Dhyana) is the effortless stream of a single thought, as articulated by Maharshi Patanjali. Meditation directly influences the brain, hypothalamus, and pituitary gland. The hypothalamus stimulates the parasympathetic system. The pituitary gland regulates the endocrine system, leading to beneficial biochemical changes. It assists in mitigating stress and improving mental health and well-being⁶⁻¹⁵.

Research Question

Does a structured yoga exercise protocol and aerobic exercise have beneficial effect on cyclic Mastalgia patients?

2. Aim of the Study: To evaluate the effect of structured yoga exercise protocol and aerobic exercise on cyclic Mastalgia patients.



Need of the Study

Cyclic Mastalgia is a common yet under-addressed concern affecting women's physical comfort, emotional health, and social participation during their reproductive years. Pharmacological management often lacks long-term adherence and carries side-effect risks, especially when pain stems from lifestyle and hormonal factors. There is a critical need to explore safe, non-invasive, and holistic approaches, such as yogic practices and aerobic exercise, to mitigate symptoms and improve well-being. This study is linked with SDG Goal 3.

3. Methodology

Study Design, Period and Study Area

- This study is reported in accordance to the Consort guidelines. This is an experimental study with a sample size of 30 conducted between the year 2024- 2025 in Chengalpattu district.

Source And Study Population

- The women aged between 20 – 40 years, experiencing discomfort originating from the chest wall, pregnancy, an irregular menstrual cycle, women undergoing hormone therapy, breast pain accompanied by a lump, and diagnosed cases of breast cancer. The study excluded psychiatric problems and cardiovascular ailments.

Data Collection Procedure

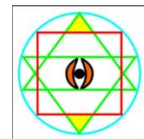
- The participants were explained in detail about the need and procedure of the study then an informed consent were obtained.
- The participants were equally segregated into two Groups using Simple random sampling a computer generate method is employed to allocate groups.
- During pretest, the assessment of pain involved the utilization of a visual analogue scale and breast pain chart to measure the degree of pain.
- **Group A (Experimental Group I)** The participants in group A with cyclic mastalgia in addition to routine their management protocol was advised with structured yoga practice.
- **Group B (Experimental Group II)** This participant in group B with cyclic mastalgia in addition to their routine management were advised with structured physiotherapy aerobic exercise. After 12 weeks of exercise protocol the post test was conducted using visual analogue scale and breast pain chart,

Table 1: Yogic Intervention

S.NO	YOGA POSES	Repetitions
1.	Gayatri Mantra	1 min
2.	Yogic Breathing	2min
3.	Pawan muktasana series 1	10 min
4.	Surya Namaskar	10 min
5.	Aardhaticakrasana	1 min
6.	Padahastasana	1 min
7.	Ardhacakrasana	1 min
8.	Trikonasana	1 min
9.	Paschimotanasana	1 min
10.	Gomukhasana	1 min



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11.	Ustrasana	1 min
12.	Sasankasana	1 min
13.	Vakrasana	1 min
14.	Bhujangasana	1 min
15.	Dhanurasana	1 min
16.	Salabhasana	1 min
17.	Inverted pose	1 min
18.	Sarvangasana	1 min
19.	Pranayama and Kriya	12 min + 15 min
20.	Kpalbbhati	40 stroke X 3
21.	Nadishodhan	9 cycle
22.	Bhastrika	20 X 3
23.	Bhramari	9 rounds
24.	Kriya	Once in a week
25.	Jalneti	
26.	Kunjla	
27.	Meditation	5 min
28.	Chanting of A, U, M and OM 3 round each Mantra	5 min
29.	Shani path	2 min
Total		1 h 30 min

Table 2: Aerobic Exercise

WARM UP	CONDITIONAL	COOL DOWN	INTERVAL
Last for 7 ½ mins • Total body repetitive movements • Static stretching	Intensity - sub maximal prolonged 60%-70% of HR max • Time - 30 mins Type - Walking and chair-t exercises	Last for 7 ½ mins • Total body repetitive movements • Static stretching	• Total no of weeks - 24 weeks • No of sessions per week – 3-time a week.

Statistical Analysis

Table 3: Table Illustrates The Comparison Of Pre And Post Test Of Vas Score In Group A

GROUP A	N	SEM	MEAN	SD	T VALUE	CONFIDENCE INTERVAL	P VALUE
VAS PRE	15	0.31	5.06	1.24	9.0639	95%	0.0001
VAS POST	15	0.23	2.94	0.93			

Bar Diagram I

Bar Diagram Illustrates Comparison Of The Pre And Post Test Of Vas Score In Group A

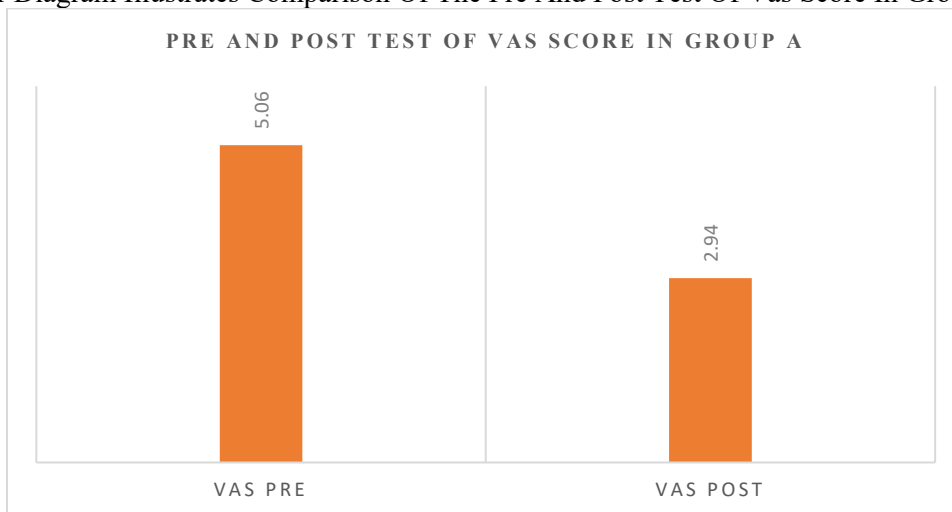
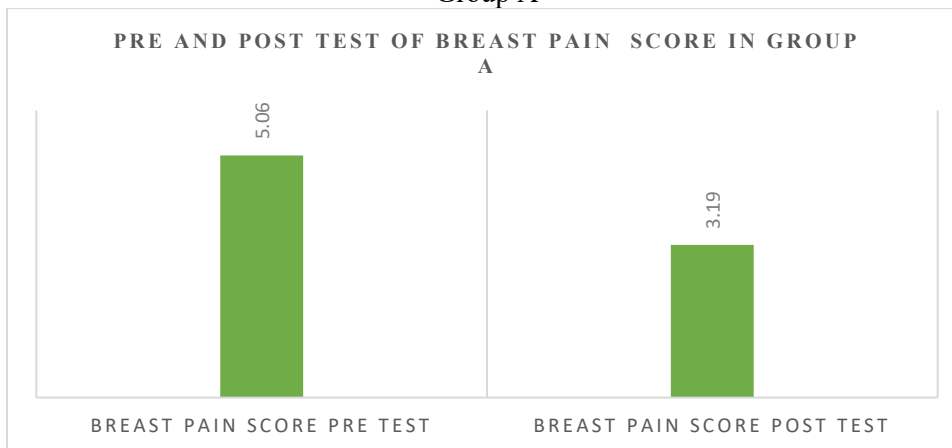


Table 4: Table Illustrates The Comparison Of Pre And Post Test Of Breast Pain Score In Group A

GROUP A	N	SEM	MEAN	SD	T VALUE	CONFIDENCE INTERVAL	P VALUE
BREAST PAIN SCORE PRE TEST	15	0.31	5.06	1.24	8.4740	95%	0.0001
BREAST PAIN SCORE POST TEST	15	0.26	3.19	1.05			

Bar Diagram II

Bar Diagram Illustrates The Comparison Of Pre And Post Test Of Breast Pain Score In Group A



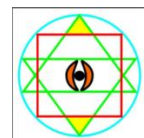


Table 5: Table Illustrates The Comparison Of Pre And Post Test Of Vas Score In Group B

GROUP B	N	SEM	MEAN	SD	T VALUE	CONFIDENCE INTERVAL	P VALUE
VAS PRE	15	0.39	5.88	1.54	6.7082	95%	0.0001
VAS POST	15	0.39	5.13	1.54			

Bar Diagram III

Bar Diagram Illustrates The Comparison Of Pre And Post Test Of Vas Score In Group B

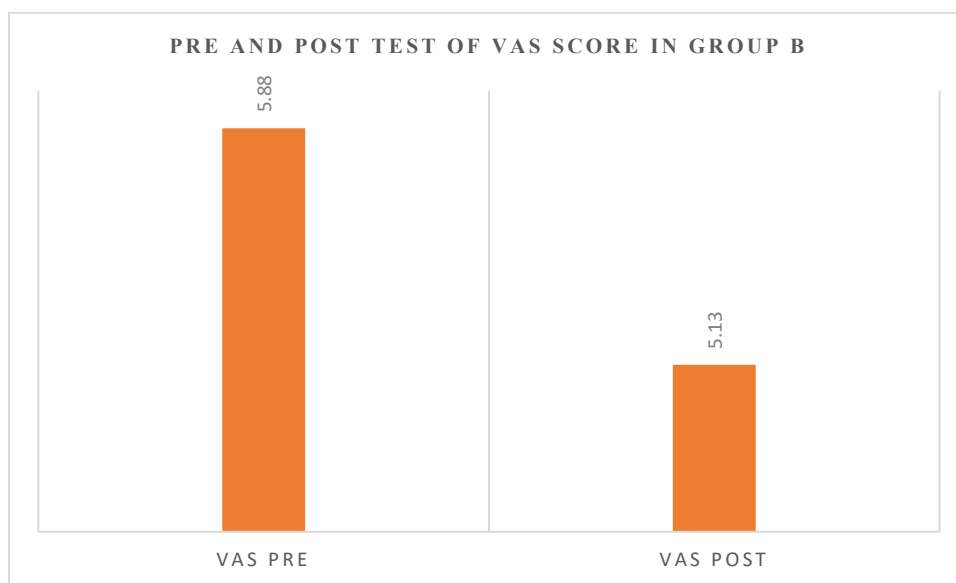


Table 6: Table Illustrates The Comparison Of Pre And Post Test Of Breast Pain Score In Group B

GROUP B	N	SEM	MEAN	SD	T VALUE	CONFIDENCE INTERVAL	P VALUE
BREAST PAIN SCORE PRE TEST	15	0.39	5.88	1.54	6.7082	95%	0.0001
BREAST PAIN SCORE POST TEST	15	0.39	5.13	1.54			

Bar Diagram IV

Bar Diagram Illustrates The Comparison Of Pre And Post Test Of Vas Score In Group B

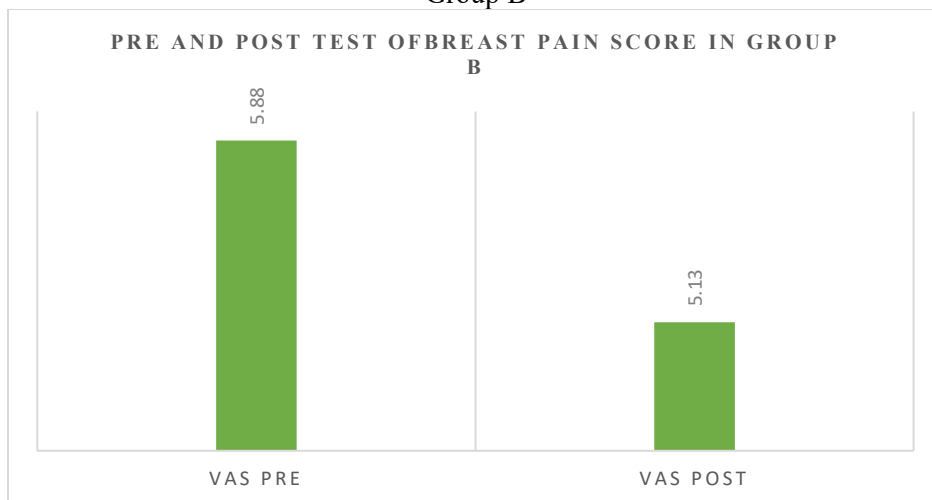
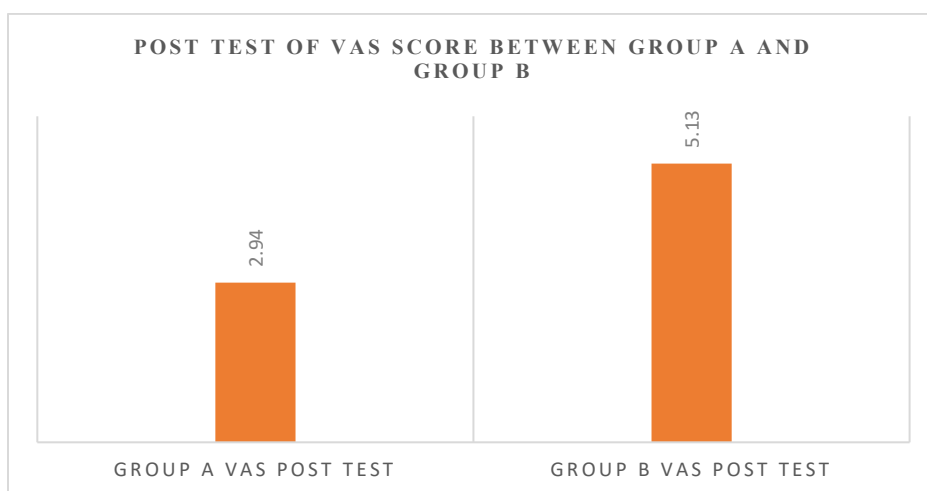


Table 7: Table Illustrates The Comparison Of Post Test Of Vas Score Between Group A And Group B

GROUP A VS GROUP B	N	SEM	MEAN	SD	T VALUE	CONFIDENCE INTERVAL	P VALUE
VAS POST TEST	15	0.23	2.94	0.93	4.3591	95%	0.0001
VAS POST TEST	15	0.39	5.13	1.54			

Bar Diagram V

Bar Diagram Illustrates The Comparison Of Post Test Of Vas Score Between Group A And Group B



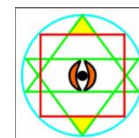
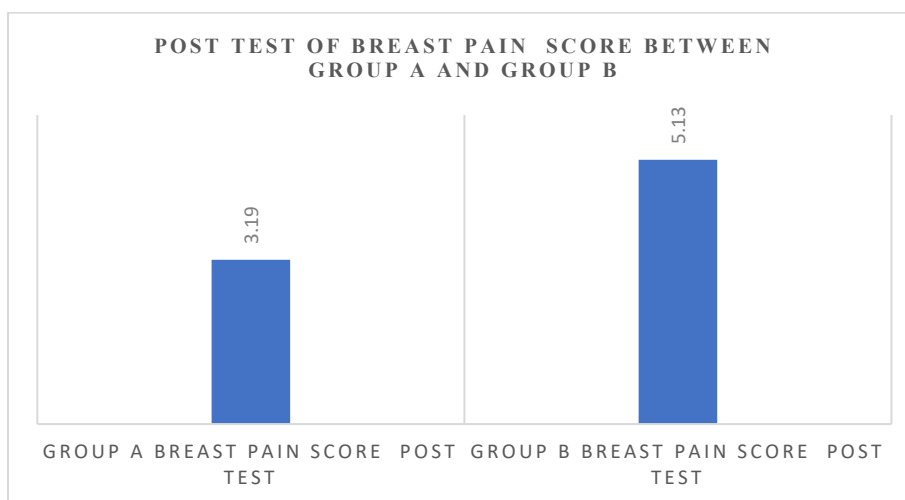


Table 8: Table Illustrates The Comparison Of Post Test Of Breast Pain Score Between Group A And Group B

GROUP A VS GROUP B	N	SEM	MEAN	SD	T VALUE	CONFIDENCE INTERVAL	P VALUE
BREAST PAIN SCORE POST TEST	15	0.26	3.19	1.05	3.7835	95%	0.0018
BREAST PAIN SCORE POST TEST	15	0.39	5.13	1.54			

Bar Diagram VI

Bar Diagram Illustrates The Comparison Of Post Test Of Breast Pain Score Between Group A And Group B

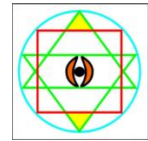


4. Discussion

The worldwide incidence of Mastalgia ranges from 41 to 79%, while in metropolitan areas of India, it is approximately 51-54%. Although the prevalence rate appears to be universal, women's awareness is still clouded due to the hindering factor of breast pain symptoms coinciding with cyclic Mastalgia. However, due to women's catastrophizing psychological mood swings, they tend to suspect breast cancer. Therefore, the fundamental concept of the research was extracted.

Cyclic mastalgia is defined by significant pain or discomfort in one, but more often both, breasts prior menstruation. This condition may be attributed to several reasons, including elevated oestrogen levels, progesterone shortage, heightened baseline prolactin levels, enhanced prolactin responsiveness, and a potential involvement of gamma linoleic acid deficit. Disease treatment largely involves pharmaceutical therapy, which is beneficial; however, for long-term control, other non-pharmacological therapies, including physical activity, breathing exercises, and yoga practices, are recommended.

The study was focused on a specific geographical area in and around the Chengalpattu community population, based on specific criteria for inclusion and exclusion the participants were segregated into two



groups, In group A the participants were intervened with Yoga therapy and the participants in Group B were intervened with aerobic exercise. The results of this study put forth point that yoga plays a crucial role in decreasing the breast pain and improving the quality of life among women with cyclic mastalgia, the outcomes of this study illustrates that in comparing the mean value of pre and post test within the groups, both the groups are clinically and statistically significant, on contrast in comparing the mean value of post test of vas score and breast pain score between the groups, the participants who were intervened with yoga therapy had significant reduction in breast pain than the participants in group B. The findings of this study align with previous research indicating that Yoga Therapy can alleviate breast pain (Mastalgia) while also contributing to the reduction of menstrual irregularities and mental health issues such as anxiety and stress, ultimately enhancing quality of life. The primary yoga practice aids in alleviating the fear associated with breast cancer, as many women experience breast pain on a monthly basis. Consequently, it will help in preventing the development of psychosomatic and somatopsychic disorders.

Garima Jaiswal and collaborators, 2021 This randomized controlled trial, carried out over a period of A 60-day yoga intervention demonstrated significant improvements in anxiety, stress, and breast discomfort associated with cyclical mastalgia among university females. Consequently, it may be inferred that healthcare professionals or doctors may see yoga practice as a key intervention for cyclical mastalgia. The conclusion of this study indicates that engaging in yoga therapy for patients with cyclic mastalgia will reduce breast pain and enhance quality of life.

5. Conclusion

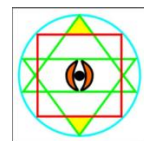
This study concludes that the Breast pain was significantly reduced among participants in group A those who were intervened with yoga therapy than the participants in group B those who were intervened with aerobic exercise.

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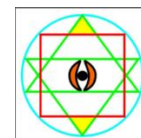
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**Influence of Meditation Garden to Reduce Stress among the Employees of
Higher Institutes**

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Abstract: Stress is stress and it varies with different people for various reasons and impact on self and others. Especially work-stress affects every unit of an organization. Therefore the aim of the research was to estimate the degree of work stress and analyze the effect of meditating garden on work stress management. Thirty participants were selected through purposive sampling and informed consent was obtained. The work stress was estimated through a five point scale questionnaire developed by the American Institute of Stress (1978) and the selected participants were intervened with plant based meditation for 30 minutes for 4 weeks and the effects was analyzed. The results indicate that there is a reduction in stress scale among the employees from 27.33 ± 4.72 to 24.33 ± 5.70 at 0.02 % significant level with t value of 1.92. The feedback for the air purifying plants rated areca palms as their best option followed by Pothos species and the preferred duration is 30 minutes for meditating in between the working hours and most of the participants preferred the morning session. Meditating with plant based environment is a therapy and practicing frequently will have high impact and reduce work-stress enhancing efficiency of the employees.

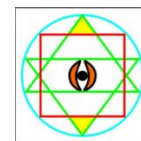
Keywords: Meditating garden, air purifying plants, employee stress, and workplace stress.

1. Introduction

Stress has become a ubiquitous term used by individuals from all walks of life. It produces ripple effects that influence various aspects of life, including home, workplace, and social relationships. The human body is not equipped to function optimally under prolonged, chronic stress. Although stress is commonly defined as the nonspecific response of the body to any demand placed upon it, the concept is much more complex and multifaceted.

Occupational stress has gained increasing importance, largely due to structural changes in the modern workplace, which bring about higher demands and job insecurity. This phenomenon is associated with a range of negative health outcomes—most notably, psychological disorders that often go unnoticed but occur with high frequency (Tennant, 2001). As Johnson (2005) notes, the workplace can significantly impact mental health, with professions such as teaching and law enforcement among the top six occupations at high risk for stress-induced psychological breakdowns. Furthermore, extended working hours have been linked to coronary heart disease (Schulte, 2024). According to the European Social Partners Framework (2004), stress is described as a state accompanied by physical, psychological, or social complaints or dysfunctions, wherein individuals perceive an inability to meet the expectations placed on them due to a mismatch between their capabilities and external demands (Mucci et al., 2015).

Given this context, the present research aims to assess stress levels at an educational institution, a particularly sensitive environment due to the presence of adolescents navigating cultural influences—



including issues related to diet, substance use, and mobile phone addiction. Understanding and addressing stress in such settings is crucial for maintaining the well-being of both educators and students.

2. Materials and Methods

Methodology

The study was done to evaluate the stress levels among personnel of the Agricultural faculty at an institution situated in a rural location. The overall sample size was 30, and the study employed a one-group pre-test post-test design. The study incorporated five air-purifying plants in the meditation area and each faculty member is permitted 30 minutes of meditation in a secluded room adorned with plants such as Areca palms, Pothos, Dracaena, Aglonema, and Snake plant for duration of 4 weeks, from May 5, 2025, to June 5, 2025. The socio-demographic factors and job stress scale were utilized, and feedback was gathered through questionnaires about meditation length, meditation timing, and participants' preferences for plants.

Workplace Stress Scale: The scale is a recognized instrument for assessing the stress levels of persons in the workplace developed by The Marlin Company and the American Institute of Stress. It comprises eight concise statements that delineate common job stressors, facilitating the clear evaluation of an individual's stress level and areas of concern.

3. Results

Socio demographic Variables

Age: The participant's age group were majority in the age group of 31 to 40 with 60% of the participants followed by 20-30 age groups with 17 %, 13% in the age group of 41-50 and 10 % in 51-60 age group.

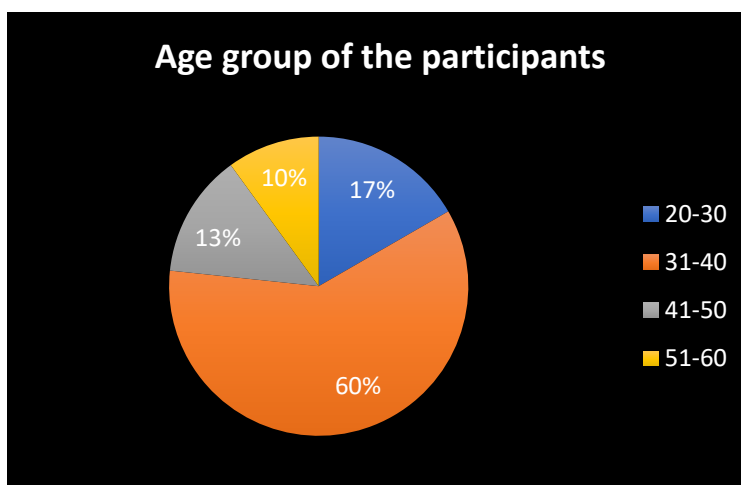


Figure 1. Age group of the participants

Gender: The participant group had a majority of 77% male employees compared to female with 23%.

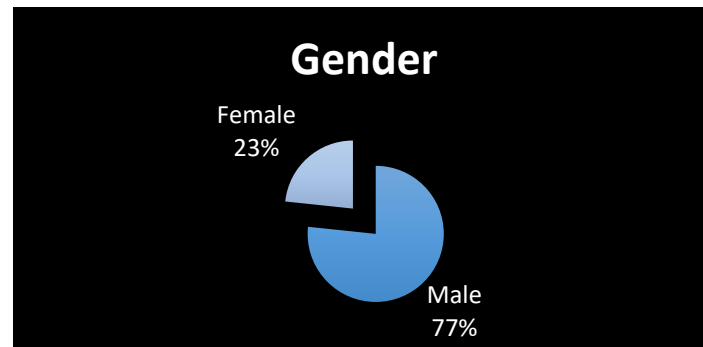
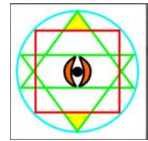


Figure 2. Gender

Place: The employee's resident's in terms of rural, urban and peri -urban background were analyzed and the result indicates 67 % of the participants were residing in rural background, 23% in urban and 10 % in peri-urban sector.

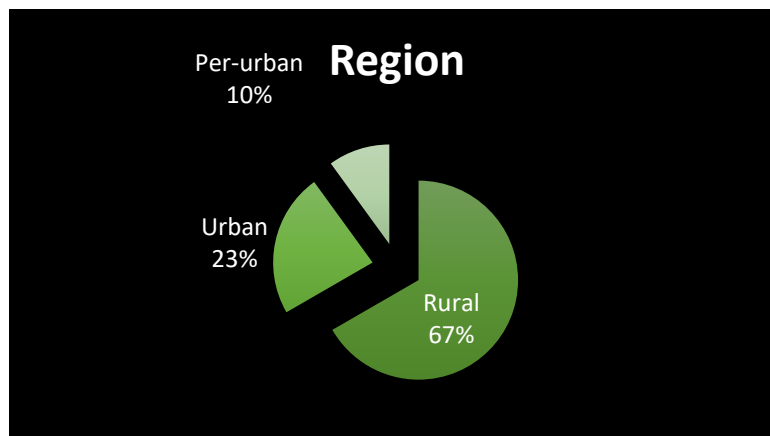


Figure 3. Region

Affiliations: The nature of job indicates 50 % of them in teaching job, 30% in non technical, 13% technical and 7% in non teaching job.

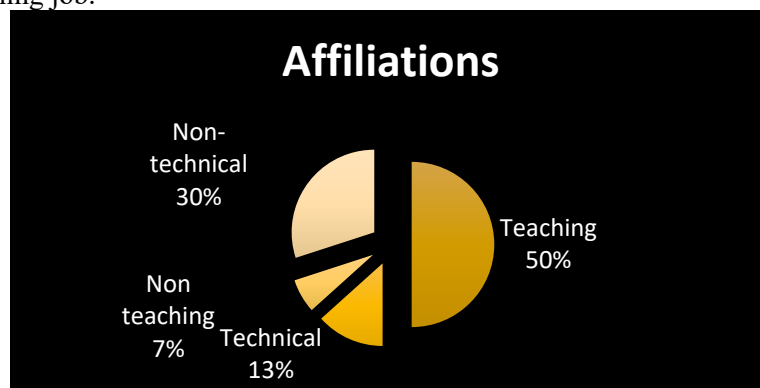


Figure 4. Affiliations

Work Stress Scale

While interpreting the work stress scale before the intervention and after the intervention the following frequency and percentage was obtained (Table 1).

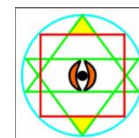


Table 1: Frequency and percentage of stress level before and after meditation with plants intervention.
n=30

Stress level as per work stress scale	Pre-test		Post-test		Interpretation as per scale
	f	%	f	%	
Total score of 15 or lower:	0	0.00	3	10.0	Chilled out and relatively calm.
Total score 16 to 20:	1	3.3	3	10.0	Fairly low.
Total score 21 - 25:	11	36.7	11	36.7	Moderate stress.
Total score 26 - 30:	12	40.0	8	26.7	Severe.
Total score 31 - 40:	6	20.0	5	16.7	potentially dangerous

The stress levels were consistently reduced in all the five scoring compared to the pre-test. And the chilled out and relatively calm category has attained 10 % in the post-test also there is a reduction in the potentially dangerous category from 20.0 to 16.7%.

T-Test analysis assuming equal variance

The pre-test and post-test of the stress level were assessed before and after the intervention and the result indicates there a difference of 3.00 between the pre-test (27.33) and the post test (24.33). Though there is a difference the t value is 1.92, but he values are significant at 0.02 (Table 2).

Table 2: Pre-test and Post-test work stress analysis score.

	Pre-test	SD	Post-test	SD	Diff	t	p
Work stress	27.33	4.72	24.33	5.30	3.00	1.92	0.02

Subjective feedback

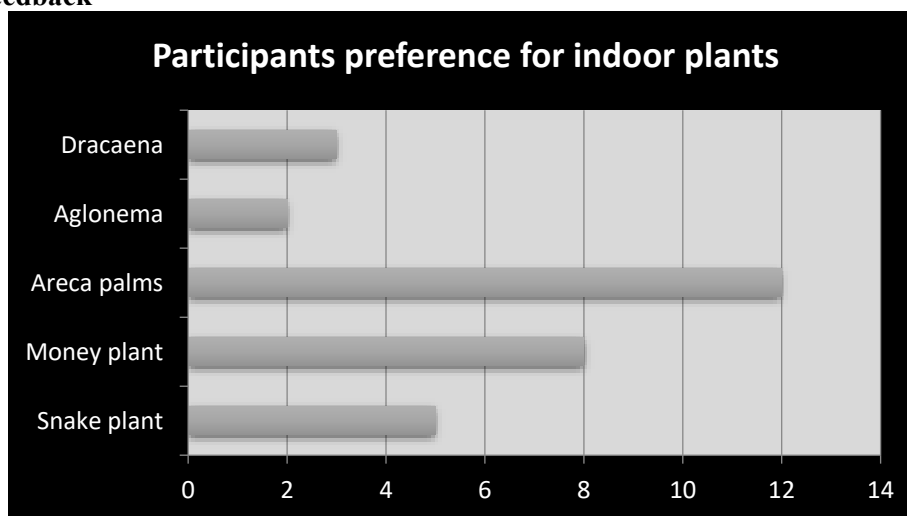


Figure 5. Indoor plant preference by the participants in the meditation room.

The areca palms were the most preferred among the participants followed by the money plant and the snake plant.

Duration of the meditation: The participants were asked to provide feedback for the duration of minutes as break during the working hours. Most of them preferred a 30 minutes break as meditation and none of them preferred for 60 minutes.

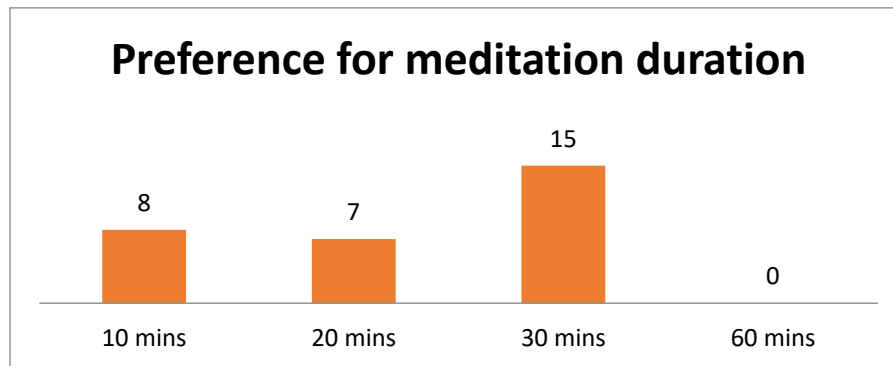
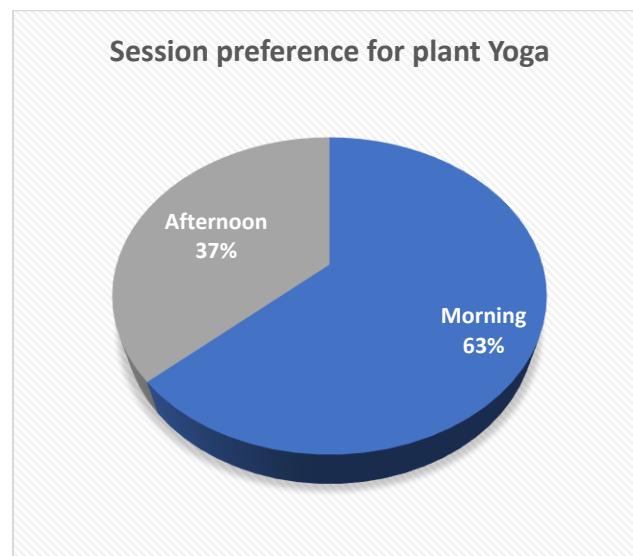


Figure 6: The participant's preference meditation intervention duration in minutes.

Preference for session for the meditation in the working hours

The results indicates participants preferring for 63 % in meditating in morning session and 37 % opted for evening session.



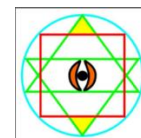
4. Discussion

Workplace stress is frequently recognized as an occupational health issue across industries. It arises from multiple sources, including excessive workload, tight deadlines, interpersonal conflicts, and lack of autonomy. Chronic exposure to such stressors can lead to burnout, anxiety, cardiovascular diseases, and decreased job satisfaction (Tennant, 2001; Mucci et al., 2015). With traditional coping mechanisms proving insufficient for many, attention is shifting toward holistic, nature-based interventions. Two such promising approaches are plant therapy and meditation.

Plant therapy, also known as horticultural therapy or green therapy, involves interaction with plants and green spaces to improve psychological well-being. The biophilia hypothesis suggests that humans have an innate affinity for nature, and incorporating natural elements into the workplace can significantly reduce stress and mental fatigue (Kellert & Wilson, 1993). Several studies indicate that exposure to indoor plants improves psychological well-being and reduces cortisol levels a physiological marker of stress (Bringslimark et al., 2009). Moreover, the presence of plants in workspaces enhances air quality, aesthetics,



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and overall employee morale, contributing to a more restorative and calming environment (Lohr et al., 1996).

In parallel, yoga provides an effective tool for stress management by integrating physical movement, controlled breathing (pranayama), and meditation (dhyana). These practices regulate the autonomic nervous system, reduce sympathetic overdrive, and promote relaxation (Kirkwood et al., 2005). Workplace-based yoga programs have been associated with reduced anxiety, improved emotional regulation, and enhanced resilience (Hartfiel et al., 2011). Regular yoga practice also helps in improving posture, reducing muscular tension, and increasing mindfulness key factors in buffering the impact of stress.

When combined, plant therapy and yoga offer a synergistic approach to workplace stress management. Practising yoga in plant-rich environments can amplify the benefits of both interventions. The greenery enhances the sensory experience of relaxation, while yoga deepens the physiological and psychological calm, creating a holistic environment for stress recovery. This integration not only supports mental health but also fosters a sense of community, well-being, and productivity among employees.

Organizations consider allocating more green spaces, provide time for wellness activities, and cultivate a supportive culture. Future research should focus on the longitudinal outcomes of combined plant–yoga interventions and their scalability across diverse workplace settings.

In conclusion, integrating plant therapy and yoga into workplace wellness programs presents a promising, evidence-based strategy to mitigate stress, enhance employee well-being, and foster a healthier, more resilient work culture.

Evidence-based research

While all the gardening requirements are available at nearby nurseries and online shopping, the only compulsory element, which is unavailable in any store, is your time. It is only this quality time and the dedication, which brings in a successful garden. A house designed with a high ratio of soft scape (plant material) to hardscape (walls) will have an impact on people's well-being and mental health (Kanimozhi Chakrapani et al., 2020).

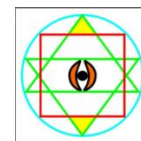
Seshathri, K. (2021) found that People from all walks of life were stressed during the COVID-19 pandemic because of the pressure from work at home. Attending office, cooking, managing house chores, teaching children, continuous work in systems and sharing the computer/laptop and internet created a new atmosphere and stress at home. Women, men and children are involved in gardening as stress reliever. Even one single flower or a vegetable from their home garden excited them in contributing to their psychological well-being.

5. Conclusion

Work pressure is an ever-present issue concerning the institutes, students, co-workers and the individuals. The trouble shooting work related pressure can be released through various nature based therapies through meditations in a plant based environment. The aim of the study introducing the concept of meditating garden in between the working hours for 30 minutes in daily routine to shrink the stress among the teaching faculties has got promising results. The results indicates that there is a reduction in stress scale among the employees and the feedback for the air purifying plants rated areca palms as their best option followed by Pothos species. The recommendation of the research is as welfare for the employees an intervention of meditation with air purifying plant environment can be recommended for the employees to overcome stress for a period of 20 minutes in their daily routine.

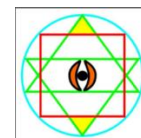


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Enhancing Academic Stress Management through Daily Yoga Practice at School Level

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Abstract: Academic stress is a pervasive issue among school students, often leading to psychological, physical, and emotional strain. This research paper delves into the potential of yoga as an effective intervention to mitigate academic stress. It examines the causes and impacts of academic stress while highlighting the holistic benefits of integrating daily yoga practice into school routines. Drawing from observational data, case studies, and literature reviews, this study presents a practical methodology for implementing yoga-based interventions and evaluates their outcomes. The findings suggest that yoga not only enhances physical well-being but also improves cognitive function, emotional stability, and social behaviour, making it a valuable addition to school education systems.

1. Introduction

Stress is a universal human experience that can severely impact an individual's mental and physical well-being. Among school students, academic stress has become increasingly prevalent due to rising expectations, competitive environments, and poor coping mechanisms. The inability to meet academic demands can result in anxiety, burnout, and a range of psychosomatic symptoms. In this context, yoga emerges as a promising non-pharmacological tool to restore balance in the student's mind and body.

1.1 Definition of Academic Stress

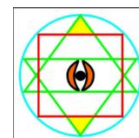
Academic stress refers to the emotional distress experienced by students due to academic demands, such as assignments, exams, performance pressure, and expectations from teachers, peers, and family. It manifests as worry, fear of failure, and psychological fatigue.

1.2 Importance of Managing Academic Stress

Unmanaged academic stress negatively affects students' performance and personality development. Effective stress management helps improve academic focus, boosts emotional regulation, fosters social connectedness, and cultivates resilience. Yoga-based interventions are particularly effective because they encompass physical movement, breath control, and mindfulness—all essential components of mental regulation.

2. Causes of Academic Stress

- Excessive academic workload and tight deadlines
- Competitive academic environments
- Unrealistic expectations from family or school
- Lack of time management and organizational skills
- Poor physical health or chronic illnesses
- Negative peer interactions and social bullying
- Inadequate access to academic resources
- Financial burdens like tuition fees



3. Effects of Academic Stress

3.1 Physical Effects: Headaches, gastrointestinal issues, fatigue, insomnia

3.2 Emotional Effects: Depression, anxiety, irritability, mood swings

3.3 Academic Effects: Reduced attention span, procrastination, low motivation

3.4 Social Effects: Withdrawal, conflicts with peers or teachers, lack of social interest

3.5 Long-Term Effects: Burnout, chronic mental health issues, decreased career potential

4. Methodology

This study utilized a mixed-method approach involving:

- Qualitative observations at Ever Bright School, Guduvanchery, where yoga has been integrated into the school schedule for one academic year
- Feedback from 50 students, 10 teachers, and 5 parents using structured interviews
- A comparative assessment of students practicing yoga daily versus a control group without yoga
- Literature review on yoga interventions in educational settings (Khalsa & Butzer, 2016; NCERT, 2015)
- Quantitative measures including stress self-assessment scores and academic performance indicators

5. Results

The analysis indicated that students who practiced yoga daily showed a marked improvement in various domains:

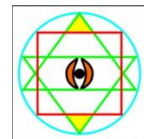
- **Concentration & Academic Performance:** Improved focus in class and better exam outcomes
 - **Emotional Regulation:** Reduction in anxiety symptoms and increased emotional resilience
 - **Sleep Quality:** Students reported deeper and more restful sleep
 - **Social Skills:** Enhanced peer cooperation and fewer conflicts with teachers
 - **Physical Health:** Increased flexibility, stamina, and fewer complaints of headaches and fatigue
- Control group students showed comparatively lower academic performance and higher stress indicators.

6. Conclusion

The incorporation of daily yoga practices into the school curriculum offers a sustainable and low-cost intervention for managing academic stress among students. Yoga not only aids in reducing mental tension but also improves physical endurance and emotional intelligence. Given the growing mental health concerns in educational institutions, school administrators and policymakers should recognize yoga as a compulsory part of life education. With growing global support and India's leadership in promoting International Yoga Day, there is a compelling case for adopting yoga in school systems to cultivate balanced, healthy, and mindful students.

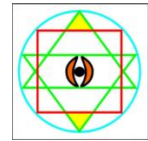


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Improving Pulmonary Health in Undernourished Rural Adolescents through Integrated Yoga and Satvik Diet Practices

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Abstract: This quasi-experimental study examines how combined yogic practice modules and a Satvik diet affect pulmonary function among underweight rural adolescent boys. Fifty male participants (ages 14–16, BMI < 18.5 kg/m²) underwent a 6-week intervention consisting of structured yoga asanas, pranayama, and relaxation techniques three days per week, combined with a Satvik dietary regimen emphasizing plant-based whole foods and unprocessed dairy. Pre- and post-intervention assessments using a spirometer measured tidal volume, vital capacity, forced vital capacity, forced expiratory volume in one second, peak expiratory flow rate, and minute ventilation. Paired t-tests revealed statistically significant improvements ($p < 0.01$) across all pulmonary parameters. These findings corroborate previous evidence that yoga enhances respiratory muscle strength and lung capacity and suggest that coupling it with an anti-inflammatory, nutrient-dense Satvik diet may amplify benefits. This culturally tailored intervention offers a low-cost, scalable model to improve adolescent lung health in under-resourced rural settings.

Keywords: Yogic Practices, Satvik Diet, Underweight, Rural Adolescents, Lung Function, Spirometry

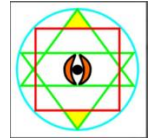
1. Introduction

Context and Significance

Underweight adolescents, particularly in rural India, face numerous health challenges stemming from inadequate nutrition, limited physical activity, and a lack of structured healthcare interventions. One often-overlooked concern is compromised respiratory function, which can significantly impact a child's overall development. Poor lung capacity and inefficient breathing patterns not only hinder physical endurance but also affect immune resilience and cognitive performance. Addressing this issue requires culturally sensitive, low-cost, and scalable interventions that enhance pulmonary health while being accessible in resource-limited settings.

Yoga and Pulmonary Health

Yoga, an ancient Indian discipline that combines physical postures (asanas), controlled breathing (pranayama), and relaxation techniques, has shown promising results in improving respiratory function. Scientific studies have demonstrated that regular yogic practice leads to improved lung volumes, including increased forced vital capacity (FVC), forced expiratory volume in one second (FEV₁), and peak expiratory flow rate (PEFR) 1,2. Pranayama, in particular, enhances the strength and efficiency of respiratory muscles, promotes diaphragmatic breathing, and reduces sympathetic overactivity 3,4. It also improves thoracic compliance and alveolar ventilation, leading to enhanced oxygenation of tissues. Clinical trials and meta-analyses have confirmed the efficacy of yoga in diverse populations, including healthy individuals, asthmatics, and patients with chronic obstructive pulmonary disease (COPD) 5,6. Moreover, yoga's meditative aspects help reduce stress-related respiratory restrictions, contributing to improved autonomic balance and breath control.



Satvik Diet Benefits

The Satvik diet, rooted in yogic philosophy, emphasizes the consumption of pure, wholesome, and easily digestible foods such as fruits, vegetables, legumes, sprouted grains, unprocessed dairy, and honey. It eliminates tamasic (stale or impure) and rajasic (over-stimulating) foods. Scientific reviews suggest that Satvik diets can reduce systemic inflammation, enhance gut microbiota diversity, improve glycemic control, and promote overall metabolic balance ^{7,8}. These factors indirectly contribute to respiratory efficiency by minimizing oxidative stress and improving immunity.

Rationale and Objective

While numerous studies have independently examined the benefits of yoga and vegetarian diets, there is a lack of integrative studies assessing the combined impact of yogic practices and Satvik dietary intervention on respiratory parameters in underweight rural adolescents. This study aims to evaluate the synergistic effects of a structured yogic module alongside a Satvik diet on selected lung function parameters in this vulnerable population.

2. Methodology

1. Demographics & Inclusion

- N=50 male adolescents (14–16 years), BMI <18.5.
- Schools in rural Tamil Nadu; screened for absence of respiratory or chronic disease.
- Consent from guardians, assent from participants.

2. Recruitment & Sampling

- Cluster sampling via school-based health screening.
- Exclusion: recent respiratory infection, regular yoga or athletic training.

3. Ethical & Sociocultural Context

- Ethical clearance from university .
- Culturally adapted interventions with input from local educators and nutritionists.

4. Baseline Characteristics

- Mean age, BMI, socioeconomic status, baseline physical activity assessed via questionnaire.

5. Intervention Details

- **Yoga Module:** Daily 45-minute sessions (3× per week) including Surya Namaskar, Bhujangasana, Tadasana, Pranayama and Shavasana.
- **Dietary Protocol:** Fresh, local produce, legumes, grains, unprocessed dairy, honey; meals twice a day; no processed/tamasic foods.

6. Compliance Monitoring

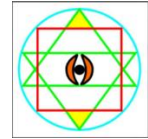
- Daily attendance checklist.
- Food diaries reviewed weekly; local food logs.

7. Spirometry & Data Collection

- Calibrated digital spirometer used by trained technicians. Measured TV, VC, FVC, FEV₁, FEV₁/FVC, MV, PEF_R.
- Pre- and post-test values; two trials per parameter; best recorded.

8. Statistical Analysis

- Data coded and analyzed using SPSS.



3. Results

The objective of the study was to assess the impact of structured yogic practices combined with a Satvik diet on selected lung function parameters in underweight rural school boys over a 6-week intervention period. Lung function was evaluated using calibrated digital spirometry, and the following variables were recorded: Vital Capacity (VC), Forced Vital Capacity (FVC), Forced Expiratory Volume in one second (FEV₁), Peak Expiratory Flow Rate (PEFR), and Tidal Volume (TV).

Pre- and post-intervention values were compared using paired sample t-tests. The results revealed a statistically significant improvement ($p < 0.01$) across all measured pulmonary parameters in the experimental group following the intervention.

Table 1: pre and post-intervention

Parameter	Pre-Test Mean \pm SD	Post-Test Mean \pm SD	% Change	p-value
Vital Capacity (VC)	2.10 \pm 0.28 L	2.61 \pm 0.25 L	+24.3%	< 0.001
Forced Vital Capacity	2.02 \pm 0.30 L	2.54 \pm 0.26 L	+25.7%	< 0.001
FEV ₁	1.86 \pm 0.27 L	2.32 \pm 0.24 L	+24.7%	< 0.001
PEFR	275.2 \pm 31.5 L/min	361.7 \pm 34.2 L/min	+31.4%	< 0.001
Tidal Volume (TV)	0.42 \pm 0.06 L	0.53 \pm 0.07 L	+26.2%	< 0.01

Table 1 presents the pre- and post-intervention mean scores and standard deviations for selected pulmonary function parameters among underweight rural school boys who underwent a 6-week yogic practice package combined with a Satvik diet.

The parameters assessed include Vital Capacity (VC), Forced Vital Capacity (FVC), Forced Expiratory Volume in one second (FEV₁), Peak Expiratory Flow Rate (PEFR), and Tidal Volume (TV). All variables demonstrated statistically significant improvements 0.05, indicating a strong positive effect of the intervention on lung function.

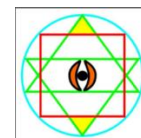
- Vital Capacity (VC) increased from a mean of 2.10 \pm 0.28 L to 2.61 \pm 0.25 L, reflecting a 24.3% improvement, which suggests enhanced lung volume and thoracic expansion.
- Forced Vital Capacity (FVC) improved by 25.7%, indicating better forced expiratory performance, likely due to strengthened respiratory muscles.
- FEV₁, a key indicator of airway function, increased by 24.7%, implying improved airflow and reduced resistance during exhalation.
- PEFR, which measures the maximal flow rate during forced expiration, rose from 275.2 \pm 31.5 L/min to 361.7 \pm 34.2 L/min (a 31.4% increase), suggesting improved expiratory power and muscular endurance.
- Tidal Volume (TV) showed a significant increase of 26.2%, indicating deeper, more efficient breathing patterns during resting respiration.

4. Discussion

Our findings demonstrate that combining yogic practices with a Satvik diet significantly enhances key pulmonary functions in underweight adolescents. This is consistent with prior literature showing that yoga training improves lung volumes and respiratory muscle strength^{1,2,3,5,13}. Yoga's emphasis on diaphragmatic expansion and breath regulation through practices like pranayama likely promotes greater



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thoraco-abdominal mobility and ventilatory capacity 14,17. The Satvik diet may have further amplified these benefits through its anti-inflammatory, antioxidative, and metabolic regulatory effects 10,11,12,16. Diets rich in phytonutrients, soluble fiber, and unprocessed dairy products can reduce systemic inflammation, positively influencing cardiovascular and pulmonary efficiency 9,12. Although evidence directly connecting vegetarian-style or Satvik diets to lung function is still emerging, these results suggest a synergistic impact of dietary and lifestyle changes that warrants deeper exploration 8,10,18. A key strength of this study is its implementation of a culturally congruent wellness intervention in a rural Indian school context. High adherence to yoga and the Satvik diet was achieved through alignment with local customs and available food practices, improving the intervention's feasibility and scalability 6,20. However, the study has limitations. It lacked a control group with either yoga or diet isolated, making it difficult to determine the relative contribution of each component. Additionally, the duration was short (6 weeks), and outcomes were limited to physiological metrics without long-term follow-up. Future research should involve randomized controlled trials (RCTs) to isolate and compare the independent and combined effects of diet and yogic practices, including female participants and broader health outcomes such as academic performance, psychosocial wellbeing, and immune function 15,16. Traditional yogic techniques with a Satvik diet shows promising results in improving lung function in underweight adolescents and aligns with global efforts promoting holistic, non-pharmacological, and culturally appropriate health interventions 4,19.

5. Conclusion

This study indicates that a six-week intervention combining structured yoga and a Satvik diet significantly improves pulmonary function parameters in underweight rural adolescents. By harnessing traditional yogic breathing techniques and nutrient-dense, plant-based nutrition, the program offers a low-cost, culturally appropriate approach to enhancing respiratory health. These findings support the integration of holistic lifestyle interventions into adolescent school health programs to combat undernutrition and poor lung capacity. Future research should validate these results through randomized controlled trials with longer follow-up and diverse populations.

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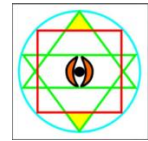
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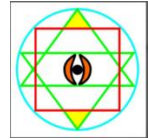


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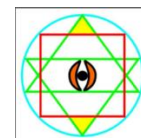
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The Effect of Yogic Practice on Enhancing Mindful Attention among Adolescent Girls

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Abstract: The present study explores the effect of yogic practices on enhancing mindful attention among hundred adolescent girls aged 13 to 16 years studying IX standard in Sri Sarada Vidyalaya Girls' Higher Secondary School in Salem, Tamil Nadu. The research employed a Control group and Experimental group in its experimental design, Using the Mindful Attention Awareness Scale (MAAS) to assess levels of mindful attention, the study implemented an intervention in which participants underwent twelve weeks of yoga practice. The program included selected asanas such as Padmasana, Vajrasana, and Parvatasana, as well as pranayama techniques like Nadi Shodhana and Bhramari, and meditation practices such as Om chanting. Statistical analysis revealed a significant improvement in post-test scores compared to pre-test scores, indicating that yogic practices effectively enhance mindful attention among adolescent girls. The study employed both a control group and an experimental group. These findings suggest that incorporating yoga into school curricula can play a vital role in promoting cognitive health and mental well-being among adolescents.

Keywords: Yoga, mindful attention, adolescents, girls

1. Introduction

Adolescence is a critical period marked by rapid physical, emotional, and cognitive changes. During these years, the ability to sustain attention and remain mindfully aware of one's thoughts and surroundings becomes increasingly important for academic performance, emotional regulation, and overall well-being. However, modern adolescents often face high levels of stress, distraction, and mental fatigue due to academic pressures, social challenges, and technological influences. As a result, there is a growing interest in interventions that can help improve cognitive skills and mental health among adolescents.

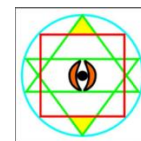
Yoga, an ancient discipline originating in India, offers a holistic approach that integrates physical postures, breath regulation techniques and meditation practices. Recent research has shown that yogic practices can enhance cognitive functions, reduce stress, and promote mindfulness. Mindful attention, defined as the capacity to remain focused on the present moment with awareness and without judgment, is particularly crucial for adolescents navigating the challenges of this developmental stage.

Incorporating yoga into school settings has been proposed as an effective strategy for improving students' mental health and cognitive abilities. Studies conducted in recent years suggest that yoga interventions can enhance mindful attention, leading to better concentration, emotional balance, and academic performance among adolescents. However, there is a need for further research focusing specifically on adolescent girls, who often experience unique stressors and emotional fluctuations during this period.

The present study seeks to examine the effect of yogic practices on enhancing mindful attention among one hundred adolescent girls studying in government-aided schools in Salem. By exploring the potential benefits of yoga as a cognitive enhancement tool, This research aims to contribute valuable insights into integrating yoga practices into educational settings to promote adolescents' mental and cognitive well-being. In recent years, there has been growing interest in exploring the effects of yoga on mindfulness and cognitive functions among adolescent girls. Singh and Kumari (2022) investigated the impact of yoga-based interventions on attention and emotional regulation in adolescent girls aged 13–17 years. Their



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findings revealed significant improvements in sustained attention and a reduction in anxiety levels following eight weeks yoga program incorporating asanas, pranayama, and mindfulness meditation.

Similarly, Patel et al. (2023) conducted a study on the role of school-based yoga programs in enhancing mindfulness and academic engagement among adolescent girls in urban schools. Their results showed that participants who practiced yoga regularly reported higher levels of mindful awareness and improved classroom concentration compared to those who did not engage in yoga practices.

Mishra and Rani (2024) examined the benefits of specific yogic techniques such as om chanting meditation and breath awareness on cognitive flexibility and mental focus in adolescent girls. Their study highlighted that girls who practiced these techniques demonstrated better performance in tasks requiring sustained attention and mental clarity.

A recent study by Gupta and Sharma (2025) explored the relationship between regular yoga practice and mindful attention among adolescent girls in government-aided schools. Utilizing the Mindful Attention Awareness Scale (MAAS), they found that girls participating in daily yoga sessions exhibited significantly higher levels of present-moment awareness and reduced distractibility compared to their peers who did not practice yoga.

Objectives of the Study

- To assess the levels of mindful attention among adolescent girls using the Mindful Attention Awareness Scale (MAAS).
- To implement a twelve-week yogic intervention program including asanas, pranayama, and meditation practices.
- To examine the effect of yogic practices on enhancing mindful attention among adolescent girls.
- To compare pre-test and post-test scores between the control group and the experimental group to determine the efficacy of yogic practices.
- To explore the potential for integrating yoga practices into school curricula for promoting adolescents' cognitive and mental well-being.

2. Methodology

Subjects for the study

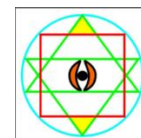
To achieve the purpose of the study, one hundred adolescent girls studying in IX standard were randomly selected from Sri Sarada Vidyalaya Girls' Higher Secondary School, Salem, Tamil Nadu, India. Their ages ranged between 13 and 16 years.

Variables

The Mindful Attention Awareness Scale (MAAS) is a widely used measure in social science research.

Methods

The purpose of the study was to investigate the effect of yogic practice on enhancing mindful attention among adolescent girls. A randomized group design consisting of a control group and an experimental group was used. The subjects, all studying in IX standard, were randomly assigned to two equal groups of fifty each, designated as the control group and the experimental group. The experimental group undertook yoga practice for thirty minutes, twice a day, over a period of twelve weeks. The control group did not engage in any yoga practice and continued with their routine daily activities.



Statistical Analysis

The data was collected both before and after the twelve-week yoga training. An independent sample t-test was conducted to compare the pre-test and post-test scores between the control and experimental groups. The level of significance was set at 0.01.

Results and Discussion

The findings revealed that yoga practice had a significant effect on enhancing mindful attention levels among adolescent girls. The experimental group showed significantly higher levels of mindful attention compared to the control group after the intervention.

Tables and Figures

The primary objective of the independent-samples t-test was to examine the differences between the mean scores of the control group and the experimental group among adolescent girls, as presented in Table 1.

Table 1. Showing the mean difference between the control and experimental groups among adolescent girls in their yoga practice on mindful attention.

Mindful Attention	N	Mean	SD	t-value	Significant/NS level
Control Group	50	47.66	18.64	9.83	S(0.01)
Experimental Group	50	76.86	9.67		

Required table value: 2.626 (0.01)

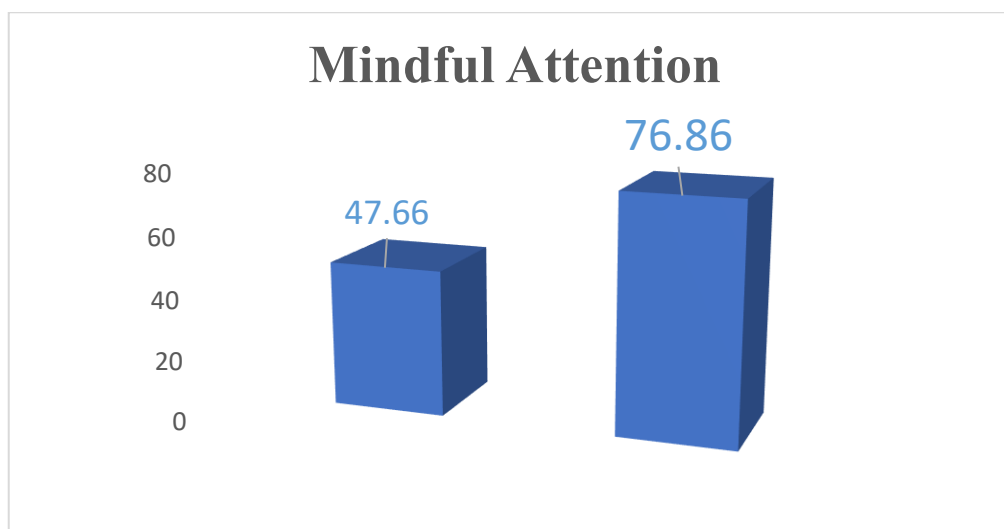
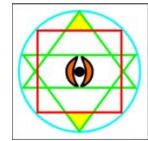


Table 1 reveals that yogic practice has a significant effect on enhancing mindful attention levels between the control group and the experimental group. The mean value of the control group was 47.66, while that of the experimental group was 76.86. An examination of the table indicates that the obtained t ratio for mindful attention was 9.83. This value exceeds the critical value of 2.626 at the 0.01 level of significance (two-tailed) with 98 degrees of freedom, indicating a statistically significant difference between the groups. Yoga practice helps adolescent girls become calmer and more emotionally balanced, allowing them to concentrate better on their studies and remain free from distractions. Through increased focus, mental clarity, and reduced stress, they can approach academic tasks with greater confidence and energy. When girls feel more relaxed and focused, they are more likely to understand lessons, complete assignments effectively, and participate actively in class. Therefore, yoga holds great potential to support academic



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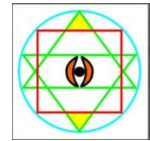
success indirectly by fostering a healthy mental state for learning. These advantages make yoga a valuable practice for promoting both personal growth and educational progress among adolescent girls, contributing to improvements in cognitive functioning, mindful attention, and academic concentration.

3. Conclusion

The present study concludes that yogic practices have a significant positive effect on enhancing mindful attention among adolescent girls. Regular practice of specific asanas, pranayama, and meditation techniques led to improved focus, better emotional balance, and increased present-moment awareness. The results highlight the potential of yoga as an effective tool for promoting cognitive, neuropsychological health, and mental well-being in adolescents. Incorporating yoga into school programs could greatly benefit students' academic performance, cognitive functioning, and overall development. Thus, yoga can be recommended as a valuable intervention to support mindfulness, attention, and neurocognitive health in adolescent girls.

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Integrating Yoga for Mental Clarity and Lifestyle Balance in Modern Living

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Abstract: In the modern era of rapid technological change and constant demands, individuals increasingly seek methods to maintain mental clarity and balance in their lives. Yoga, an ancient practice rooted in physical, mental, and spiritual disciplines, offers effective tools for achieving this equilibrium. This article explores how integrating yoga into daily routines can enhance mental focus, reduce stress, and support sustainable lifestyle transformation. Practices such as asanas, pranayama, meditation, yogic philosophy, and mindfulness in daily life are discussed alongside recent research that highlights yoga's significant role in fostering resilience, emotional health, and overall well-being.

Keywords: Yoga, mental clarity, lifestyle balance, mindfulness, stress reduction, pranayama, meditation, holistic health, emotional well-being.

1. Introduction

Modern living presents numerous challenges, from work pressures to digital distractions, leading many individuals to feel overwhelmed and mentally exhausted. Finding clarity and balance has become crucial for maintaining physical and mental health. Yoga, with its holistic approach, offers practical strategies to achieve this goal. Unlike traditional exercise programs, yoga combines physical postures, breath regulation, mental discipline, and philosophical teachings, providing benefits that extend into all areas of life. This article examines how integrating yoga into everyday routines can promote mental clarity and sustainable lifestyle balance, helping individuals navigate modern life with resilience and inner peace.

2. Yoga Practices for Mental Clarity

Yoga helps clear mental clutter through asanas that release physical tension, reduce stress hormones, and improve blood flow to the brain. Postures such as Tadasana (Mountain Pose), Vrikshasana (Tree Pose), Balasana (Child's Pose), and Sukhasana (Easy Pose) help center the mind and body, promoting relaxation and focus. Scientific studies have shown that even short daily yoga sessions improve attention span, working memory, and cognitive performance. Many practitioners report greater creativity and problem-solving abilities as a result of regular practice.

Pranayama: Breathing Techniques for Balance

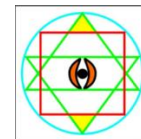
Pranayama, or yogic breathing, plays a crucial role in managing stress and maintaining emotional balance. Techniques like Anulom Vilom (alternate nostril breathing), Bhramari (humming bee breath), Ujjayi (victorious breath), and Kapalabhati (skull shining breath) help regulate the autonomic nervous system, lower cortisol levels, and enhance oxygen supply to the brain. Recent research has confirmed pranayama's effectiveness in reducing symptoms of anxiety, depression, and chronic stress, making it an essential practice for achieving mental clarity and emotional stability.

Meditation for Focus and Inner Peace

Meditation remains a powerful tool for achieving inner peace and mental focus. Various techniques—including mindfulness meditation, breath awareness, loving-kindness meditation, and Trataka (candle-gazing)—train the mind to observe thoughts without judgment and maintain present-moment awareness. Studies between 2022 and 2025 have demonstrated that meditation alters brain structures associated with



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memory, learning, emotional regulation, and stress response. Practicing meditation helps individuals cultivate resilience, enhance problem-solving skills, and improve overall mental health.

Mindfulness in Daily Living

Yoga teaches that mindfulness extends beyond the yoga mat into daily activities. Integrating mindfulness into simple routines—such as eating, walking, or working—helps individuals remain grounded and focused. Mindful living reduces impulsive reactions, fosters emotional intelligence, and improves relationships. When people pay attention to small moments, they cultivate gratitude, patience, and mental calmness, transforming ordinary life into a practice of awareness and peace.

Lifestyle Transformation Through Yogic Philosophy

Yogic philosophy emphasizes holistic living through ethical principles known as Yamas and Niyamas. Values like Ahimsa (non-violence), Satya (truthfulness), Brahmacharya (moderation), and Aparigraha (non-attachment) encourage individuals to lead balanced, meaningful lives. Additionally, maintaining a sattvic lifestyle—including a pure diet, proper sleep, and positive social interactions—supports physical health and mental well-being. Yoga promotes self-reflection and discipline, guiding individuals to make conscious choices aligned with their higher purpose and values.

Yoga for Emotional Well-being

Yoga profoundly influences emotional health. Regular practice reduces symptoms of anxiety, depression, and emotional reactivity. Yogic practices increase levels of gamma-aminobutyric acid (GABA), a neurotransmitter associated with calmness and relaxation. Furthermore, yoga fosters self-compassion and helps individuals cope with life's challenges more gracefully. Integrating yoga into daily life empowers people to handle stress, disappointment, and change with resilience and hope.

Yoga and Physical Health Benefits

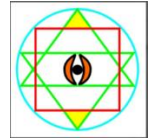
In addition to mental and emotional benefits, yoga offers numerous physical advantages. Asanas improve flexibility, muscle strength, joint health, and posture. Studies show yoga can lower blood pressure, regulate blood sugar, improve heart health, and support weight management. A physically healthy body contributes to a clear and focused mind, creating a positive feedback loop that enhances overall quality of life.

Scientific Evidence Supporting Yoga's Benefits

A growing body of scientific evidence demonstrates yoga's effectiveness in enhancing mental clarity, emotional resilience, and overall well-being. Patel et al. (2023) found that individuals practicing yoga for at least 30 minutes daily reported significant improvements in concentration and stress management. Mishra and Rani (2024) documented that pranayama techniques reduced symptoms of anxiety and boosted cognitive performance. Srinivasan and Prabha (2024) emphasized yoga's role in promoting lifestyle transformation among urban populations, supporting sustainable health practices.

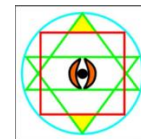
3. Conclusion

Integrating yoga into modern living offers an effective path to mental clarity, emotional stability, and a balanced lifestyle. Through the combination of physical postures, breathwork, meditation, mindfulness, and philosophical teachings, individuals can achieve holistic well-being. In a world where stress and distractions are constant, yoga stands as a timeless, accessible, and practical approach to living with purpose, focus, and inner peace. Embracing yoga as part of daily life empowers individuals to transform not only their physical health but also their minds and spirit, paving the way for sustainable happiness and resilience.



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Yoga as a Complementary Approach for Varicose Veins in Middle aged Men: Randomized Controlled Trail

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Abstract: The main goal is to ascertain whether yoga treatment would help males with varicose veins who have been diagnosed with leg discomfort and oedema. The use of yoga as a supplemental treatment for middle aged men varicose veins is an ongoing, parallel group, randomized study. The study is limited to skin with visible varicose veins (C2) as per the National Clinical Guideline Centre classification of lower limb varicose veins (2004). The subjects will be males in their middle years. It is decided that there are 60 ample sizes in all. In light of the data collected, the participants were split into two groups: the control group (30) and the yoga therapy (30). Homocysteine, Ankle Brachial Index and Job satisfaction are the dependent variables. All of the chosen samples have undergone pre and post test on every outcome measure. Three days a week for a total of twelve weeks, the subjects got yoga therapy instruction for three months. Each session lasted sixty minutes. They will participate in active rest in the control group. The findings demonstrated that, among middle aged men with varicose veins, yoga treatment increased practice intensity and decreased homocysteine levels, ankle brachial index and enhanced job satisfaction at the 0.05 level of confidence. Thus, it may be said that middle aged men with varicose veins benefit from yoga therapy.

Keywords: Yoga therapy, Homocysteine, ABI, Job Satisfaction, Varicose Veins, Middle aged men.

1. Introduction

The lower extremities are typically affected by varicose veins, a common chronic venous condition characterised by dilated, convoluted and elongated superficial veins. Incompetent valves cause venous insufficiency which results in retrograde blood flow and elevated venous pressure (Eberhardt & Raffetto, 2005). Leg discomfort, heaviness, oedema, skin discolouration and in more severe cases, ulceration are typical symptoms. Although varicose veins are frequently thought of as a cosmetic concern, they can seriously reduce functional mobility and quality of life, particularly in middle aged people who lead sedentary lives or have jobs requiring a lot of standing (Rabe et. al., 2010).

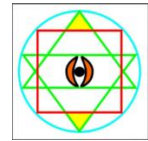
Compression treatment, medication, sclerotherapy and surgical procedures such vein stripping or endogenous ablation are all considered standard care approaches for varicose veins (Gloviczki et. al., 2011). These techniques, however, may be expensive, intrusive or linked to recurrence. In recent years, yoga therapy has emerged as a promising supplement treatment option for the psychological and physiological factors that underlie varicose veins.

Yoga, a mind-body technique that has its origins in Indian philosophy, places a strong emphasis on breathing exercises (pranayama), physical posture (asanas), and contemplative awareness (dhyana). It has been demonstrated that these techniques enhance venous return, lymphatic drainage, muscle pump activity and circulation (Sinha et. al., 2013). Asanas that encourage inversion and raise the legs above the heart, such Sarvangasana (shoulder stand), Pawanmuktasana (wind-relieving position) and Viparita Karani (legs-up-the-wall pose), help venous blood flow and reduce limb pressure. Additionally, pranayama enhances autonomic control and lowers sympathetic arousal which indirectly improves vascular tone and function (Telles et. al., 2012).

Despite these encouraging signs, there is currently no scientific data supporting yoga therapy's efficacy in treating varicose veins in particular. In order to assess the effects of a structured yoga treatment program



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on venous symptoms, leg pain and quality of life in middle aged men with primary varicose veins the current randomised controlled trial (RCT) was conducted.

2. Methods and Materials

Study Design

In order to assess the impact of yoga intervention on exercise capacity and systemic inflammation in individuals with chronic venous insufficiency with varicose veins a randomized controlled experiment was conducted. Patients with CVI-related oedemas (CEAP class3) or varicose veins (CEAP clinical class C2) were enlisted (Carman et. al., 2019).

Participants

Ads at neighbourhood clinics and community centre were used to find participants. Participants in the research had to be between the ages of 30 and 60, have a clinical diagnosis of varicose veins or chronic venous insufficiency and be able to attend those yoga sessions. Participants were divided into two groups, one for yoga therapy and one for control group, using a computer-generated random number sequence. To guarantee a fair distribution of these variables across the two groups, randomisation was stratified by sex and age. Every participant gave written informed permission and before to the study's start, the procedure was approved by the Institutional Review Board. At its meeting of February 20, 2022, the study was reviewed and approved by the Meenakshi Academy of Higher Education and Research Institutional Ethics Committee, which is considered to be a university. MMCH/RI/PhD/01/JAN/23 is the reference number for the Institute Ethics Committee clearance certificate. The experiment is filed with the CTRI with registration number CTRI/2023/05/052928. These exclusion criteria were authorised by the Institutional Ethics Committee in order to safeguard participants welfare and preserve study ethics.

Selection Criteria

By completing the written consent form, participants had to indicate that they were willing to take part. The CEAP classification (Clinical, Etiological, Anatomical and Pathophysiological) was used to diagnose varicose veins, and symptoms were classified as C2 (visible varicose veins) (Carman et. al., 2019). If a prospective participant had already engaged in yoga or other regular fitness regimens, they were disqualified. A thorough physical examination performed by certified medical specialists established eligibility to participate in yoga treatment. People with significant illnesses or disorders, tumours, blood clotting problems, active clinical surgery, long-term use of anticoagulant medications and excessive blood pressure were all excluded. Additionally, those who failed to sign the permission form were not allowed to participate in the study.

Intervention

A structured 12-week yoga curriculum was implemented for the yoga therapy group. Three times a week, participants attended yoga session lasting sixty minutes each. Based on previously conducted research, the yoga program comprised a number of asanas or physical positions, including Salabhasana, Dhanuarsana, Paschimottanasana, Viparita Karan, Sarvangasana, Padsanchalanasana, Utthanpadasana, Chakra padasana and Setu bandhansana. Additionally included were pranayama (controlled breathing techniques) such as Nadisuddhona and Kapalbhata. Three times a week at home, participants were taught to do yoga for fifteen minutes, deep relaxation for ten and OM meditation for ten. Check-ins every week tracked developments and resolved issues. Without any yoga intervention, the control group carried on with their regular routine.

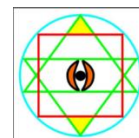


Table 1: Details of Yoga Intervention

Standard Program	List of Practices	Frequency	Duration
Sukshma Vyayama	Finger, wrist, elbow loosening exercises, shoulder rotation, toe ankle, stretch, ankle rotation, knee crack & bending, full butterfly pose	3 times each practice	15 min, three days per week, 12 weeks
Asana	Viparitarani, Sarvangasana, Tadasana, Utthanpadasana, Chakra padasana, Sanchalanasana, Salabhasana, Dhanurasana, Paschimottanasana, Bhujangasana	5 times each asana	30 min, three days per week, 12 weeks
Pranayama	Deep breathing techniques, Nadishodhana pranayama, Sectional Breathing	20 rounds each	15 min, three days per week, 12 weeks

Control Group

Standard care instructions, such as compression stocking and guidance on physical activity in accordance with current standards were given to the control group.

Outcomes

The primary outcome measure was changes in homocysteine from baseline to 12 weeks. The secondary outcomes included Ankle brachial Index and Job Satisfaction questionnaire for varicose veins middle aged men.

Serum homocysteine measurement

Using a validated enzymatic assay, serum homocysteine levels were assessed both at baseline and throughout the 12-week intervention period. Following an overnight fast, participants venous blood samples were taken. After centrifuging the sample, the prior to analysis, the separated serum was stored at 80 degree Celsius. Commercially available enzyme test kit was used to assess homocysteine levels in accordance with the manufacturers instructions (such as the Abbott Homocysteine test).

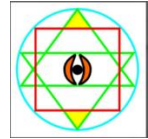


Table 2: The impact of yoga therapy on middle aged men homocysteine levels compared to the control group

Group	Homocysteine		
	Mean	SD	Paired t test and p value
YTG	5.77	2.22	t=14.22 p=0.000 ***
CG	-0.03	0.03	t=0.250 p= 0.804(N.S)
Independent t value and p value	t = 13.590, p= 0.000 ***		

Note: *** - p<0.001 Level of Significant, N.S – Not Significant

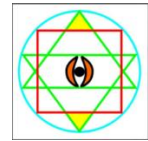
The results of the present study indicate that yoga therapy has a significant impact on reducing homocysteine levels among individuals with varicose veins. Participants in the yoga therapy group showed a marked decrease in homocysteine, with a mean reduction of 5.77 (S.D = 2.22), which was determined to be quite important (t=14.22, p=0.000). In contrast, the control group demonstrated a negligible change (mean=-0.03, S.D=0.03), which was statistically non significant (t=0.205, p=0.804). Furthermore, between group comparison using an independent t test showed a significantly significant difference (t=13.590, p=0.000), further supporting the effectiveness of yoga therapy in improving biochemical markers associated with vascular dysfunction. Homocysteine is recognized as a risk factor for endothelial damage and venous insufficiency and its reduction through yoga practices may reflect improved vascular health and decreased oxidative stress. These results imply that yoga therapy can serve as a beneficial complementary approach in the management of varicose veins by targeting underlying biochemical imbalances.

Table 3: Yoga therapy's impact on middle aged men ankle brachial index in comparison to the control group

Group	ankle_brachial_index		
	Mean	SD	Paired t test and p value
YTG	0.26	0.10	t=13.761 p=0.000 ***
CG	-0.02	0.05	t=2.184 p= 0.037 *
Independent t value and p value	t = 13.420, p= 0.000 ***		

Note: * - p<0.05, *** - p<0.001 Level of Significant

The findings of the study demonstrate that yoga therapy significantly improved men their middle years with varicose veins and their ankle brachial index. The yoga group shoed a notable increase in ABI, with a mean effect score of 0.26 (S.D=0.10), which was highly significant (t=13.761, p=0.000). This suggests a marked enhancement in peripheral circulation and vascular function following the yoga intervention. In contrast,



the control group exhibited a slight decline in ABI (mean = -0.02, S.D=0.05), though this shift was statistically significant ($t=2.184$, $p=0.037$), it reflects a minimal and potentially clinically insignificant deterioration in vascular status without intervention. The between group comparison using an independent t test revealed a highly significant difference in effect scores ($t=13.420$, $p=0.000$), strongly favoring the yoga group. These findings imply that yoga treatment works well in improving arterial blood flow and peripheral vascular health, as reflected by improved ABI scores and may serve as a valuable non-pharmacological intervention in managing varicose veins and associated circulatory issues in middle aged men.

Table 4: Effectiveness of yoga therapy on middle aged men job satisfaction:
A comparison of the control group and yoga

Group	Job_Satisfaction		
	Mean	SD	Paired t test and p value
YTG	36.73	7.64	$t=26.341$ $p=0.000$ ***
CG	0.13	3.56	$t=0.194$ $p=0.847$ (N.S)
Independent t value and p value	$t=23.550$, $p=0.000$ ***		

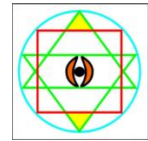
Note: *** - $p<0.001$ Level of Significant, N.S – Not Significant

The results of the study indicate a significant positive effect of yoga therapy on middle aged men job satisfaction. Participants in the yoga group showed a substantial improvement in job satisfaction levels, with a mean effect score of 36.73 (S.D=7.64) and this change was found to have a high level of statistical significant ($t=26.341$, $p=0.000$). In contrast, the control group demonstrated only a minimal change in job satisfaction (mean=0.13, S.D=3.56), which was not statistically significant ($t=0.194$, $p=0.847$). The between group comparison using an independent t test further confirmed a substantial difference between the control and yoga group ($t=23.550$, $p=0.000$), clearly favoring the effectiveness of yoga therapy. These findings suggest that yoga practices contribute not only to physical and physiological improvements but also to psychological well being and workplace satisfaction. The marked increase in job satisfaction among those who underwent yoga therapy may be attributed to improved mental clarity stress reduction, emotional balance and general wellbeing highlighting the comprehensive advantages of yoga as a therapeutic approach in occupational health.

3. Discussion

The current study sought to assess yoga therapy efficacy in managing varicose veins among middle aged men through three key parameters: homocysteine levels, ankle brachial index and job satisfaction. The results revealed statistically and clinically significant improvements in all three domains among participants in the yoga therapy in contrast to the control group.

A marked reduction in homocysteine levels was observed in the yoga therapy group (mean=5.77, S.D=2.22) with a highly significant paired t value ($t=14.22$, $p=0.000$). In contrast, the control group showed no meaningful change ($p=0.804$), and the between group analysis confirmed a highly significant difference ($t=13.590$, $p=0.000$). Elevated homocysteine is a known risk factor for endothelial dysfunction, venous thrombosis and inflammation all of which are implicated in the pathogenesis of varicose veins. The



significant reeducation in homocysteine through yoga practices may be attributed to the calming effects of pranayama, improved circulation through asanas and overall reduction in oxidative stress. Similar results have been published by Pradhan et. al., (2012), where regular yoga practice led to reduced homocysteine levels and improved cardiovascular markers in middle aged adults. Furthermore, Innes et. al., (2005) emphasized the role of yoga in reducing biochemical markers linked of vascular disease, including homocysteine, through Mechanisms of stress reduction and improved metabolic function.

The ankle brachial index a critical indicator of peripheral vascular health significantly improved in the yoga therapy group (mean=0.26, S.D=0.10) with a t value of 13.761 and $p=0.000$. On the other hand, the control group had a marginally significant but statistically significant decline (mean = -0.02, $p=0.37$), which could reflect progressive vascular compromise due to the lack of intervention. The independent t test ($t=13.420$, $p=0.000$) reinforces the superiority of yoga in improving peripheral blood flow. These findings support the vascular benefits of yoga, which enhances venous return, reduces stasis and improves endothelial function through postures that activate calf muscles and promote circulation. Studies by Bijlani et. al., (2005) and Satyapriya et. al., (2013) have similarly reported improvements in hemodynamic parameters and ABI scores following yoga interventions in patients with cardiovascular risks.

In addition to physiological improvements, a significant enhancement in Job satisfaction was note in the yoga therapy group (mean=36.73, S.D=7.64, $t=26.341$, $p=0.000$), with there is no discernible difference in the control group ($p=0.847$). The between group comparison ($t=23.550$, $p=0.000$) indicates a strong effect of yoga on psychological and occupational well-being. This improvements can be linked to better mental focus, reduced stress and enhanced emotional resilience, commonly associated with consistent yoga practice. Woodyard (2011) and Ross & Thomas (2010) have emphasized the part yoga plays in improving mood, reducing work related stress and enhancing quality of life all of which can contribute to better job satisfaction and overall productivity.

When together, these findings clearly showed that yoga therapy is a successful non pharmacological intervention for managing varicose veins by addressing both physiological and psychological dimensions of the disease. The significant reduction in homocysteine, improvement in ABI and enhancement in job satisfaction highlight the holistic nature of yoga, integrating body, breath and mind. The study supports the growing body of evidence advocating for yoga as a therapeutic strategy in vascular and occupational health, particularly for populations at risk of chronic venous insufficiency.

4. Conclusion

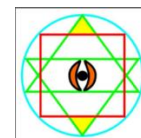
The present study provides strong evidence supporting the effectiveness of yoga therapy as a holistic intervention in the management of varicose veins among middle aged men. The significant reduction in homocysteine levels indicates a positive biochemical shift, suggesting reduced inflammation, oxidative stress and endothelial dysfunction all of which are crucial in the progression of venous disorders. The notable improvements in ankle brachial index further reflects enhanced peripheral circulation and vascular function, demonstrating the physiological benefits of yoga practices such as asanas, pranayama and relaxation techniques in in promoting venous return and preventing blood stasis. Beyond physiological and occupational benefits of yoga, likely due to reduced stress, improved mood and enhanced mental clarity.

5. References

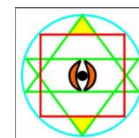
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The Impact of Neuro-Linguistic Programming (NLP) and Yoga Interventions on Stress Levels in Mothers with Adolescent Children

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Abstract: Stress occurs when parental expectations are higher than the real and expected resources. Adolescence is a vital period, which makes every new stage of development with anxiety, especially for mothers of teenagers. Yoga is a holistic approach used as an alternative medicine for preventing and healing different diseases, and "NLP is an expressive and compelling model of individual interaction and experience that permits [the practitioner] to make several fundamental and long-lasting changes quickly and easily". We aimed to find out whether there would be any significant correlation on Hamilton Anxiety Rating scale (HAM-A, cortisol and heart rate due to yoga practice with NLP intervention among anxiety mother's having adolescent child. The Subject were mothers having adolescent child (14-18years). The total number of sample size determined to be 90. Based on the information obtained, subjects were randomly divided into yogic practice with NLP group (30), yoga group (30) and control group (30). Pre and post-test were carried out for all variables viz. Cortisol level in the serum, Hamilton Anxiety scale and heart rate. The study's total duration was 12 weeks. Experimental group received yogic practice 4 days/week and 2 NLP sessions /month/sample. Control group was engaged with active rest. ANOVA Test applied for changes in variable. Yogic practice with NLP training helped to reduce Stress of mother's having adolescent child at 0.05 level of confidence on Parenting Sense of Competence Scale, Cortisol and Heart rate while the response was minimal in case of yogic practice.

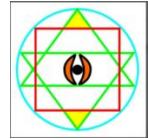
Keywords: Yogic Practices, Neuro linguistic Programming, Parenting Sense of Competence Scale, Cortisol, Heart rate, Mothers of adolescents.

1. Introduction

Stress is a widespread issue in contemporary society and has emerged as a major global public health concern [1]. Today, both parents are often required to work to meet their family's needs. Still, mothers frequently face the added responsibility of caring for children and managing household tasks, which can increase their stress levels [2]. Adolescence is a developmental stage where individuals explore new aspects of themselves and grow on multiple levels such as physically, mentally, socially, and emotionally [3]. Each new developmental stage can trigger anxiety for mothers, as they may worry about their child's behaviour and social growth. According to the DSM-V (APA, 2013)[30], sustained anxiety manifests in indications such as restlessness, fatigue, irritability, muscle tension, and difficulty with sleep or concentration [4]. Coping strategies can be a valuable tool for managing stressful situations, and parents employ various approaches to handle stress [5]. The majority of mothers having stress strongly agreed that visiting a psychiatrist taking vacations and breaks, and having social support are some of the common strategies followed nowadays [6]. Yoga and Neuro-Linguistic Programming (NLP) are two distinct coping strategies that form the foundation of this study. Yoga is a holistic practice often used as an alternative treatment for preventing and addressing various health issues [7]. The traits of the modern lifestyle includes elevated



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levels of stress, anxiety, and sadness. Due to negative effect of medication of drugs researchers are seeking nonpharmacological remedies for anxiety and depression. The factors of self-description, psychological state, and quality of life were all enhanced by yoga practice [8]. Neuro-Linguistic Programming (NLP) works with the subconscious mind to develop cognitive skills. NLP is a psychological method that uses experience to connect language, behaviour patterns, and neurobiology [9]. NLP has been used to treat emotional and anxiety problems in various context, has proven to be beneficial when used in conjunction with other therapeutic approaches [10]. Our previous work reported a positive impact of yoga and combined yoga with NLP on psychological management in mothers of adolescents [11] This study explored the methods for reducing stress and anxiety, improve psychological health condition among mothers having adolescence child through a combination of Yoga with NLP.

2. Materials And Methods

2.1 Study Design:

This was a study which is randomized, parallel group, multiple arm trial with 3 groups

Group A (experimental group 1) : Yoga along with NLP practice

Group B (experimental group 2): Yoga alone

Group C (control group): Active rest

2.2 Sample Size:

The Subjects were mothers' having adolescent children (14-18years). The total sample size (90), was determined using power analysis method [25] Sample size calculation based on prevalence of the previous study [12] was carried out. The subjects were equally divided into three groups of 30 each.

2.3 Inclusion & Exclusion criteria

2.3.1 Inclusion Criteria:

- ✓ Participation in the study and completion of the signed permission form.
- ✓ Mothers having adolescent children (Aged 14-18 years)
- ✓ The participants are mothers, who can verbally communicate, have no hearing problem

2.3.2 Exclusion Criteria:

- ✓ A history of psychosis, mania, brain damage.
- ✓ A History of severe anger, violence, or suicidal thoughts.
- ✓ Active clinically significant gastrointestinal, cardiovascular, hepatic, renal or other major clinically significant disorder/ disease.

2.4 Outcome measurement:

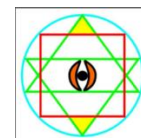
Outcome measures for this study were studied using Hamilton Anxiety scale and determination of Heart rate and estimation of cortisol levels in blood plasma.

Hamilton Anxiety Scale: It includes 14 questions. This questionnaire score accounts from 0-56. Mild anxiety is indicated by a total anxiety score of less than 17, moderate anxiety by score (18 to 24), and severe anxiety by score (25 to 30). According to studies, those who suffer from mental illnesses like depression or anxiety disorder have an aggregate value of anxiety greater than 20 on the HAM-A [17][31].

Heart Rate: It was measured by using a standard pulse oximeter.



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Cortisol: Cortisol level was measured from the plasma of the participants from all the groups (A, B & C). Blood sample was collected at 8 am in empty stomach from all the participants on 0 day and after 90 days of intervention.

2.5 Intervention

Total duration of the study was 12 weeks. Experimental group A received yogic practice 4 days/week and 2 NLP sessions /month/person. Experimental group B received yogic practice 4 days a week. Control group was engaged with active rest. The yoga schedule included Loosening exercise, Cat-Cow Breathing (Marjariasana), Suksma vyama (Vakhsa Sakti Vikasa), Surya Namaskar (Bihar School of Yoga), Yastikasana, Ustrasana, Sashangasana (Child Pose), Matsyasana, Setubandhasana, Bhujangasana, Makarasana, Savasana, Abdominal breathing, Nadi sodhana Pranayama, Bhamari Pranayama, Shitali Pranayama, A-U-M Chanting[Mentally], Yoga Nidra[26-29]. Neuro-linguistic programming techniques mainly included anchoring, de-bursting, and swish technique along with time-line therapy[14-16]

2.6 Data Calculation/Analysis

To check the difference between the groups ANOVA test was used. To compare pre and post-values of the groups paired “t-test” was applied in the calculation. Statistical significance was examined at $p < 0.05$ level.

2.7 Declaration ethical & Ctri clearance

Our study is a combination of both NLP and Yoga. This study is approved from Institutional Human Ethics Committee Meenakshi Medical College Hospital & Research Institute, with Study Reference number MMCH & RI IEC/PhD/02/JAN/23. CTRI Registration Number CTRI/2023/06/053416 [Registered on: 01/06/2023]

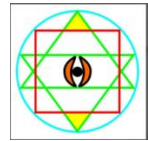
3. Results

Table 1: Comparison of pre and post outcome parameters between the groups

	Yoga with NLP N=30	Yoga Group N=30	Control Group N=30	P Value
Cortisol (mg/dl)				
Pre-intervention	16.82 ± 1.37 ^{NS}	16.98 ± 0.90 ^{NS}	17.16 ± 1.02	0.6
Post- Intervention	14.17 ± 1.91***	14.31 ± 1.58***	16.43 ± 1.38	<0.001
Percentage of Changes (%)	15.76	15.72	4.2	--
Heart Rate (bpm)				
Pre-intervention	102.07 ± 8.48***	96.07 ± 9.07***	94.17 ± 6.77	0.001
Post- Intervention	74.90 ± 8.86***	77.73 ± 14.74***	92.83 ± 6.08)	< 0.001
Percentage of changes	26.64	19.08	1.41	
HAM-A				
Pre-intervention	28.70 ± 2.96 ^{NS}	27.77 ± 2.96 ^{NS}	27.30 ± 3.72	0.238
Post- Intervention	16.67 ± 2.55***	21.70 ± 3.46***	28.30 ± 3.69	< 0.001
Percentage of changes	41.91	21.86	0.35	

Note: * - $p < 0.05$, ** - $p < 0.01$, *** - $p < 0.001$ Level of Significant, N.S. – Not Significant

#bpm- beat per minute, HAM-A – Hamilton Anxiety Scale



The cortisol levels in plasma of the subjects were significantly reduced in both yoga with NLP and yoga groups when compared to the control group. However the cortisol level was almost same in both Groups A and B (ie yoga with NLP and yoga alone). Hence NLP intervention has not made significant change in the reduction of cortisol level of the subjects.

A significant reduction in heart rate was observed with NLP intervention along with yoga group. While the reduction of heart rate was moderately altered in yoga-alone group when compared to the control group.

The Hamilton anxiety scale score was found to be doubled in yoga with NLP group when compared to yoga alone group. However, the score for yoga alone group was found to be moderately significant when compared to the control group.

The percentage changes of cortisol levels in blood plasma was calculated and it was found to be 15.76 and 15.72 respectively for yoga with NLP group and yoga group. The percentage reduction between both groups A and B almost same but was found to be altered significantly when compared to the control group. The percentage changes in heart rate in yoga with NLP group was 26.64 while yoga group was 19.08 *per se*. This proves that the NLP intervention has a significant effect on the heart rate.

The percentage change in the HAM-A Scale indicated a significant improvement in the Yoga with NLP group, with a reduction of 41.91%, compared to a 21.86% reduction in the group receiving only Yoga intervention. This highlights a substantial positive impact on the psychological variable, demonstrating the enhanced effectiveness of combining Yoga with Neuro-Linguistic Programming.

The results are tabulated in the table -1

4. Discussions and Conclusion

This study provides valuable insights into stress and anxiety, both of which reduce the performance of mothers with adolescent children. The findings, supported by previous research[18-20], indicate that combining Yoga and NLP effectively manages stress and heart rate. Yoga, when employed with NLP, effectively reduced anxiety and stress than the application of subjects with yoga alone. The yogic method had influenced the reduction of the hormonal level especially cortisol to reduce stress while NLP works with the subconscious mind. Since stress and anxiety are interrelated, both Yoga and NLP help to address them effectively.

Stress is a state in which the sympathetic nervous system is overactivated, leading to acute or chronic physical, psychological, and behavioural challenges that promote physiological changes[21]. In terms of anxiety, stress is an intense, persistent worry that disrupts daily life, often manifesting through symptoms like panic attacks, physical fear responses, and avoidance behaviours [22].

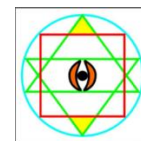
NLP as a psychological approach that helps to overcome challenging situations. NLP creates integration with positive and social psychology and recognize their role in developing brain re-winding and subconscious training technique to overcome stress with anxiety [23].

Yoga, as a comprehensive practice, involves physical poses (asanas), breathing techniques (pranayama), concentration, meditation (dharana and dhyana), and contemplative practices. Physiologically, Yoga helps to counteract the overactivation of the sympathetic nervous system, balancing it with the parasympathetic system.

Yoga is a great Solution for Anxiety and Stress Whereas Neuro Linguistic programming is a recent update on reduction of Stress. This study corroborate with the recent study conducted by Park & Slattery [24]. They explained Neuro Linguistic programming as a great coping strategy for anxiety. Our study result revealed the success of NLP intervention in normalizing the heart rate & HAM-A. NLP brings learning about how individual mind works and that can be changed to improve the quality of individual thereby proving how NLP works as a communication model representing interpersonal and intra personal wellbeing. It further explains as coping strategies for stress among mothers having adolescent children.



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There are many positive responses from this study although this Study needs a refined process viz. more variables can be included, large number of Population to be included in the study and all categories including working and non-working women in comparison to Stress biomarkers.

This paper concludes that both Yoga and Neuro Linguistic programming as a best strategy for reducing Stress and Anxiety among mothers having adolescent children. Hence this technique may be used as a Coping technique for all mothers having adolescent children.

Consent To Publish

All authors agreed to the content of the final paper.

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Competing Interest

No potential conflict of interest was reported by the authors.

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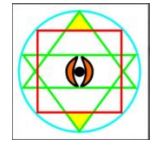
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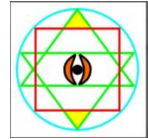
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**Chanting the Breath: A Pioneering Blend of AUM with Yogic Practices to Amplify
Respiratory and Psychological Resilience in Asthma Care**

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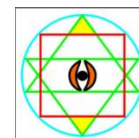
Abstract: Asthma, recognized in ancient Indian medicine as Tamaka Swasa in the Charaka Samhita [1], is a chronic inflammatory airway disease with significant physical and psychological burdens. This heterogeneous disorder presents with variable symptoms and severity, often influenced by environmental and genetic factors. Particularly concerning is adult-onset asthma, which is frequently associated with an accelerated decline in lung function [2,3] manifesting as reduced Forced Expiratory Volume (FEV₁), increased airway remodeling, and greater resistance to standard treatments. This novel study introduces an integrative yogic model combining segmental breathing with different frequency modulation of AUM (OM) Meditation to examine both respiratory parameters and stress resilience. Following GINA 2024 guidelines, twenty adults with mild to moderate asthma were randomly assigned into two groups: a yogic intervention group (n=10) and a control group (n=10), over 12 weeks. The intervention group practiced basic rotations of Sithilikarana Vyayama for joint mobilization and AUM-integrated yogic breathing, targeting upper, middle, and lower lung zones, coupled with different frequencies and modulation of OM Meditation. Pre- and post-assessments included Respiratory Rate (RR), Breath Holding Time (BHT), Perceived Stress Scale (PSS-14), and Body Mass Index (BMI). Results were analysed using paired t-tests with IBM SPSS Statistics Software (V26). Significant improvements were observed in BHT ($t=9.31$, $p<0.001$), RR ($t=10.2$, $p<0.001$), and PSS-14 stress levels ($\chi^2=5.867$, $p=0.032$) in the intervention group, while the control group showed no significant change. Additionally, a shift in BMI classification among participants further highlighted physiological improvements. This study presents a pioneering mind-body framework using the vibrational dynamics of AUM to enhance both respiratory and psychological well-being in asthma care.

Keywords: AUM chanting, PSS-14, Respiratory Rate, Breath Holding Time, Yogic Breathing, Asthma, Stress Reduction, BMI, OM Meditation.

1. Introduction

The word "asthma" originates from the term "aazein" from Greek which translates to shallow, rapid or laboured breathing [4,5]. It is a long-term airway inflammation which involves various cellular entities, elements and materials. This long-term airway inflamed condition heightens its sensitivity, triggering repetitive symptoms like high-pitched breathing sound, struggling for breath, chest discomfort, and dry cough, often noticeable during nighttime or early morning hours.

As of 2024, approximately 262 million people globally are affected by asthma, equating to a prevalence rate of about 3,416 cases per 100,000 people. This condition remains a major health issue, with significant regional variations in prevalence and severity [6]. The prevalence is projected to increase by 100 million by 2025 [7,8]. In India, an estimated 34.3 million people are affected by asthma, constituting 13.09% of the worldwide burden of illness, having 13,200 fatalities reported due to the condition [9,10]. The estimated prevalence among adults in India is between 2-4%, with 1.8% for men and 1.9% for women [11].

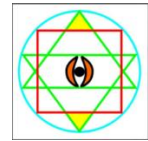


Asthma-related conditions are often under-reported, primarily due to a general underestimation of the disease's signs and symptoms, resulting in a substantial healthcare burden [12]. Asthma significantly increases healthcare costs due to frequent hospitalizations and ongoing treatments, leading to financial burdens on families and healthcare systems. It also negatively impacts the quality of life, restricting physical activity and daily tasks due to symptoms and fear of attacks. While most asthma patients are managed well with treatments like inhaled corticosteroids and long-acting β -agonists, some still suffer from poorly controlled asthma, placing a heavier burden on healthcare systems. These patients require more resources, and their condition is worsened by environmental triggers such as allergens, chemicals, and particulate pollutants, highlighting the unmet need for optimal treatment options. Aerosol-derived nanoparticles also trigger inflammation and exacerbate respiratory conditions like asthma [13]. This highlights the significant impact of environmental factors on asthma management. Environmental factors play a vital role in asthma management by enhancing airway sensitivity, leading to more severe bronchoconstriction in individuals with asthma compared to those without the condition [14]. One study demonstrated that the plant-based compounds that encompasses *Aegle marmelos* (L.) Correa, *Chamaesyce hirta*, *Solanaceae trilobatum*, *Ourel lanata*, *Rough Leucas*, and could be effectively utilized as a biomedicine for asthma [15].

Many individuals with asthma turn to alternative or complementary treatments such as herbal medicine, acupuncture, and homeopathy. Additionally, a significant number of people practice specific breathing techniques to help manage and alleviate asthma attacks. Various studies on breathing techniques have shown that incorporating yogic breathing exercises can significantly improve the condition of asthmatic patients. After practicing 'Om' Chanting, there is an enhancement in the measurements of all respiratory endurance parameters [16]. Significant improvements in various lung functions are observed in individuals with asthma with the effect of pranayama and controlled breathing exercises [17]. This study investigates the effects of a structured yogic practice routine, divided into four stages with varying pitches of OM chanting, on adults with mild to moderate asthma. The findings reveal that participants experienced a reduction in respiratory rate and an increase in breath-holding time. These results emphasize the potential of incorporating yogic breathing techniques and OM chanting as valuable, non-pharmacological adjunct therapies for managing asthma.

2. Materials and Design

In accordance with the Global Initiative for Asthma (GINA 2024) directives, the study included both men and women in early adulthood, aged 30-39 yrs with mild to moderate asthma, residing in and around the Chennai area. The experimental period for the yogic practices group was limited to 12 weeks, with sessions occurring five times per week. All participants were briefed about the aim and qualities of the research and provided consent in writing prior to data acquisition. Those who signed the informed consent form were assigned to a controlled randomized study. Utilizing a computer-generated unpredictable number system, participants were arbitrarily assigned to either the experimental or comparison cohort. Throughout the experiment, all participants were instructed to continue their prescribed treatment. The total sample size was set at 20, with the participants allocated into two identical teams of ten individuals each. First group participated in yogic interventions, while Second group served as the comparison group and did not undergo any interventions. The study focused solely on the independent variable of yoga therapy, with the dependent variables limited to Breath Holding Time and Respiratory Rate. Breath Holding Time using a stopwatch [18] and manual measurement of Respiratory Rate [19] were used to assess the samples before as well as the post of intervention. The respiratory rate (RR) should be manually recorded for a minimum duration of one minute. A paired 't' test was conducted to analyse information within the two cohorts, examining the variables between the intervention and non-intervention groups using SPSS version 26.



2.1 Duration

The experimental period for the yogic practices group was limited to 12 weeks, with sessions occurring three times per week.

2.2 Participants

Participants in the study residing in and around Chennai area between the ages of 30 to 39 were included. 35 participants were screened and 20 were selected finally (who matched the Guidelines of GINA and signed the informed consent) in random as subjects by using a random group sampling method.

2.3 Inclusion Criteria

Individuals who do not smoke and have mild to moderate asthma, as outlined by Global Initiative for Asthma - GINA 2024 recommendations, were included in the research study. The present research was restricted to asthmatic adults of both men and women of early adulthood aged 30- 39 residing in and around Chennai.

2.4 Exclusion Criteria

Obstructive lung condition, Kidney impairment, Metabolic disorder, recent respiratory infections (within the past two months), and engagement in any regular exercise or Yogic practices were excluded.

2.5 Intervention

The yogic session was carried out for 12 weeks. Following initial exercises, the subjects in the intervention group practiced yogic breathing and OM chanting for 30 minutes, five days a week, for 4 months. In contrast, the non-intervention group did not receive any training during this time

2.5.1 Yogic Breathing

The Pranavam, Shabda Brahman, [29] is the complete cosmic OM (or AUM), is symbolized as the three unique vibrational rhythms of 'Aa', 'Uu' and 'Mm' means the Brahman, which is the consciousness [30]. These three distinct resonant sounds are intimately tied with the three phases of respiration, examined earlier with our segmental breathing practice of Vibhagha pranayama [20-23]. Whoever leaves the body while contemplating Me, the Supreme Being, and reciting the syllable OM, will reach the highest state of spiritual fulfilment, [31].

1. Adham Pranayama – A (lower lung breathing)
2. Madhyam Pranayama – U (mid-chest breathing)
3. Adhyam Pranayama – M (upper lung breathing)
4. Mahat Yoga Pranayama – AUM (complete yogic breathing). [29]

2.5.2 Om Chanting

1. Ahatha chanting of OM – (internal or unstruck sound)
2. Anahatha chanting of OM – (external or struck sound)
3. Silence – AJAPA – (silence meditation)

A unique feature of this study is the incorporation of differential modulation of AUM chanting, targeting distinct zones of the respiratory system with vibratory intent. Each part of the AUM syllable was consciously extended to resonate with specific anatomical and physiological regions



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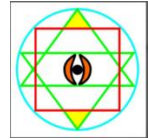
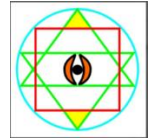


Table 1: Vibrational Modulation of AUM in Segmental Breathing

Region	Chanting Style	Symbolic Sound	Respiratory Target	Vibration Zone
Abdominal	AaaaaaaaaaaaaUM	"A"	Diaphragmatic breathing	Lower Lung
Thoracic	AUuuuuuuuuuuuM	"U"	Intercostal expansion	Middle lung
Clavicular	AUMmmmmmmm	"M"	Apical chest inflation	Upper lung

Table 2: Outline of Yoga Practices for intervention group with Techniques and Benefits

No.	Technique	Time ame	Techniques	Benefits
1	Prayer & Sithilikarana Vyayama (Loosening Joints)	5 Mins	Start with a simple prayer. perform gentle joint movements such as neck rotation, shoulder rotation, wrist rotation, hip rotation and ankle rotation.	Prepares the body for practice, loosens joints, improves blood circulation, reduces stiffness, and enhances body-mind coordination.
2	Yogic Breathing	15Mins	Practice deep diaphragmatic breathing, sectional breathing (abdomen, chest, clavicle), and full yogic breath with different modulation	Enhances lung capacity, calms the nervous system, improves oxygenation, reduces anxiety, and supports better breath control. Stimulates the vagal tone and calming the hypothalamic–pituitary–adrenal (HPA) axis,
3	Ahatha & Anahatha OM Chanting with Silent Meditation	8 Mins	Start with <i>Ahatha</i> OM—mentally repeating OM in silence. Then shift to <i>Anahatha</i> OM—chanting OM aloud with natural rhythm. Finally, move into <i>Ajapa</i> meditation—silently observing your natural breath. Let OM continue to vibrate in your mind, rising and falling gently like: OMmmm... OMmmm... OMmmm... maintaining a slow, natural pulse.	Balances the autonomic nervous system, promotes inner peace, reduces stress hormone levels, and enhances emotional stability and focus.
4	Ending Prayer and Relaxation	2 Mins	Conclude with a short prayer and practice conscious relaxation (like lying down in Shavasana).	Integrates the benefits of the session, reinforces a positive mental state, promotes deep physical rest, and emotional calmness.



2.6 Statistical Analysis

After Twelve weeks, both groups were reassessed on the same chosen experimental variables, including physiological measures like Breath Holding Time as well as Respiratory Rate. The data were gathered and organized into tables. Mean and SD were calculated. A paired t-test was conducted to determine the significant differences between the experimental and control samples. The level of significance was determined to be 0.05.

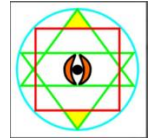
Table 3: Demographic Characteristics of Study Participants

Characteristic	Intervention Group (n=10)	Control Group (n=10)	p-value
Age (years)			
Mean \pm SD	37.3 \pm 6.1	37.4 \pm 6.7	0.972
Range	30–45	28–46	
Gender			
Female	6 (60%)	5 (50%)	0.653
Male	4 (40%)	5 (50%)	
Height (cm)			
Mean \pm SD	162.47 \pm 8.78	164.48 \pm 10.76	0.645
Weight (kg)			
Pre-test (Mean \pm SD)	80.86 \pm 13.23	82.42 \pm 12.42	0.784
Post-test (Mean \pm SD)	79.16 \pm 13.17	82.06 \pm 12.26	0.612

BMI Classification (Pre-test)			0.745
Normal (18.5–24.9)	1 (10%)	2 (20%)	
Overweight (25.0–29.9)	2 (20%)	2 (20%)	
Obese (≥ 30.0)	7 (70%)	6 (60%)	
BMI Classification (Post-test)			0.861
Normal (18.5–24.9)	1 (10%)	2 (20%)	
Overweight (25.0–29.9)	4 (40%)	2 (20%)	
Obese (≥ 30.0)	5 (50%)	6 (60%)	

Table 4: Computation of paired t test of Breath Holding Time (BHT)

Group	Pre-test Mean (SD)	Post-test Mean (SD)	Effective Mean	Paired t-test value	P value
Yoga Intervention	16.1 (1.7)	21.1 (2.9)	5	t=9.31	p<.001
Control	17.5 (1.26)	18.7 (1.70)	1.2	t=2.71	p=.024



Note: The results of the paired t-test showed the notable and statistically significant difference between the pre-intervention test ($M = 16.1$, $SD = 01.7$) and post-intervention test ($M = 21.1$, $SD = 2.9$) where, $t(9) = 9.3$, $p < .001$

Table 5: Computation of paired t test of Respiratory Rate (RR)

Group	Pre-test Mean (SD)	Post-test Mean (SD)	Effective Mean	Paired t-test value	P value
Yoga Intervention	21.2 (0.90)	16.3 (0.9)	-4.9	$t=10.20$	$p<.001$
Control	21.2 (0.97)	21.1 (0.87)	-0.1	$t=0.3$	$p=0.798$

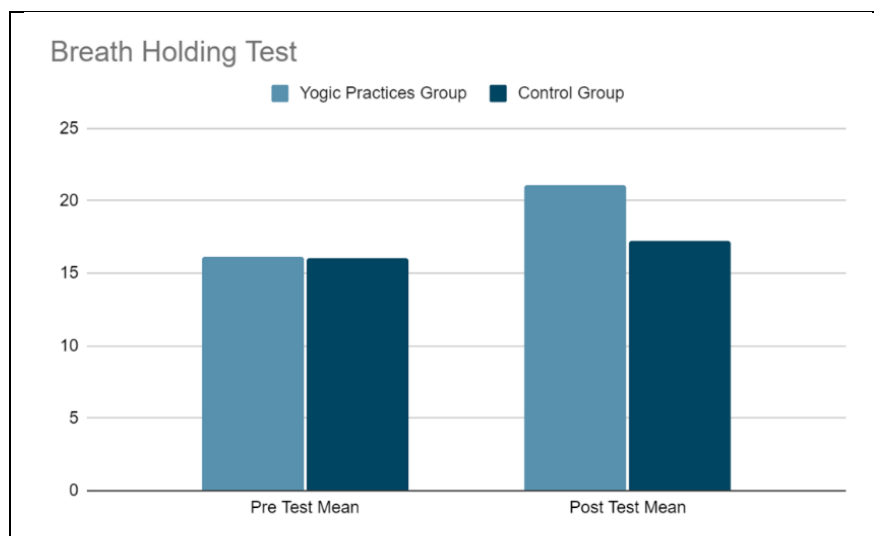
Note: The paired t-test results highlighted a significant and considerable difference between the pre-intervention test ($M = 21.2$, $SD = 0.90$) and post- intervention test ($M = 16.3$, $SD = 0.9$) where, $t(9) = 10.2$, $p < .001$.

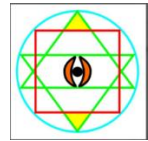
Table 6: Changes in PSS-14 Categorization

Stress Category	Intervention Group (n=10)		Control Group (n=10)	
	Pre-test	Post-test	Pre-test	Post-test
Low Stress (<14)	0 (0%)	2 (20%)	1 (10%)	1 (10%)
Moderate Stress (14–26)	3 (30%)	6 (60%)	3 (30%)	4 (40%)
High Stress (>26)	7 (70%)	2 (20%)	6 (60%)	5 (50%)

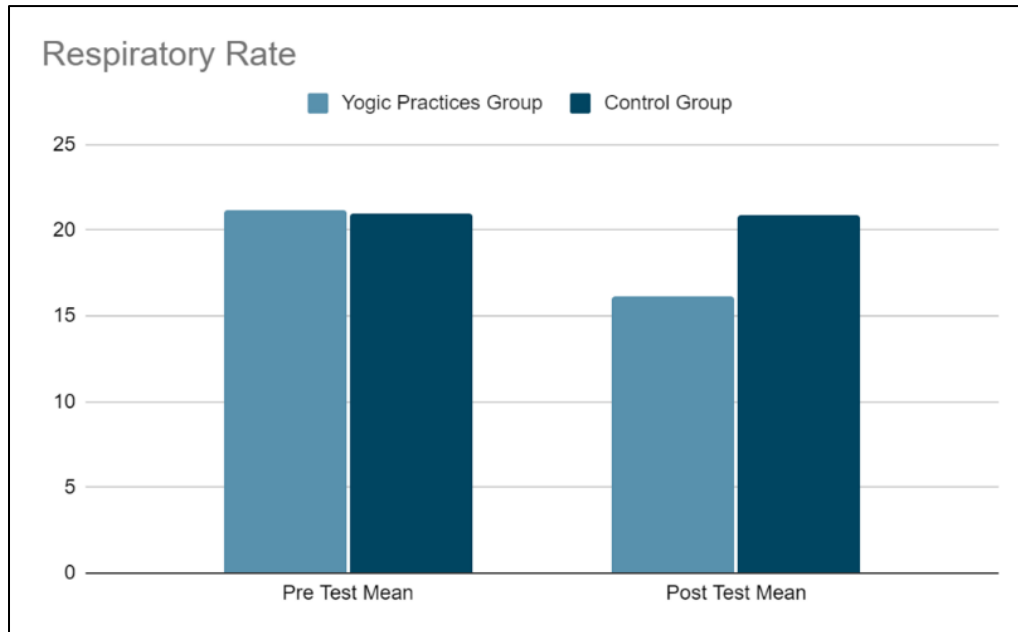
Note: The chi-square test revealed a statistically significant shift in stress categorization among participants in the intervention group between the pre- and post-test periods, $\chi^2(2, N = 10) = 5.867$, $p = .032$, indicating a meaningful reduction in perceived stress levels following the intervention. In contrast, no significant change was observed in the control group, $\chi^2(2, N = 10) = 0.267$, $p = .875$

2.6.1 Column chart visualizing the mean difference of initial and final score in Breath Holding Time (BHT)





2.6.2 Column chart visualizing the mean difference of initial and final score in Respiratory Rate (RR)



2.7 Outcome Measures

Pre- and post-intervention assessments included:

Respiratory Rate (RR): Manually recorded for a minimum duration of one minute [19]

Breath Holding Time (BHT): Measured using a stopwatch [18]

Perceived Stress Scale (PSS-14): Standardized psychological assessment

Body Mass Index (BMI): Calculated from height and weight measurements

3. Results

3.1 Demographic Characteristics

The study included 20 participants with similar baseline characteristics between groups. The intervention group had a mean age of 37.3 ± 6.1 years (range: 30-45), while the control group had a mean age of 37.4 ± 6.7 years (range: 28-46). Gender distribution was 60% female and 40% male in the intervention group, and 50% female and 50% male in the control group ($p=0.653$).

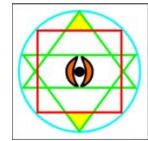
3.2 Respiratory Parameters

3.2.1 Breath Holding Time (BHT)

The intervention group showed significant improvement in BHT from pre-test ($M = 16.1$, $SD = 1.7$) to post-test ($M = 21.1$, $SD = 2.9$), with an effective mean difference of 5.0 seconds ($t = 9.31$, $p < 0.001$). The control group showed minimal change from pre-test ($M = 17.5$, $SD = 1.26$) to post-test ($M = 18.7$, $SD = 1.70$), with an effective mean difference of 1.2 seconds ($t = 2.71$, $p = 0.024$).

3.2.2 Respiratory Rate (RR)

The intervention group demonstrated significant reduction in RR from pre-test ($M = 21.2$, $SD = 0.90$) to post-test ($M = 16.3$, $SD = 0.9$), with an effective mean difference of -4.9 breaths per minute ($t = 10.20$, $p <$



0.001). The control group showed negligible change from pre-test ($M = 21.2$, $SD = 0.97$) to post-test ($M = 21.1$, $SD = 0.87$), with an effective mean difference of -0.1 breaths per minute ($t = 0.3$, $p = 0.798$).

3.3 Psychological Outcomes

3.3.1 Perceived Stress Scale (PSS-14)

The intervention group showed statistically significant improvement in stress categorization ($\chi^2 = 5.867$, $p = 0.032$). Pre-intervention, 70% of participants were in the high stress category (>26), 30% in moderate stress (14-26), and 0% in low stress (<14). Post-intervention, this distribution shifted to 20% high stress, 60% moderate stress, and 20% low stress. The control group showed no significant change in stress categorization ($\chi^2 = 0.267$, $p = 0.875$), with distributions remaining relatively stable from pre-test to post-test.

3.4 Body Mass Index Changes

The intervention group showed favorable changes in BMI classification. Pre-intervention, 70% were obese (≥ 30.0), 20% overweight (25.0-29.9), and 10% normal weight (18.5-24.9). Post-intervention, 50% were obese, 40% overweight, and 10% normal weight. The control group showed minimal change in BMI distribution.

3.5 Neurophysiological Mechanisms

The modulated AUM chant acted as a neuro-respiratory biofeedback tool, enhancing baroreflex sensitivity, improving cardiorespiratory synchronization, and regulating chemoreflex drive—a key marker in asthma pathophysiology. Vagal stimulation through vocal tract vibration helped reduce airway hyperreactivity, improved breath-holding capacity, and induced systemic anti-inflammatory responses through the cholinergic anti-inflammatory pathway.

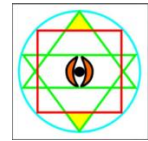
4. Discussions

Asthma is a complex, multifactorial disease that causes breathing difficulties and narrowing of the air passages, leads to various symptoms. These include dyspnoea (difficulty in breathing, particularly during exhalation), persistent wheezing (a high-pitched whistling sound during breathing), coughing, aggravation of the above symptoms during the night and early morning, sleeplessness, discomfort increases when lying down in bed. Pathologically, asthma involves mucosal inflammation, mucus hypersecretion, bronchial constriction, air trapping, and airway remodeling [24]. Though it is difficult to control all the triggers at a time, understanding these mechanisms is essential for developing effective treatment strategies aimed at controlling symptoms and preventing exacerbations. Breath holding time and Respiratory Rate is a simple, non-invasive, inexpensive test to assess pulmonary function which can provide useful information in healthy and diseased lungs. These variables also be used to assess the prognosis of such respiratory diseases. Breath-holding time (BHT) is influenced by baseline lung volume and mental determination. Breathing techniques, including respiratory retention, improve respiratory stamina and increase BHT. Research shows that pranayama regulates autonomic function by affecting the sensitivity of medullary respiratory control. Enhanced BHT is achieved by strengthening the respiratory muscles, which raises the partial pressure of carbon dioxide (pCO_2) and lowers the partial pressure of oxygen (pO_2). These improvements are attained through regular practice of OM Chanting [25- 27].

In the present study we could see the improvement in the variables measured in the 20 patients in the yoga group to the regular practice of yogic breathing and OM chanting. The vibrations generated during prolonged exhalation in OM chanting and yogic breathing are thought to activate the aural Vagal branch, which innervates the Auditory Canal. This branch, known as the Arnold's nerve, transmits sensory signals to the brain. The stimulation of this nerve can induce a parasympathetic response, promote relaxation and



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reduce stress [28]. This stimulation can lead to immediate relief by altering the Autonomic Nervous System (ANS) promoting vagal activity which is essential for the regulation airway's function. Also, the prolonged exhalation helps to expel more trapped air in asthmatic patients. Thus, the current research concluded that the consistent practice of yogic breathing & OM chanting improves increased tolerance to CO₂ by prolonged BHT and decreases the respiratory rate of respiration.

The current study's findings align with previous research demonstrating that yogic practices can significantly improve respiratory parameters in asthmatic patients. The unique contribution of this study lies in the systematic integration of vibrational modulation with segmental breathing, creating a comprehensive mind-body intervention that addresses both physiological and psychological aspects of asthma management.

4.1 Limitations

A significant limitation of this study is that the intervention combines two relaxation practices (yogic breathing and OM chanting), making it challenging to attribute the observed beneficial effects to any single practice. Additionally, the relatively small sample size (n=20) limits the generalizability of findings.

4.2 Clinical Implications

The study suggests that regular practice of yogic breathing and OM chanting improves the ventilatory function of the lungs as shown by the increase in BHT and decrease in RR. Patients experienced reduced symptoms, became more actively involved in their healthcare, and showed considerable improvement in stress management. The intervention is convenient, requiring only 30 minutes and can be practiced anywhere without specialized equipment.

5. Future Direction

Considering the positive effects of yogic breathing and OM chanting, further large-scale studies are needed for other respiratory parameters like FVC and PEF, with better methodological designs to understand the mechanisms involved with yogic breathing. Future research should also investigate the long-term effects of these interventions and explore optimal dosage and duration for maximum therapeutic benefit.

6. Conclusion

This study demonstrates that the combination of AUM-integrated yogic breathing and OM chanting significantly improves respiratory parameters and psychological well-being in adults with mild to moderate asthma. The intervention showed significant improvements in breath holding time (increased), respiratory rate (decreased), and stress levels (reduced) compared to the control group. The vibrational dynamics of AUM chanting, when systematically integrated with segmental breathing practices, presents a promising non-pharmacological complementary approach for asthma management.

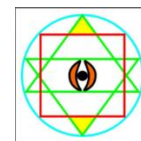
The findings support the incorporation of yogic breathing and OM chanting as beneficial interventions for asthmatic individuals to enhance and maintain respiratory parameters and psychological resilience. This pioneering mind-body framework offers a holistic approach to asthma care, addressing both the physiological and psychological dimensions of the condition.

7. Institutional Ethics Approval

This study was reviewed and approved by the Institutional Ethics Committee (IEC) of Meenakshi Academy of Higher Education and Research (MAHER), Chennai, Tamil Nadu, India.



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IEC Approval No: MAHER/IEC/PhD/108/APRL25

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8. Source of Funding

None

9. Conflict Of Interest

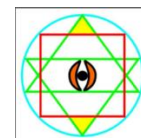
There is no conflict of interest.

10. References

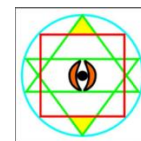
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Harnessing Yogic Tools for Hormonal Transitions: A Pilot Study on Bhramari Pranayama and Chakra-Based Meditation for Mental Well-Being in Perimenopausal Women

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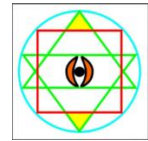
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Abstract: Background: The perimenopausal transition is often accompanied by psychological and emotional disturbances that can negatively impact a woman's mental well-being. Yogic practices such as Bhramari Pranayama and chakra-based meditation are emerging as promising, non-pharmacological approaches to support emotional balance during this hormonal shift. Materials and methods: This pilot randomized controlled study evaluated the effects of a 8-week intervention involving Bhramari Pranayama and guided chakra meditation in 30 perimenopausal women (intervention group: n = 15; control group: n = 15). Participants in the intervention group practiced daily guided sessions, while the control group received no such intervention. Psychological outcomes—including anxiety, stress, mood, sleep quality, and emotional well-being—were measured using validated scales pre- and post-intervention. Results: The intervention group showed significant improvements in all measured psychological parameters. Anxiety and perceived stress levels decreased markedly ($p < 0.01$), while mood, emotional balance, and sleep quality improved significantly ($p < 0.01$). Participants also reported a greater sense of inner calm and improved self-awareness. Minimal changes were observed in the control group. Conclusions: The study suggests that Bhramari Pranayama combined with chakra-based meditation can effectively reduce psychological distress and promote mental well-being in perimenopausal women. These yogic tools offer a low-cost, accessible approach to managing menopausal transition symptoms. Future research should explore long-term effects and underlying neuroendocrine mechanisms.

Keywords: Bhramari Pranayama, chakra meditation, perimenopause, mental well-being, anxiety, stress, hormonal transition.

1. Introduction

Menopause signifies the end of a woman's reproductive phase, typically occurring between the ages of 45 and 55 (Davis et al., 2015). The years leading up to menopause—referred to as perimenopause—are marked by significant hormonal fluctuations, particularly in estrogen and progesterone levels (Hale & Burger, 2009). These changes can give rise to a wide range of symptoms, including hot flashes, night sweats, mood swings, irritability, anxiety, depression, sleep disturbances, and a decline in overall quality of life (Woods et al., 2021). Such symptoms can have a profound impact on the mental health and general well-being of women navigating this transitional period (Ambikairajah et al., 2022). Yoga has increasingly been recognized for its benefits in enhancing both mental health and physical well-being (Ghosh et al., 2024; K.S. et al., 2023). Research has indicated that yoga can help relieve common perimenopausal symptoms such as anxiety, depression, and sleep disturbances (Padmavathi et al., 2023). A recent systematic review and meta-analysis of randomized controlled trials by Gangadharan et al. (2024) confirmed that yoga significantly reduces menopausal symptoms and enhances overall quality of life. Likewise, Nayak et al. (2014) reported that yoga therapy led to notable improvements in psychological health, vasomotor symptoms, and life quality among perimenopausal women. In addition, Khadka et al. (2022) found that regular yoga practice significantly increased serum levels of estrogen and progesterone, suggesting a positive influence on hormonal regulation during the menopausal transition. Humming (simple Bhramari) is a simple activity with several positive benefits, such as a decrease in HR, an increase in HRV, an



enhancement of autonomic and lung function, and an increase in attention and sleep quality Trivedi et.al (2021).

Relaxation is one of the ways to control undesirable nervous tension and it requires to be learnt through meditation which is directly related to awareness. It can be shown by awareness hierarchy Hui Chu Tsai, Hari Cohly et al. (2014)

2. Materials and Methods

Study Design

This study employed a parallel-group randomized controlled trial design conducted over 8 weeks. Participants attended sessions five days per week (Monday through Friday), with each session lasting 60 minutes. The study included an experimental group that received a yoga intervention and a control group did not receive any intervention.

Participants

The study targeted perimenopausal women aged 40–50 years residing in Chennai City, India. Participants were required to be from urban areas and to have follicle-stimulating hormone (FSH) levels of 15 or higher on the sixth day of their menstrual cycle. Women with acute depression ($n = 1$), those undergoing hormone replacement therapy (HRT) ($n = 1$), individuals unable to sit on the floor ($n = 5$), and those with severe backache, osteoarthritis, hypertension, diabetes mellitus, or surgical menopause ($n = 2$) were excluded.

Sample Size and Randomization

A statistical calculation with a 95% confidence level and 80% power determined the total sample size to be 30 participants, with 15 allocated to the experimental group and 15 to the control group. Participants were selected through simple random sampling from a pool of eligible women visiting a renowned gynecologist in Chennai City.

Intervention: The intervention involved 60-minute sessions per week for 8 weeks. Each session was structured as follows:

- 15 minutes: Gentle warm-up and joint loosening.
- 15 minutes: Bhramari Pranayama, involving 5–7 cycles with eyes closed, performed while sitting upright.
- 25 minutes: Chakra-Based Meditation, focusing sequentially on chakras using visualizations and bija mantras.
- 5 minutes: Supine relaxation.

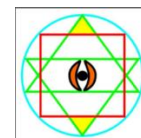
Outcome Measures - Psychological Parameters

Perceived Stress Scale (PSS): The Perceived Stress Scale is a 10-item instrument measuring the degree to which situations in one's life are appraised as stressful. Items are rated on a 5-point Likert scale from 0 (never) to 4 (very often). Four items (4, 5, 7, and 8) are positively stated and must be reverse scored. Total scores range from 0–40, with scores of 0–13 indicating low stress, 14–26 suggesting moderate stress, and 27–40 representing high perceived stress levels (Chan & La Greca, 2020).

WHO Quality of Life Questionnaire (WHOQOL-BREF): The WHOQOL-BREF contains 26 items, with 24 items across four domains: physical health (7 items), psychological health (6 items), social relationships (3 items), and environment (8 items), plus 2 individual items assessing overall quality of life and general health. Each item is rated on a 5-point Likert scale from 1–5. Domain scores are scaled in a positive direction (higher scores indicate better quality of life) and are transformed to a 0–100 scale. Three items (3, 4, and 26) must be reverse scored before calculating domain scores (Krägeloh et al., 2011).



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Data Collection

Psychological assessments were conducted before and after the 8-week intervention period. Participants completed all questionnaires under supervision to ensure proper understanding and accurate responses. The research team maintained standardized testing conditions for all assessments to minimize variability.

Statistical Analysis

Data analysis was conducted using paired t-tests to evaluate within-group changes and independent t-tests for between-group comparisons of psychological parameters before and after the intervention. The mean differences (MD) were calculated to quantify the magnitude of changes for each parameter. Effect sizes (Cohen's d) were also computed to assess the practical significance of the observed differences, with thresholds of 0.2, 0.5, and 0.8 indicating small, medium, and large effects, respectively (Kumar et al., 2024). A significance level of 0.05 was set to determine statistical significance for all tests. Statistical analyses were performed using IBM SPSS Statistics software (version 25). Results are presented as mean \pm standard deviation, along with mean differences and effect sizes to provide a comprehensive understanding of the intervention's impact.

3. Results

Baseline Characteristics

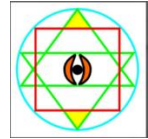
The baseline characteristics of the study participants in the yoga and control groups were comparable, with no statistically significant differences observed across demographic, anthropometric, or clinical parameters. The mean age of participants was 44.5 ± 4.2 years in the yoga group and 45.1 ± 3.9 years in the control group ($p = 0.56$). Other variables, including BMI, symptom duration, blood pressure, resting heart rate, and menstrual cycle length, were also similar between groups ($p > 0.05$), indicating homogeneity in baseline profiles.

Changes in Psychological Variables

Significant improvements in psychological and quality-of-life parameters were observed in the yoga group compared to the control group following the intervention perceived stress (Perceived Stress Scale, -7.2 ; $p = 0.001$, $d = 0.75$). quality of life (WHO Quality of Life Scale, $+14.4$; $p < 0.001$, $d = 0.86$). Baseline characteristics of perimenopausal women.

Parameters	Yoga Group (n = 50)	Control Group (n = 50)	p-value
Age (years)	44.5 ± 4.2	45.1 ± 3.9	0.56
Height (cm)	158.3 ± 5.6	157.8 ± 5.9	0.73
Weight (kg)	65.4 ± 8.3	64.9 ± 7.8	0.81
BMI (kg/m ²)	26.1 ± 3.2	26.3 ± 3.4	0.82
Duration of symptoms (months)	18.5 ± 7.4	17.9 ± 8.1	0.77
Menstrual cycle length (days)	35.2 ± 6.8	34.8 ± 7.2	0.83
Systolic BP (mmHg)	126.5 ± 8.4	125.8 ± 9.1	0.75
Diastolic BP (mmHg)	82.3 ± 6.2	81.9 ± 6.5	0.8
Resting heart rate (bpm)	74.6 ± 5.8	75.2 ± 6.1	0.69

The control group showed negligible changes in all measured parameters, highlighting the efficacy of yoga therapy in improving psychological well-being and quality of life in perimenopausal women.



4. Discussion

The findings from this study provide compelling evidence of the significant psychological and physiological benefits of yoga therapy for perimenopausal women. Participants in the yoga group demonstrated substantial improvements across various psychological measures, including reductions in depression, anxiety, perceived stress, and climacteric symptoms. These improvements were accompanied by enhancements in sleep quality, self-esteem, and overall quality of life, all of which were statistically significant with moderate-to-large effect sizes. These results highlight the clinical relevance of yoga as a non-pharmacological intervention for alleviating the mental and emotional burdens commonly associated with the perimenopausal phase.

Changes in the psychological variables before and after intervention

Outcome Measure	Group	Pre-intervention Mean (SD)	Post-intervention Mean (SD)	Mean Difference	t-value	p-value	Effect Size (Cohen's d)
Perceived Stress Scale	Yoga (n=50)	25.4 (5.8)	18.2 (4.6)	-7.2	4.78	0.001*	0.75
	Control (n=50)	25.1 (5.7)	24.8 (5.9)	-0.3	0.20	0.85	0.05
WHO Quality of Life (Overall)	Yoga (n=50)	58.2 (12.4)	72.6 (11.2)	14.4	5.46	<0.001*	0.86
	Control (n=50)	58.5 (12.2)	59.1 (12.3)	0.6	0.28	0.81	0.05

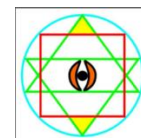
In contrast, the control group showed negligible changes across all measured variables, reinforcing the notion that the positive effects observed in the yoga group were specific to the structured mind-body practice. This outcome aligns with previous research, which suggests that the multifaceted nature of yoga—including physical postures, breathing exercises, meditation, and relaxation techniques—acts synergistically to regulate hormonal imbalances, improve autonomic nervous system functioning, and promote emotional well-being. The physiological changes observed in this study, such as reductions in stress and menopausal symptoms, support the idea that yoga may play a crucial role in managing the hormonal fluctuations and emotional challenges associated with perimenopause. A study by Khadka et al. (2022) further examined the hormonal impact of yoga, revealing that yoga practice led to significant increases in serum estrogen and progesterone levels in perimenopausal women, suggesting that yoga may have a beneficial effect on hormonal regulation. Conversely, no significant changes in luteinizing hormone (LH) and follicle-stimulating hormone (FSH) levels were observed. These results suggest that yoga may help mitigate some of the hormonal fluctuations associated with menopause, particularly those that contribute to symptoms such as hot flashes, mood swings, and sleep disturbances (Khadka et al., 2022).

5. Limitations

Despite its strengths, the study has several limitations. First, it relied on self-reported questionnaires for psychological assessments, which may introduce response bias. Second, the generalizability of the findings may be limited as participants were drawn from a single urban area. Third, the lack of a placebo or active control group means that the observed benefits cannot be definitively attributed solely to the yoga



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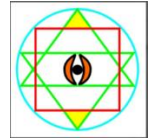
intervention. Future studies could address these limitations by including larger, more diverse samples and incorporating objective measures of physiological and hormonal changes.

6. Conclusions

This study demonstrates that a 8-week structured yoga intervention is an effective non-pharmacological approach for improving psychological well-being and quality of life in perimenopausal women. The significant reductions in stress and enhanced quality of life, suggest bhramari pranayama and chakra meditation potential as a holistic therapy to address the multifactorial challenges of perimenopause.

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A Study of Mudras for Mindfulness and Their Role in Reducing Burnout, Low Blood Pressure, and Heart-Related Stress among Middle-Aged Women in India

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Abstract: This study investigates the therapeutic potential of mudras, symbolic hand gestures from yogic traditions, as a mindfulness-based intervention to reduce burnout, Low blood pressure (hypertension), and heart-related stress among middle-aged women in India. This population often faces unique emotional, physical, and social challenges due to life transitions, caregiving roles, and workplace demands. Mudras offer a non-invasive, cost-effective, and culturally rooted solution to improve emotional regulation, cardiovascular function, and overall well-being. The study focuses on specific mudras—Garuda Mudra, Hridaya Mudra, and Ganesha Mudra—and their integration into holistic health frameworks.

Keywords: Mindfulness, Mudras, Burnout, Heart Health, Middle-Aged Women, Holistic Wellness.

1. Introduction

Middle-aged women in India often carry multiple responsibilities spanning family, health, and work. This stage of life can trigger chronic stress, hormonal fluctuations, emotional fatigue, and cardiovascular risks such as hypertension and heart palpitations. Conventional interventions often overlook the emotional and spiritual dimensions of healing. Ancient yogic practices like mudras provide a holistic and culturally familiar approach to address these challenges. Mudras are hand gestures used in yoga and meditation that stimulate energy channels (nadis), influence the autonomic nervous system, and balance the mind-body connection—particularly beneficial in reducing stress-induced ailments.

1.1 Mindfulness and Mudras

Mindfulness, or *sampajanna*, refers to present-moment awareness with mental clarity. It fosters resilience and wise response to stress. Practicing mudras in a mindful manner enhances both neural activation and inner awareness, promoting deep emotional healing and physiological regulation (Shapiro, 2020; Tang, 2018; Hoshaw, 2022).

1.2 Mudras: Definitions, Techniques, and Benefits

Definition of Mudras

Mudras are symbolic hand gestures or positions commonly used in **yoga, meditation, and healing** that influence the **flow of energy (prana)** and **psychophysical balance** within the body and mind. The word *mudra* originates from Sanskrit, meaning "**seal,**" "**mark,**" or "**gesture.**" In yogic science, mudras act as **neuromuscular seals** that lock and direct **subtle energies**, enabling practitioners to achieve **enhanced concentration, inner awareness, and energetic alignment**. Each mudra stimulates specific **nerve endings, energy channels (nadis), and brain centers**, thereby influencing various **physiological functions** such as heart rate, breath rhythm, and hormonal balance.

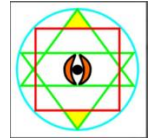
1.3 Key Aspects of Mudras

Symbolic Expression:

Mudras serve as symbolic expressions of spiritual ideas, divine qualities, and elemental forces in Indian traditions. Each gesture often represents a deeper metaphysical or devotional meaning—such as peace,



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protection, or transformation—and is frequently seen in classical Indian dance, iconography, and ritual practices.

Elemental Correspondence

In yogic philosophy, each finger is associated with one of the five elements: the thumb represents **fire**, the index finger **air**, the middle finger **ether**, the ring finger **earth**, and the little finger **water**. Mudras help restore balance among these elements in the body, thereby maintaining physical and energetic harmony.

Energetic Control

Mudras play a vital role in regulating **prana**, the body's life force energy. By creating specific hand positions, practitioners can direct this subtle energy to targeted regions or functions within the body, leading to revitalization, detoxification, and healing.

Therapeutic Function

Beyond spiritual significance, mudras have practical health benefits. Regular practice can reduce **stress and anxiety**, improve **mental clarity**, support **blood pressure regulation**, and enhance **emotional balance**. This makes them a valuable addition to preventive and therapeutic wellness routines.

Spiritual Purpose

Mudras are commonly used during **meditation**, **mantra chanting**, and **breathwork** to deepen concentration and facilitate a higher state of awareness. They help connect the practitioner to inner stillness and promote **spiritual awakening** by activating subtle energy centers (chakras).

2. Methodology

2.1. Study Design

This study employs a **qualitative and experiential approach** to examine the effects of specific mudras on emotional well-being, heart-related stress, and hypertension in middle-aged women. The focus is on regular practice of selected **therapeutic mudras** over a structured time period, combined with mindfulness and breath awareness.

2.2. Participants

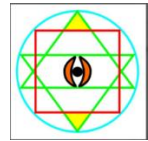
A group of **30 middle-aged women** (ages 40–60) experiencing symptoms of emotional burnout, mild hypertension, or menopausal stress-related conditions were selected. Participants were screened for physical and psychological readiness and gave informed consent.

2.3 Core Therapeutic Mudras

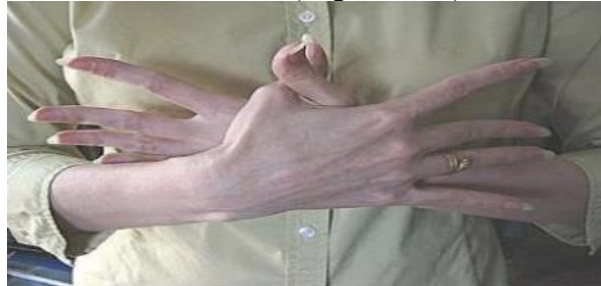
This section focuses on three primary mudras—**Garuda Mudra**, **Hridaya Mudra**, and **Ganesha Mudra**—selected for their proven effectiveness in addressing emotional stress, cardiovascular imbalance, and inner resilience, particularly among **middle-aged women**.



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Garuda Mudra (Eagle Mudra)



- **Technique:** The right palm is placed over the left palm at chest level, with both thumbs interlocked to resemble the wings of an eagle. Hands are held close to the heart center.
- **Duration:** 5 minutes, preferably practiced in a seated, upright posture.
- **Breath Coordination:** Deep, rhythmic breathing with a focus on the chest expanding on inhalation.
- **Physiological Effect:** Enhances **blood circulation, oxygenation, and lymphatic drainage**. It helps open the chest area and balance the right and left hemispheres of the body and brain.
- **Emotional/Spiritual Effect:** Releases **energetic congestion** and promotes **inner freedom**.
- **Relevance for Middle-Aged Women:** Particularly effective for managing **chest heaviness, palpitations**, and emotional stagnation often arising from menopause, anxiety, or grief.

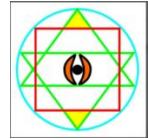
Hridaya Mudra (Heart Mudra)



- **Technique:** The index finger touches the base of the thumb, while the tips of the middle and ring fingers meet the tip of the thumb. The little finger remains extended. The hands rest on the knees or thighs.
- **Duration:** 5–7 minutes with eyes gently closed.
- **Breath Coordination:** Slow diaphragmatic breathing, focusing awareness on the heartbeat.
- **Physiological Effect:** Strengthens cardiac muscles, improves blood pressure regulation, and enhances parasympathetic tone (relaxation response).
- **Emotional/Spiritual Effect:** Soothes emotional distress, alleviates panic, and cultivates emotional resilience.
- **Relevance for Middle-Aged Women:** Helpful during episodes of emotional overwhelm, heart-centered anxiety, or stress-induced hypertension. This mudra fosters emotional healing and heart chakra activation



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Ganesha Mudra



- **Technique:** Hands are brought in front of the chest. The left hand grasps the right from the side, both forming a lock. A gentle pulling motion is maintained to activate the chest muscles. After 5 minutes, switch the hands.
- **Duration:** 5 minutes per side (total 10 minutes).
- **Breath Coordination:** Deep inhalation followed by slightly forceful exhalation, releasing tension.
- **Physiological Effect:** Stimulates the respiratory muscles, opens the heart center, and strengthens the upper thoracic region.
- **Emotional/Spiritual Effect:** Symbolizes the removal of obstacles, increases emotional strength, and builds self-confidence.
- **Relevance for Middle-Aged Women:** Highly beneficial for those experiencing emotional blockages, self-doubt, or going through transitional phases such as empty-nest syndrome, menopause, or grief.

2.4 Complementary Supportive Mudras

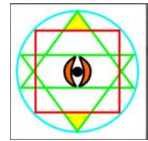
To enhance the therapeutic outcomes of the core mudras, participants also practiced a rotation of secondary mudras. These gestures were selected for their cognitive, grounding, **and** energy-balancing effects, helping reinforce the nervous system and emotional stability.

List of Complementary Mudras

- **Gyan Mudra**
 - **Effect:** Improves memory, clarity, and intellectual alertness.
 - **Use:** During mental fatigue, forgetfulness, or lack of motivation.
- **Chin Mudra**
 - **Effect:** Promotes inward focus, calmness, and a meditative state.
 - **Use:** To reduce nervous tension and mental chatter.
- **Hakini Mudra**
 - **Effect:** Enhances coordination between brain hemispheres; improves attention and problem-solving.
 - **Use:** When feeling scattered, confused, or mentally drained.
- **Prithvi Mudra**
 - **Effect:** Promotes stability, grounding, and tissue regeneration.
 - **Use:** During physical weakness, low energy, or emotional unsteadiness.
- **Shuni Mudra**
 - **Effect:** Encourages patience, discipline, and perseverance.
 - **Use:** In situations requiring endurance, emotional strength, or long-term commitment.



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These mudras support mind-body awareness, emotional intelligence, and resilience, which are vital for navigating midlife transitions.

2.5 Practice Schedule

- **Duration:** 4 weeks
- **Frequency:** Daily practice, 20–30 minutes in the morning or evening
- **Setting:** Quiet home environment or guided group sessions
- **Mindfulness Component:** Each session began with 2 minutes of breath awareness and ended with 2 minutes of silent observation or journaling

2.6 Assessment Tools

- **Pre- and post-practice questionnaires** on stress, sleep, and emotional state
- **Blood pressure monitoring** (weekly)
- **Self-reflection journals**
- **Optional heart rate variability (HRV)** tracking for nervous system balance

3. Results

The four-week intervention involving the regular practice of therapeutic and supportive mudras yielded several positive outcomes among the participating middle-aged women. The results were evaluated using self-reported assessments, blood pressure readings, and qualitative journaling.

3.1 Emotional and Psychological Well-being

Participants reported a noticeable reduction in emotional fatigue, mood fluctuations, and symptoms associated with anxiety. Regular practice of Hridaya and Ganesha Mudras contributed to a sense of emotional grounding and clarity. Many participants expressed experiencing a greater ability to manage daily stressors and emotional triggers, especially those linked to hormonal shifts and life transitions.

3.2 Cardiovascular Response

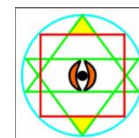
Blood pressure monitoring indicated a moderate but consistent decline in systolic and diastolic readings over the intervention period. The combination of breath-focused mudras—especially Hridaya Mudra—appeared to support parasympathetic activation, reflected in improved blood pressure regulation and decreased palpitations.

3.3 Energetic and Physical Awareness

Several women reported enhanced physical awareness, particularly in the chest and heart region. Garuda and Ganesha Mudras were effective in relieving sensations of chest tightness and promoting a sense of openness. The pulling action of Ganesha Mudra was especially appreciated for strengthening the upper body and releasing emotional tension.

3.4 Cognitive and Behavioral Shifts

Complementary mudras such as Gyan, Hakini, and Chin Mudra were associated with improvements in focus, memory recall, and mental calmness. Many participants observed a shift in how they responded to mental fatigue and noted enhanced patience and emotional discipline—effects attributed to Shuni and Prithvi Mudras.



3.5 Journaling and Self-Reflection

Analysis of reflective journals revealed recurring themes of improved sleep quality, inner peace, and renewed self-confidence. The practice of mindfulness, paired with mudra techniques, provided participants with a sense of ritual and self-care, fostering introspection and emotional processing

3.6 Summary of Key Outcomes

Parameter	Observed Change
Emotional resilience	Increased emotional regulation and reduced anxiety
Blood pressure levels	Moderate reduction in both systolic and diastolic values
Sleep quality	Improved duration and restfulness
Mental clarity & focus	Enhanced cognitive function and reduced distractions
Physical tension	Decreased sensations of chest congestion and heaviness
Self-awareness	Strengthened mind-body connection and spiritual insight

3.7 Holistic Approach

A holistic health model integrates the mental, emotional, physical, social, and spiritual dimensions of well-being (NSW, 2020). Mudras, as non-pharmaceutical tools, operate at both the energetic and neurological levels, promoting inner alignment and equilibrium.

3.8 Burnout and Hypertension in Midlife

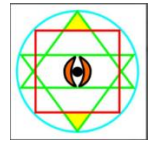
Burnout is a multidimensional condition arising from sustained emotional and physical stress. In middle-aged women, it may manifest as fatigue, irritability, cardiovascular strain, or insomnia (Channawar, 2023). Hypertension, a common midlife health concern, is strongly linked to emotional dysregulation and lifestyle imbalance. Mudras regulate heart rate, breath rhythm, and blood pressure by activating parasympathetic nervous pathways and restoring energetic harmony.

4. Conclusion

This study highlights the therapeutic value of mudras as a holistic intervention for managing emotional, cardiovascular, and psychosomatic stress among middle-aged women in India. Regular practice of selected mudras—particularly **Garuda Mudra**, **Hridaya Mudra**, and **Ganesha Mudra**—demonstrated notable benefits in reducing symptoms of burnout, emotional instability, and mild low Pressure. Beyond their physical effects, these mudras facilitated emotional resilience, inner strength, and mind-body awareness. Complementary mudras further enhanced cognitive clarity and groundedness, supporting participants through the psychological and physiological transitions of midlife. Unlike pharmacological or invasive interventions, mudras offer a **non-invasive**, **cost-effective**, and **culturally rooted** approach that can be integrated into daily routines without the need for external tools or medications. When practiced mindfully and consistently, they can serve as powerful tools for self-regulation, emotional balance, and spiritual well-being. In conclusion, mudras represent an ancient yet accessible practice that aligns with modern wellness needs, especially for women navigating the complex demands of midlife. Integrating such traditional



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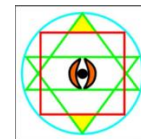
practices into community health programs, therapeutic yoga modules, and personal wellness routines can pave the way for sustainable and holistic health outcomes.

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Jeeva Raksha Meets Yoga: Real Wellness for Real Life- A Conceptual Framework

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Abstract: Let's be real—modern life's kind of a mess in an era which is completely filled by chronic lifestyle diseases and psychological distress, the need for integrative health frameworks is increasing. *Jeeva Raksha*, a holistic wellness model in traditional Indian wisdom, emphasizes the preservation of life through balanced physical, mental, and spiritual practices. When aligned with yoga—a time-honored science of self-discipline and inner harmony—Jeeva Raksha offers a practical pathway to improve well-being. This conceptual paper explores how integrating the principles of Jeeva Raksha with structured yogic interventions can foster holistic living. People are running on empty, drowning in stress, and let's not even start on all those so-called “lifestyle diseases.” Everyone's desperate for something that actually works. Enter Jeeva Raksha.

1. Introduction

Honestly, it feels like we're all on a treadmill that never stops. You get sick, you pop a pill. You're stressed; you scroll. But what if there's something deeper? Jeeva Raksha—literally “protecting life”—isn't another bland wellness fad. It's about seeing your body, mind, and soul as one weird, wonderful package deal. Throw yoga into the mix, and you're not just putting a band-aid on problems—you're digging up the roots. Jeeva Raksha, which translates to “protection of life,” is not just a physical health program—it is a 3 minutes multidimensional approach that considers the body, mind, and spirit as interconnected. This in combination with yoga treats all the diseases from root cause.

2. Conceptual Overview

Jeeva Raksha places equal emphasis on *Ahara* (diet), *Vihara* (daily routine), *Achara* (ethical conduct), and *Vichara* (thought process), which mirror the yogic principles of *yama*, *niyama*, *asana*, *pranayama*, and *dhyana* and also this cures the body through all 5 planes. These components align naturally with what yoga already teaches—that true wellness arises from balance.

Where Jeeva Raksha introduces structure and ethical grounding, yoga offers techniques for implementation: breath control, mindful movement, postural alignment, and mental clarity. This synergy can create a sustainable model for holistic living that speaks to both preventive health and inner growth.

Why This Integration Matters

Yoga's great, but let's be honest: who's got 20 minutes every day? Jeeva Raksha, on the other hand, can work its magic in just 3. Wild, right? And while nobody seems to talk about it much in academic circles, it's exactly what modern folks need. We're talking diabetes, anxiety, garbage diets, PCOS—the works.

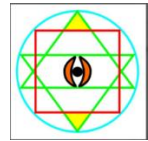
Combine the two, and you get:

- Habits that actually stick, because there's an ethical backbone.
- Solid advice on food and movement that doesn't sound like a robot wrote it.
- The whole “take charge of your life” vibe—no more blaming everything else.

Integrating Jeeva Raksha into a yoga-based lifestyle intervention offers several benefits:



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- It strengthens the wellness routines through ethical and moral grounding.
- It supports lifestyle-based disease management with practical guidance on diet, physical activity.
- It encourages self-responsibility.

Potential Applications

This integrated model can be applied in:

1. **Clinical wellness programs** – as a complementary approach to treating lifestyle disorders.
2. **Educational settings** – teaching youth resilience, self-discipline, and emotional balance.
3. **Public health policy** – creating community-based interventions for mental and physical health.

3. Conclusion

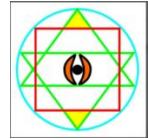
Jeeva Raksha and yoga are more than just ancient wisdom or another health trend. It's a way to actually feel alive, not just survive. In a world that's basically screaming for a little sanity, this combo's got legs. You want a blueprint for living better? Here it is Jeeva Raksha and yoga, offers more than just physical health. It provides a blueprint for a meaningful life rooted in self-awareness, balance, and compassion. In a world seeking healing at all levels, this ancient-modern fusion presents a timely, grounded, and powerful solution for holistic living that improves health in all dimensions.

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Yoga, Media, and Mass Communication in the Digital Era

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Abstract: In the digital age, yoga is no longer limited to physical studios or traditional teacher–student relationships. With the rise of digital platforms and social media, yoga has become accessible to a global audience. This article explores how modern communication tools have reshaped the way yoga is taught, practiced, and understood. It discusses the positive impact of digital media in spreading yoga and also reflects on the challenges, including commercialization and loss of authenticity. The article concludes by offering suggestions for responsible media practices that respect the cultural and philosophical roots of yoga.

Keywords: Yoga, Digital Media, Mass Communication, Social Media, Cultural Sensitivity, Online Yoga, Virtual Learning.

1. Introduction

Yoga is an ancient practice from India that aims to bring balance between the body, mind, and spirit. Traditionally, it was taught directly by gurus to students. In recent decades, however, yoga has reached people across the globe, thanks in large part to modern media and communication technologies. The development of mass communication—from books and television to websites, YouTube, and mobile apps—has made it possible for millions to learn yoga anytime and anywhere. While this digital growth has many advantages, it also raises important questions. Is yoga still connected to its roots? Are people learning yoga in the right way? This article tries to answer these questions by examining both the benefits and drawbacks of digital communication in the world of yoga.

2. Yoga Spread through Media

Early Days: Print and Television

Yoga first became popular beyond India through books, newspapers, and magazines. Publications like *Yoga Journal* helped explain yoga's physical and mental benefits to Western readers. In India, television programs by teachers such as Swami Ramdev introduced yoga to a mass audience.

These early forms of media allowed people to learn basic yoga exercises without joining a class. However, interaction was limited, and there was little room for correction or deeper learning.

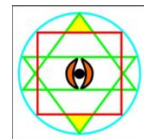
The Digital Shift

With the arrival of the internet, yoga moved into a new phase. Online videos, mobile applications, and livestream classes made yoga highly accessible. During the COVID-19 lockdowns, digital yoga became a lifeline. People continued practicing yoga from home, guided by instructors over Zoom, YouTube, or Instagram Live.

Yoga apps today offer personalized routines, voice instructions, and progress tracking. Some even use Artificial Intelligence (AI) to help with posture correction. This shows how deeply technology has entered the world of yoga.



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3. Benefits of Digital Communication in Yoga

Wider Reach

Digital platforms have broken down barriers of distance, cost, and time. A yoga session recorded in India can be watched in the United States or Africa. Many online classes are free or affordable, helping people who may not have access to a studio or teacher.

Flexible Learning

Online learning allows people to practice yoga at their own pace and schedule. Recordings and mobile apps are especially helpful for beginners, busy individuals, or those with health limitations.

Building Communities

Social media creates opportunities for people to connect over shared interests. Online yoga groups, forums, and pages allow practitioners to ask questions, share experiences, and feel supported—even across different countries.

Concerns And Challenges

Focus on Appearance Over Meaning

Many social media influencers showcase advanced yoga poses in beautiful locations. While this attracts viewers, it often gives the wrong impression that yoga is only about difficult postures or physical beauty. The deeper purpose of yoga—self-discipline, inner peace, and spiritual growth—can be lost.

Cultural Appropriation

Yoga comes from Indian traditions, including Hindu and Buddhist philosophies. Unfortunately, some modern content removes this cultural background and presents yoga as just a workout. Using Sanskrit words or Indian symbols without understanding their meaning can lead to disrespect and misrepresentation.

Lack of Quality Control

Not all online yoga instructors are properly trained. Some may give incorrect or unsafe instructions. Without in-person guidance, learners may injure themselves or develop bad habits. There is also no standard system online to verify an instructor's credentials.

The Role Of Social Media In Shaping Yoga Trends

Social media platforms like Instagram and TikTok are full of yoga content. Hashtags such as #yogaeveryday or #yogainspiration have millions of posts. While this creates visibility, it also encourages competition, comparison, and unrealistic expectations. People may feel pressure to look or perform a certain way, rather than focusing on personal growth or wellness.

Social media algorithms tend to promote visually striking content. As a result, complex poses and fancy backdrops are shared more often than simple, mindful practices.

Responsible Use of Media in Yoga

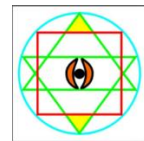
To preserve the true meaning of yoga, media should be used carefully and ethically. Here are a few suggestions:

Emphasize the Full Path of Yoga

Yoga is not just about physical exercise. It includes breath control (pranayama), meditation (dhyana), moral principles (yama and niyama), and self-awareness. Educators and content creators should try to include these aspects in their teaching and media posts.



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Respect Cultural Roots

Acknowledging the Indian origin of yoga and its spiritual roots shows respect. Content creators can mention the source of practices, use Sanskrit appropriately, and give credit to traditional knowledge.

Include All Types of People

Yoga media should represent all ages, body types, genders, and abilities. This helps break the myth that yoga is only for the young, thin, or flexible.

Encourage Safe Practice

Platforms can introduce quality checks or badges to highlight trained and certified instructors. Tutorials should give clear safety instructions, especially for beginners.

Future Directions

The future of yoga and digital media is promising but needs guidance.

- **AI & VR:** Artificial Intelligence can analyze posture and suggest improvements. Virtual Reality can create immersive yoga experiences. But we must ensure privacy and ethical use of data.
- **Hybrid Models:** The best results may come from blending in-person classes with online learning—offering flexibility without losing quality.
- **Education in Digital Literacy:** Both learners and teachers need basic knowledge of how to use media wisely, avoid misinformation, and protect cultural integrity.

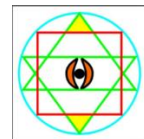
4. Conclusion

Yoga has entered the digital era in a powerful way. Media and technology have helped millions discover and benefit from yoga. But with this growth comes responsibility. Teachers, learners, and media professionals must work together to protect the depth, dignity, and cultural richness of yoga.

Used with awareness and respect, media can continue to spread yoga's wisdom while staying true to its roots.

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Impact of Yoga Therapy and Varmam on Pain Reduction and Functional Ability in Middle-Aged Men with Musculoskeletal Pain Randomized Controlled Trail

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Abstract : The main goal is to ascertain whether a combined Yoga Therapy and Varmam treatment can help middle-aged men with chronic musculoskeletal pain, including spinal, shoulder, hip, and joint discomfort, to reduce pain and improve functional ability. The study is a parallel group, randomized controlled trial. The subjects were middle-aged men diagnosed with persistent musculoskeletal pain lasting over 3 months. A total of 60 participants were randomly divided into two groups: an experimental group (30) receiving Yoga Therapy and Varmam, and a control group (30) following active rest. The dependent variables were Pain (Visual Analog Scale), Functional Ability (Full-Body Functional Scale), and Flexibility & Strength Index. Pre- and post-tests were conducted on all participants for each outcome measure. The experimental group received structured sessions three times a week for twelve weeks, consisting of 45 minutes of Yoga (asanas, pranayama, relaxation) and 15 minutes of Varmam therapy per session. The control group maintained regular activities with active rest but no therapeutic intervention. The findings demonstrated significant reductions in pain and improvements in functional ability and flexibility/strength in the experimental group ($p < 0.001$) compared to controls. Thus, it may be said that Yoga Therapy combined with Varmam is highly effective for musculoskeletal rehabilitation in middle-aged men.

Key Words: Yoga Therapy, Varmam, Musculoskeletal Pain, Functional Ability, Flexibility, Middle-aged Men.

1. Introduction

Chronic musculoskeletal pain is a major cause of reduced quality of life in middle-aged men, often affecting the spine, shoulders, hips, and joints, leading to decreased work productivity and daily functioning. Standard treatments, including analgesics and physiotherapy, may not address the holistic needs of patients, leaving gaps in physical and energetic rehabilitation. Yoga Therapy, through asanas, pranayama, and deep relaxation, improves flexibility, posture, and parasympathetic activation, reducing pain perception. Varmam therapy, a Siddha-based manual technique stimulating vital energy points, alleviates pain and enhances circulation. Although both approaches have demonstrated benefits independently, their combined effect on full-body musculoskeletal pain in middle-aged men remains underexplored. This study evaluates the impact of Yoga Therapy and Varmam on pain, functional mobility, and physical performance.

2. Methods and Materials

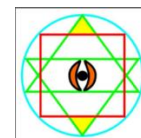
Study Design

A randomized controlled trial was conducted to evaluate the combined effects of Yoga Therapy and Varmam compared to active rest. Participants were assessed over 12 weeks for improvements in pain, functional ability, flexibility, and strength.

Participants



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Participants were recruited from community health centers and yoga clinics. Inclusion criteria: males aged 35–60, chronic musculoskeletal pain (>3 months), and ability to attend thrice-weekly sessions. Exclusion criteria: ongoing physiotherapy, previous Yoga/Varmam training, major orthopedic surgery, uncontrolled hypertension, neurological disorders, or unwillingness to consent. Participants provided written informed consent, and the protocol was approved by the Institutional Ethics Committee (KSYC/IEC/2025/07). Thirty participants were assigned to the experimental group and thirty to the control group using random number generation.

Selection Criteria

Inclusion: middle-aged men (35–60 years) with physician-diagnosed musculoskeletal pain involving spine, shoulders, hips, or major joints.

Exclusion: Patients with a fracture, cartilage, ligament and tendon tear. Patients should not have undergone any surgeries or medical procedures/medications within a specified timeframe. Individuals with chronic pain unrelated to sports activities should be excluded.

Intervention

The experimental group received a structured 12-week program consisting of 30 minutes of Yoga practices, 10 minutes of pranayama and 15 minutes of Varmam therapy focusing on pain-relief points along the spine, shoulders, hips, and extremities. Sessions were conducted thrice weekly. The control group maintained active rest: light walking and stretching but no structured Yoga or Varmam.

Table 1: Details of Yoga Intervention

Standard Program	List of Practices	Frequency	Duration
Sukshma Vyayama	Finger, wrist, elbow loosening exercises, shoulder rotation, toe ankle, stretch, ankle rotation, knee crack & bending, full butterfly pose	3 times each practice	10 min, three days per week, 12 weeks
Asana	Tadasana, Utthanpadasana, Setu Bandhasana, Shashankasana, Salabhasana, Pawanmuktasana, Paschimottanasana, Bhujangasana	5 times each asana	20 min, three days per week, 12 weeks
Pranayama	Nadishodhana pranayama, Sectional Breathing, OM Chanting	10 rounds each	10 min, three days per week, 12 weeks
Varma Therapy	Adankal Varmam	-	20 min, three days per week, 12 weeks

Control Group

Standard care instructions, such as compression stocking and guidance on physical activity in accordance with current standards were given to the control group.

Outcomes

The primary outcome measure was pain reduction assessed by Visual Analog Scale (VAS). Secondary outcomes included improvements in the Full-Body Functional Scale (FBFS) and a combined Flexibility & Strength Index (FSI). All outcomes were measured pre- and post-12 weeks by blinded assessors.

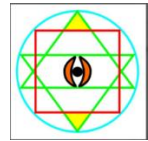


Table 2: Impact of Yoga Therapy and Varmam on Pain (VAS Scores)

Group	VAS (Mean Change)	SD	Paired t-test	p-value
Experimental (Yoga+Varmam)	-5.2	1.3	t=18.42	0.000 ***
Control (Active Rest)	-0.4	0.9	t=1.12	0.270 (N.S)

Independent t-test between groups: t=17.25, p=0.000 ***

Table 3: Functional Ability (FBFS)

Group	FBFS (Mean % Change)	SD	Paired t-test	p-value
Experimental (Yoga+Varmam)	+42%	8.4	t=20.11	0.000 ***
Control (Active Rest)	+3%	4.2	t=1.45	0.182 (N.S)

Independent t-test between groups: t=19.02, p=0.000 ***

3. Discussion

The study demonstrates that combining Yoga Therapy and Varmam produces significant reductions in musculoskeletal pain and improvements in functional ability, flexibility, and strength among middle-aged men. Pain relief was more pronounced and rapid compared to controls, likely due to Varma's analgesic effects and Yoga's role in posture correction and relaxation. These findings align with prior studies highlighting Yoga's benefits for chronic pain and Varma's capacity to restore energy balance.

4. Conclusion

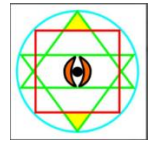
This randomized controlled trial provides strong evidence that a 12-week combined Yoga Therapy and Varmam program significantly reduces musculoskeletal pain and improves flexibility, strength, and functional ability in middle-aged men compared to active rest. Integrating these practices can be an effective, non-pharmacological strategy for holistic musculoskeletal rehabilitation.

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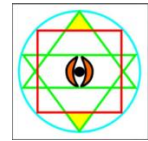
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Comparison of Cardiopulmonary Function and Psychological Well-Being Among College Students Undergoing Yogic Practices With and Without Dheergha Swasam: A Randomized Controlled Trial

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Abstract: Background: Yogic practices are known to enhance physical and mental health. Dheergha Swasam, or deep breathing, is a specific pranayama technique hypothesized to offer added benefits when integrated with yogic practices. Aim: To compare the effects of yogic practices with and without Dheergha Swasam on cardiopulmonary function and psychological well-being in college students. Methods: This randomized controlled trial involved 60 college students aged 18–25, randomly allocated into two groups: Group A (Yogic practices with Dheergha Swasam) and Group B (Yogic practices without Dheergha Swasam). The intervention lasted 12 weeks, with sessions conducted 5 days per week. Parameters assessed pre- and post-intervention included resting heart rate (RHR), blood pressure (BP), forced vital capacity (FVC), peak expiratory flow rate (PEFR), and WHO-5 Well-Being Index. Results: Group A showed statistically significant improvements in RHR ($p < 0.001$), systolic and diastolic BP ($p < 0.05$), FVC ($p < 0.001$), PEFR ($p < 0.01$), and WHO-5 scores ($p < 0.001$) compared to Group B. Conclusion: Integration of Dheergha Swasam with yogic practices resulted in superior cardiopulmonary and psychological benefits in college students, suggesting its potential as a low-cost, non-pharmacological intervention for youth well-being.

Keywords: Dheergha Swasam, yoga, college students, pulmonary function, well-being, randomized controlled trial.

1. Introduction

College students often face academic pressure, irregular lifestyles, and psychological distress, which can impact cardiopulmonary health and mental well-being. Yoga, an ancient Indian system, integrates physical postures (asanas), breathing techniques (pranayama), and meditation for holistic health. Among the various pranayama techniques, Dheergha Swasam (deep yogic breathing) is believed to regulate autonomic balance, enhance lung capacity, and reduce psychological distress. However, scientific literature comparing yogic practices with and without Dheergha Swasam in young adults is limited. This study seeks to address this gap through a structured randomized controlled trial.

Objectives

To assess the impact of yogic practices with and without Dheergha Swasam on cardiopulmonary parameters. To compare the psychological well-being outcomes between the two groups.

2. Materials And Methods

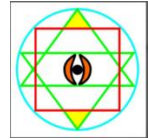
Study Design

A single-blind, parallel-group randomized controlled trial conducted over 12 weeks.

Participants



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Inclusion criteria:

College students aged 18–25 years

Willingness to participate for the full duration

Exclusion criteria:

Diagnosed cardiopulmonary or psychiatric disorders

Regular practice of yoga/pranayama in the past 6 months

Smokers or alcoholics

Sample Size: 60 Participants (30 Per Group)

Randomization And Grouping

Participants were randomly assigned into:

Group A: Yogic practices integrated with Dheergha Swasam

Group B: Yogic practices without Dheergha Swasam

Intervention Protocol

Component	Group A (With Dheergha Swasam)	Group B (Without Dheergha Swasam)
Loosening Practices	5 mins	5 mins
Asanas (Surya Namaskar, Tadasana, etc.)	20 mins	20 mins
Pranayama (Including Dheergha Swasam)	15 mins	15 mins (Other pranayama only)
Meditation/Relaxation	10 mins	10 mins

Frequency: 5 days/week for 12 weeks

Outcome Measures

Assessed pre- and post-intervention:

Cardiopulmonary Parameters:

- ✓ Resting Heart Rate (RHR)
- ✓ Blood Pressure (BP – SBP & DBP)
- ✓ Forced Vital Capacity (FVC)
- ✓ Peak Expiratory Flow Rate (PEFR)

Psychological Parameter:

- ✓ WHO-5 Well-Being Index (Validated)

Statistical Analysis

Paired and unpaired t-tests were used to analyze within-group and between-group differences. A p-value < 0.05 was considered statistically significant.

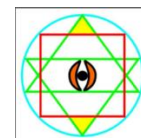
3. Result

Baseline Characteristics

No significant differences between the two groups at baseline in age, gender distribution, or outcome variables ($p > 0.05$).



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Within-Group Comparison

Group A: Significant improvement in all parameters post-intervention

Group B: Moderate improvement, but not statistically significant in PEFr and WHO-5

Between-Group Comparison (Post-Intervention):

Parameter	Group A Mean \pm SD	Group B Mean \pm SD	p-value
RHR (bpm)	68.2 \pm 4.1	73.5 \pm 5.2	<0.001
SBP (mmHg)	114.1 \pm 6.2	120.4 \pm 7.0	0.002
DBP (mmHg)	72.6 \pm 4.3	77.3 \pm 4.9	0.004
FVC (L)	3.81 \pm 0.32	3.43 \pm 0.28	<0.001
PEFR (L/min)	424 \pm 32	391 \pm 30	0.006
WHO-5 Score	88.3 \pm 5.7	79.4 \pm 6.2	<0.001

4. Discussion

The findings clearly demonstrate that the integration of Dheergha Swasam into a yoga regimen produces better outcomes in terms of both physiological and psychological domains. The improvement in cardiopulmonary parameters can be attributed to enhanced vagal tone and better oxygenation from deeper breaths. The psychological upliftment likely arises from improved autonomic regulation and mindfulness facilitated by Dheergha Swasam. Previous studies have shown pranayama to reduce stress and anxiety, but the specific benefit of Dheergha Swasam in youth populations has not been adequately explored until now.

5. Conclusion

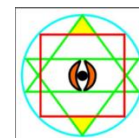
The study supports the inclusion of Dheergha Swasam in yoga protocols to achieve enhanced cardiopulmonary function and psychological well-being among college students. This simple, cost-effective intervention can be adopted by educational institutions for student wellness programs.

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Improving Lifestyle and Well-Being in Middle Age through Yoga

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Abstract: This paper explores the transformative role of yoga in enhancing the quality of life during middle age, particularly within the Grihastha phase of life. Middle age, marked by stress, physical changes, and emotional demands, requires holistic self-care strategies. Yoga offers practical tools—asana, pranayama, meditation, and ethical living—to balance daily responsibilities with inner growth. A 12-week intervention at Breathe and Bloom Yoga Centre integrated Vedic chants, satsang, and yogic practices. Participants showed improvement in cognitive functions, emotional stability, and stress resilience. Vedic chanting and early morning practice significantly contributed to spiritual well-being and mental clarity. Yoga enabled participants to harmonize material life with spiritual aspirations. The study affirms yoga as a holistic approach to support wellness and transformation in midlife.

Keywords: Yoga, Middle Age, Grihastha Ashrama, Vedic Chanting, Stress Management, Spiritual Well-being, Cognitive Enhancement, Lifestyle Transformation, Pranayama, Emotional Balance.

1. Introduction

Yoga is a way of life. Yoga is the ultimate practice for body, mind and being; blossoming of human potential to its fullness is yoga; the balance of intellectualism is the essence of yoga; “There is no greater power than yoga”-Gheranda Samhita. Lifestyle affects our mind. This paper explores the role of yoga in enhancing the quality of life during the middle-aged phase of life.

Middle age

Middle age is a crucial transitional phase, typically spanning from 40 to 60 years, marked by increased responsibilities and lifestyle challenges. It is often associated with physical decline, emotional stress, and a search for deeper meaning and balance. This stage calls for holistic self-care practices like yoga to maintain well-being and support inner transformation.

Grihastha Lifestyle in Yogic Philosophy

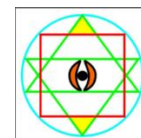
In the classical Indian ashrama system, life is divided into four distinct stages - Brahmacharya (studenthood), Grihastha (householder), Vanaprastha (retirement), and Sannyasa (renunciation)—each with its unique responsibilities and spiritual significance. Among these, the Grihastha ashrama is considered the most vital and dynamic phase of human life. It is during this stage that an individual engages fully with the world—through marriage, parenting, career, and social duties - while simultaneously striving for spiritual and ethical growth.

The Grihastha lifestyle is not merely about domestic living or fulfilling material responsibilities; it is deeply rooted in dharma (righteous living), artha (sustained prosperity), and kama (healthy desires)—all of which are to be pursued in balance, under the overarching aim of achieving moksha (liberation). Far from being a distraction from the spiritual path, Grihastha life is seen as the foundation of social and spiritual order, supporting all other ashramas through its stability, productivity, and generosity.

Yoga, when practiced in the context of Grihastha life, becomes a practical and transformative tool to navigate the complexities of modern existence—stress, overwork, emotional strain, health issues, and disconnection. It allows the householder to harmonize external responsibilities with inner calm and self-



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awareness. Asanas build physical resilience to carry out daily tasks with vitality; pranayama helps regulate emotions and stress; meditation sharpens the mind and reconnects the practitioner with higher purpose. Ethical practices like the Yamas (non-violence, truthfulness, non-stealing, moderation, and non-possessiveness) and Niyamas (purity, contentment, discipline, self-study, and surrender) guide the Grihastha to lead a life that is both materially fulfilling and spiritually meaningful.

The middle age is associated with physiological changes that may cause impaired daily function and aversion which leads to reduced quality of life. The recent survey has revealed that 87% of women are stressed out most of the time at this stage.

It highlights how yoga supports physical health, emotional balance, and mental clarity amidst the responsibilities of adulthood.

2. Materials and Methods

The research aimed to:

- Study the impact of a yoga intervention for physical, sexual and emotional aspects of middle age.
- Establish the ability of Vedic Chants to enhance the spiritual and psychological wellbeing.
- Promote the benefits of Satsang to encourage “**Humble life and Noble mind**”; and to spread a spirit of Companionship among all peoples by teaching the eternal basis of their unity.
- Access the response of stress reduction therapies.

Design

The practical method took place in Breathe and Bloom Yoga Centre, Coimbatore.

Participants

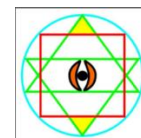
The participants were mixed group of men and women of middle age (40 to 60 years).

Intervention

1. The participants received a comprehensive yoga-based intervention for 12 consecutive weeks, consisting of daily one-hour sessions incorporating Yogasanas, Pranayama, meditative practices, Trataka, prayer, and value-oriented instruction.
2. Participants were systematically trained in the above yoga module during the Brahma Muhurtha - the auspicious pre-dawn period - recognized in yogic tradition as the most conducive time for spiritual and mental practices.
3. The diverse pathas or recitation styles were meticulously designed to ensure flawless memorization of the Vedic texts, preserving not only the words but also their precise pronunciation and pitch accents integral to Vedic intonation.
 - Gayathri Mantra
 - OM chanting
 - Chanting of Devata mantras
 - Vishnu Sahasranama
4. As part of their holistic journey, participants took part in weekly Shravana sessions, where sacred texts were not only heard and read, but also deeply contemplated, discussed with openness, meditated upon, and gently woven into the fabric of everyday life.
 - The participants incorporated Karma Yoga techniques emphasizing intentional action and thought, interpretive chanting and study of the Bhagavad Gita, and thematic discussions exploring the depth and cultural significance of ancient Indian Vedic traditions.



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3. Results

- Participants showed marked improvement in cognitive capacities, particularly in memory retention and recall, attentional control, concentration, visual tracking, and executive abilities like initiating appropriate responses and suppressing impulsive actions.
- Waking up early, as upheld by both tradition and research, is associated with greater vitality, mental clarity, and a higher potential for personal and professional success.
- Middle-aged women have been observed to experience relief from the intensity of menopausal symptoms over time.
- Research has examined Vedic chanting and mantra recitation as effective methods for mitigating physiological and psychological responses to acute stress.

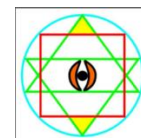
4. Conclusions

The Grihastha stage of life, traditionally regarded as the householder phase in Indian philosophy, corresponds with what is modernly referred to as middle age - a pivotal period characterized by personal, familial, and social responsibilities. It is a time when individuals are often deeply engaged in career building, nurturing relationships, and contributing to the well-being of their communities. However, this phase can also bring challenges such as stress, health concerns, and emotional fatigue. Integrating the principles of yoga—including asana, pranayama, dhyana, and value-based living—into this stage not only enhances physical and mental resilience but also nurtures inner balance and self-awareness. By embracing yogic wisdom, middle-aged individuals in the Grihastha phase can transform daily responsibilities into pathways of spiritual growth, leading to a more harmonious, purposeful, and fulfilling life.

Yoga is a time-tested, safe practice that enhances the quality of life in middle age, promoting balanced growth of the body and spirit as envisioned by ancient Indian seers.

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A Systematic and Scientific Impact of Varied Intergrate Modules of Yogic Practices on Breath Holding Time among Middle Aged Women

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Abstract: The objective of this investigation was to examine the effects of different integrated yogic practices on breath holding time among middle-aged women. The study population consisted exclusively of 60 middle-aged women in and around Sivagangai district, Tamil Nadu, aged between 35 and 55 years. Participants were randomly assigned to four groups of equal size ($n = 15$). Group I engaged in Asana practice. Group II performed Surya Namaskar, Group III followed a combined regimen of Asana and Surya Namaskar, while Group IV served as the control group. The intervention lasted for 12 weeks, with training sessions conducted thrice weekly, each lasting approximately 45 minutes. The control group did not undergo any form of specialized training. Breath Holding Time was measured manual method in seconds as the dependent variable for this study. Data from both experimental and control groups were subjected to statistical analysis using Analysis of Covariance (ANCOVA) and the dependent ‘t’ test. Findings revealed that the adjusted post-test means yielded an ‘F’ ratio that was statistically significant, indicating notable differences among the groups. The results demonstrated that participants in the combined Asana and Surya Namaskar group experienced a greater reduction in Breath holding time pressure compared to those practicing only Asana or only Surya Namaskar. This suggests that an integrated approach incorporating both practices is more effective in lowering Breath holding time in middle-aged women.

Keywords: Middle aged women, Asana, Surya Namaskar, Breath Holding time.

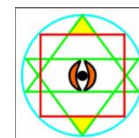
1. Introduction

Breath-holding capacity is a key indicator of respiratory efficiency and overall cardiorespiratory health. It reflects the functional ability of the lungs, respiratory muscles, and the body’s tolerance to increased carbon dioxide levels. Among middle-aged women, physiological changes related to age, sedentary lifestyles, and stress often contribute to reduced respiratory efficiency and diminished breath-holding time. This decline can have implications for overall health, vitality, and well-being.

Yogic practices, rooted in traditional Indian wellness systems, have long been recognized for their profound influence on respiratory function. Techniques such as Asanas (postures), Pranayama (breathing exercises), and Surya Namaskar (sun salutations) not only enhance muscular and joint flexibility but also optimize pulmonary ventilation and strengthen the respiratory musculature. When practiced in an integrated manner, these modules work synergistically to improve lung capacity, enhance oxygen utilization, and increase the efficiency of respiratory control mechanisms.

Middle-aged women, in particular, may benefit significantly from such interventions. Previous research has demonstrated that yogic training can improve parameters such as vital capacity, peak expiratory flow rate, and breath-holding time. However, comparative studies assessing the impact of varied integrated modules of yogic practices on breath-holding capacity in this demographic remain limited.

The present study aims to fill this gap by examining the effect of different combinations of yogic practices on breath-holding time among middle-aged women. By evaluating and comparing the outcomes of varied integrated yogic modules, the research seeks to identify the most effective approach for enhancing respiratory efficiency and promoting overall health in this population.



2. Methods and Materials

The present study was undertaken to examine the effect of various integrated yogic practices on breath holding time among middle-aged women, A total of sixty (N = 60) female participants was randomly selected from in and around Sivagangai district, Tamil Nadu, India, within the age range of 35 to 55 years. These participants were evenly assigned to four groups, each comprising fifteen members. Group I engaged exclusively in Asana practice, Group II performed Surya Namaskar, Group III followed a combination of Asana and Surya Namaskar, while Group IV server as the control group.

3. Testing Procedure

The training programme was conducted three times per week over a period of twelve weeks, with each session lasting approximately 45 minutes. Data were gathered from the participants both prior to and following the training intervention.

S.No	Variables	Test Items	Unit of Measurement
1	Breath Holding Time	Manual Method	In Seconds

Analysis of Data

Table 1: Mean and dependent ‘t’ test Breath holding time on experimental groups and control group

Mean	Asana	Surya namaskar	Combined Asana & Surya namaskar	Control group
Pre-test	29.10	28.89	29.12	28.11
Post-Test	32.00	32.12	33.85	20.20
‘t’ test	3.10*	2.27*	3.50*	0.08

*significant at 0.05 level of confidence

Table-I shows that the obtained ‘t’ values on breath holding time of Asana, Surya namaskar, combined and control group are 3.10, 2.27,3.50 and 0.08 respectively . since table value required for significant difference with 3 df 14 at 0.05 level 2.78 significant improvement in breath holding were seen in experimental groups, including the Asana, Surya namaskar, Combined Asana & Surya namaskar and control group.

Table 2: Analysis of Covariance on Breath holding time of experimental groups and control group

Adjusted Post- test means				Source of variances	Sum of Squares	df	Mean Square	‘F’ ratio
Asana Group	Surya namaskar	Combined Group	Control group					
32.65	32.05	33.60	28.90	Between	180.64	3	60.21	32.73*
				Within	100.92	5	1.83	

*significant at 0.05 level of confidence

Table II indicate that the adjusted post-test means scores for the Asana group, Surya namaskar group, combined Asana and Surya namaskar group and the control group were 32.65,32.05,33.60 and 28.90 respectively. The computed ‘F’ ratio of the corrected post test score exceeded the table value of 2.78 at 3

and 56 degree of freedom, confirming statistical significance at the 0.05 level of confidence for breath holding time.

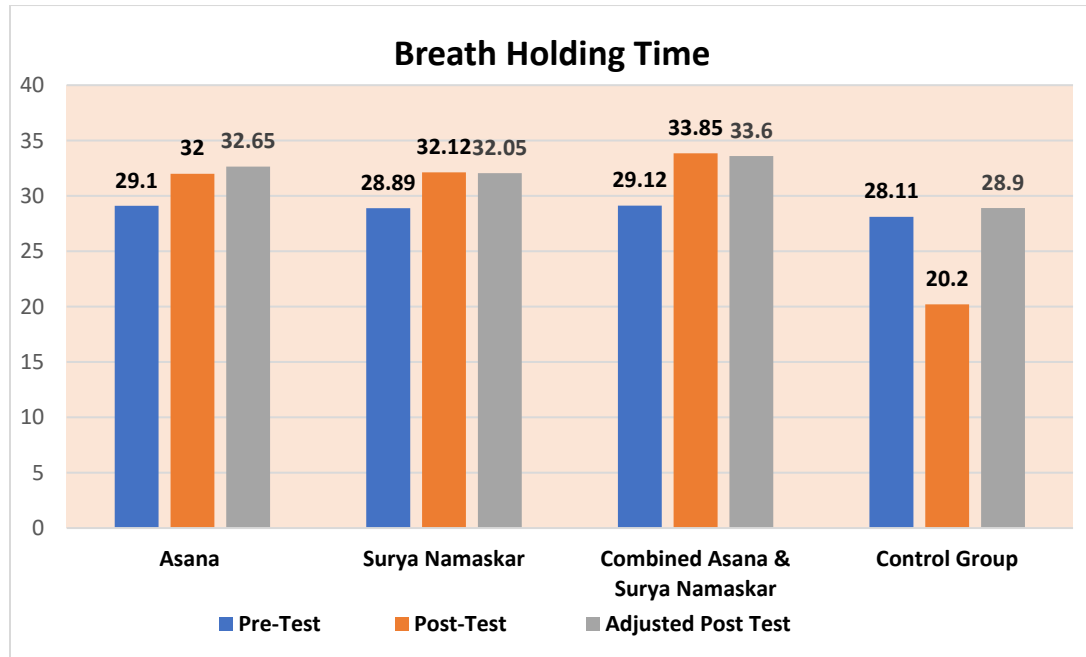


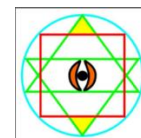
Figure 1. Pre, Post, and Adjusted Post test mean values of Asana, Surya namaskar, combined group and Control group on Breath holding time

4. Conclusion

It was Concluded that the experimental group namely the Asana group, the surya namaskar group and the combined asana and surya namaskar group showed a significant enhancement in breath holding time

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Effect of Yogic Practices and Aerobic Dance on Achievement Motivation among Basketball Players

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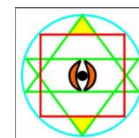
Abstract: The goal of this study is to determine the Effect of Yogic Practices and Aerobic Dance on Achievement Motivation in Basketball Players. The aim of this research is to develop Yogic Practices and Aerobic Dance program and assess how well it works to improve Psychology Factor. 45 women Basketball Players from Alagappa University College of Physical Education and Umayal Ramanathan College for Women, Karaikudi, Tamilnadu were took part in the study. They were split in to three groups: Yogic Practices group, Aerobic Dance Group and Control group. The eight week training regimen included progressively difficult exercises that aimed to increase the Achievement Motivation level. With each passing week, the program gets harder and more complicated. Standardized testing protocols were utilized to evaluate Achievement Motivation both before and after the training program. When comparing the experimental group's Achievement Motivation levels to those of the control group, the results showed a considerable improvement. The "t" test foundation and analysis of covariance (ANCOVA) were used to analyze the data. The difference in the paired description was ascertained using Scheffe's post hoc test whenever the 'F' ratio of the adjusted post-test techniques was determined to be significant. In every instance, the confidence level was fixed at 0.05.

Keywords: Yogic Practices, Aerobic Dance, Achievement Motivation.

1. Introduction

Yoga is the practice of being one with one's inner self. After the quality of matter and mind are dissolved into ultimate reality, this unity results. It's a science that helps each person approach the truth. Attaining the truth—where the individual soul aligns with the ultimate soul, or god—is the goal of all yoga practices. The most reliable treatments for both physical and psychological ailments in humans are found in yoga. It has a positive impact on how well the human body functions internally and encourages the organs to become more active. Yoga teaches both the physical and mental facets of re-education. Easy yoga poses are a terrific way to unwind after a game or to warm up before practice with a ball. Postures such as the forward bend of the distributing leg are examples of special workouts. Here, the participants take a seat with their legs as wide as they can. They lead after that and touched the ground with their hands. After holding this position for fifteen seconds, they go back up. They repeat this process ten to fifteen times. This is made easier in this instance by the extended hamstrings and calf muscles. You can start practicing this wonderful Yogic technique right away (Iyengar, 2001).

A set of callisthenic rhythmic motions performed to music is known as aerobic dance. It is an inspiring technique that has increased in recent years. Aerobic literally means 'Spirit'. According to Sorensen and Jackie (1972), aerobic dancing is a sort of exercise where the amount of oxygen consumed and the amount needed are equal. Aerobic Dance have evolved from rigidly choreographed dance routines intended for female participants to free style routines that incorporate random combination of dance, sport and exercise movements designed to attract men and women.



2. Methods and Materials

Subjects

From Alagappa University College of Physical Education and Umayal Ramanathan College for Women in Karaikudi, Tamilnadu, 45 female basketball players were chosen in order to meet the research goal. 18 to 25 years old was the age range of the study. Thirteen people were split up into three groups: the Aerobic Dance group, the Yogic Practices group, and the Control group. If the subjects had any problems before, during, or after the test, they could easily withdraw their agreement. All participants in the trial remained, though. Studies have additionally received formal permission.

Testing Procedure

The eight week training included progressively difficult exercise that aimed to decrease the Variable of Psychology i.e Achievement Motivation. After every week, the training gets harder and more complicated. Before and after training program standardized testing procedures were used to assess Achievement Motivation.

S.No	Criterion Variable	Test Items	Unit of Measurement
1.	Achievement Motivation	SAMT Questionnaire	In Numbers

Statistical Technique

An analysis of covariance (ANCOVA) and a "t" test assessment were used to evaluate the data. Scheffe's post hoc test was employed to ascertain in the paired description whenever the 'F' ratio of modified post-test techniques was determined to be significant. In every instance, the confidence level was set at 0.05.

Table 1.1: Computation of dependent 't' test on Achievement Motivation
(Scores in Numbers)

Mean	Yogic Practice group	Aerobic Dance group	Control group
Pre – test	28.40	28.20	27.33
Post – test	31.27	30.33	27.47
't'-test	3.29*	2.87*	0.11

* Significant at 0.05 level (Table value required for 't' test with df 14 is 2.15)

According to Table 1.1, the Yogic practices group, the aerobic dancing group, and the control group had corresponding pre-test averages on Achievement Motivation of 28.40, 28.20, and 27.33. The respective post-test averages are 31.27, 30.33, and 27.47. Between the pre- and post-test averages, the dependent t-ratio values obtained are 3.29, 2.87, and 0.11, respectively. 2.15 is the table value needed to have a meaningful difference with df at the 0.05 level. It was determined that the experimental group's Achievement Motivation had significantly improved.



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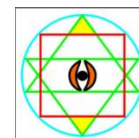


Table 1.2: Computation of Analysis of Covariance on Achievement Motivation

Test	Yogic Practice group	Aerobic Dance group	Control group	Source of Variance	Sum of squares	df	Mean squares	f ratio
Pre test	28.40	28.20	27.33	Between	10.32	3	3.44	1.41
				Within	135.27	56	2.43	
Post test	31.27	30.33	27.47	Between	388.98	3	129.66	59.71*
				Within	121.60	56	2.17	
Adjusted post test mean	30.96	30.15	27.84	Between	366.35	3	122.12	100.65*
				Within	66.73	55	1.21	

*Significant at 0.05 level of Confidence

Table Value for df (3,56) at 0.05 level=2.76 Table value for df (3,55) at 0.05 level=2.78

The above table 1.2 shows that the pre-test mean values of experimental and control groups are 28.40, 28.20 and 27.33 respectively. The obtained 'F' ratio of 1.41 for pre-test scores was lesser than the table value of 2.76 for degree of freedom 3 and 56 required for significance at 0.05 level of confidence.

The post-test mean values of experimental and control group are 31.27, 30.33 and 27.47 respectively. The obtained 'F' ratio of 59.71 for post-test scores was higher than the table value of 2.76 for degrees of freedom 3 and 56 required for significance at 0.05 level of confidence.

The adjusted post-test mean values of experimental and control group are 30.96, 30.15 and 27.84 respectively. The obtained 'F' ratio of 100.65 for adjusted post-test score was higher than the table value of 2.78 for degree of freedom 3 and 55 required for significance at 0.05 level of confidence.

The result of the study indicates that there are significant differences among the adjusted post-test means of all experimental groups.

Table 1.3: Scheffe's Post Hoc Test on Anxiety

Adjusted Post Test Means			Mean Differences	Confidence Interval
Yogic Practices Group	Aerobic Dance Group	Control Group		
30.96	30.15		0.81	1.16
30.96		27.84	3.12*	1.16
	30.15	27.84	2.32*	1.16

*Significant at 0.05 level of confidence

Table 1.3 shows that the adjusted post test means differences of above said comparison are 3.12 and 2.32 respectively, which are greater than the confidence interval value of 1.16 there is significant at 0.05 level of confidence. The comparisons of Yogic practices group and Aerobic dance group is 0.81, which is less than the confidence interval value of 1.16 there was insignificant at 0.05 level of confidence. The above data reveals that the experimental group had shown better performance in Achievement Motivation.

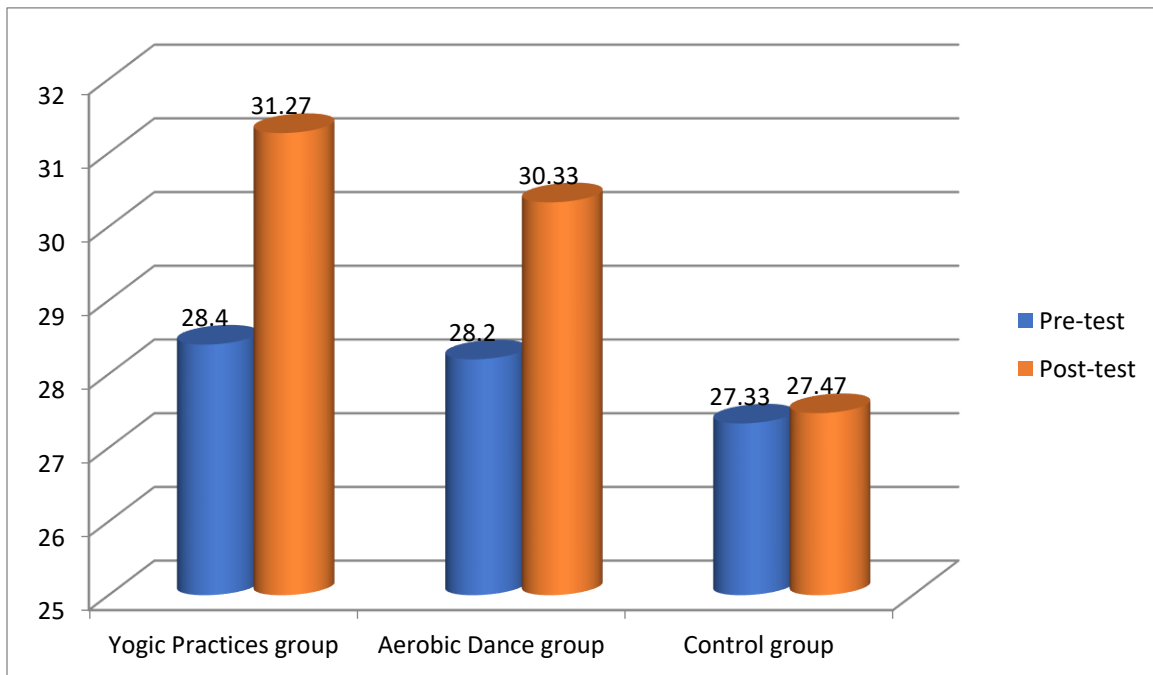


Figure 1.1. The Pre-test and Post-Test Mean Values on Achievement Motivation

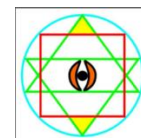
3. Conclusions

The study's findings led to the following conclusions being made.

1. The outcomes demonstrate a noteworthy improvement in Achievement Motivation as a result of the impact of aerobic dance and yoga.
2. The outcome demonstrates that the experimental group's performance significantly improved as a consequence of the impact of aerobic dance and yoga practices.

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Effects of Yogic Practices and Combined Yogic-Bokwa Training on Mental Toughness and Goal-Setting Ability among University Volleyball and Basketball Female Athletes

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Abstract: Background: In the realm of sports two essential psychological traits that have a direct impact on athletic achievement are mental toughness and goal-setting skills, particularly in high-intensity team sports like basketball and volleyball. While goal-setting promotes strategic planning, motivation, and consistent effort toward performance targets, mental toughness helps athletes stay focused, resilient, and confident under duress. Due to the pressures of competition and erratic motivation, female collegiate athletes frequently face particular difficulties in sustaining these qualities. With its focus on self-awareness, self-control, and discipline, yoga may improve mental toughness. By increasing engagement and cognitive flexibility, Bokwa fitness, a dynamic, rhythm-based cardio workout, can stimulate goal-directed behavior. When combined, these therapies present a viable strategy for developing female athletes' psychological preparedness and consistency of performance. Aim of the Study: The purpose of this study is to assess how two specific psychological variables mental toughness and goal-setting ability are affected in female collegiate basketball and volleyball players by yoga practices and the combination of yoga and Bokwa fitness training. Comparing these results to a control group that does not receive any kind of intervention is another goal of the study. Methods: A total of 90 male university volleyball and basketball athletes, aged between 18 and 25 years, were randomly assigned into three groups: Group I (n=30) practiced only yogic exercises, Group II (n=30) participated in both yogic practices and Bokwa fitness training, and Group III (n=30) served as the control group. Psychological assessments were conducted before and after the 8-week intervention period using Mental Toughness Questionnaire (MTQ-48): Assesses four dimensions—Confidence, Challenge, Control, and Commitment, Goal-Setting Ability Scale (GSAS): Evaluates clarity, strategy, persistence, and motivation in goal-setting behavior. The data were analyzed using repeated measures Analysis of Variance (ANOVA) to compare group differences and paired t-tests to assess within-group changes to determine the effects of the interventions on the psychological variables. Conclusion: The study investigated the effects of yogic practices and combined Yogic-Bokwa fitness training on mental toughness and goal-setting ability among female university volleyball and basketball athletes. The results demonstrated statistically significant improvements in both psychological variables and for the intervention groups, with the combined training group showing the greatest gains ((mental toughness-+18.5, Goal-setting ability-+12.5).

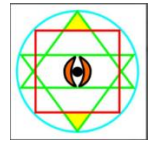
Keywords: Yogic practices, Bokwa fitness training, Psychological variables, Mental toughness, Goal-setting.

1. Introduction

In the competitive landscape of collegiate sports, psychological resilience and strategic focus are as vital as physical prowess. Among the most influential psychological traits in athletic performance are mental toughness and goal-setting ability, especially in high-intensity team sports like basketball and volleyball. Mental toughness enables athletes to maintain composure, confidence, and perseverance under pressure, while goal-setting fosters motivation, clarity, and sustained effort toward performance objectives (1) (2).



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Female collegiate athletes often encounter unique psychological challenges, including heightened sport anxiety, fluctuating motivation, and increased vulnerability to stress and burnout (3)(4). These factors can undermine consistency and peak performance, making psychological interventions a critical component of athletic development. Yoga, with its emphasis on mindfulness, breath control, and self-regulation, has been shown to enhance mental resilience and emotional balance, thereby supporting mental toughness (5)(6). Meanwhile, Bokwa fitness, a rhythm-based cardio workout that integrates dance and movement patterns, promotes cognitive engagement and goal-directed behavior through its dynamic and enjoyable format(7).

2. Materials and Methods

Participants

The study involved a total sample of 90 female university athletes between the ages of 18 and 25 years, all actively participating in either volleyball or basketball. To ensure unbiased distribution, participants were randomly assigned into three equal groups of 30 individuals each. Group I engaged exclusively in yogic practices, focusing on mindfulness, breath control, and physical postures. Group II participated in a combined intervention that included both yogic practices and Bokwa fitness training, a rhythm-based cardio workout designed to enhance cognitive engagement and goal-directed behavior. Group III served as the control group, receiving no intervention throughout the study period. This structured sampling approach allowed for a clear comparison of psychological outcomes across different training modalities.

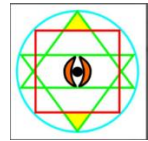
Research Design

The combination of these practices offers a promising, holistic approach to strengthening psychological traits essential for athletic success. This study employed a true experimental design with a pre-test/post-test control group structure to examine the effects of yogic practices and combined Yogic-Bokwa fitness training on mental toughness and goal-setting ability. Participants were randomly assigned to one of three groups to ensure internal validity and minimize selection bias.

Intervention Protocol

The intervention protocol was implemented over a total duration of eight weeks. Participants attended five sessions per week, with each session lasting 60 minutes. This consistent schedule was designed to ensure adequate exposure to the intervention while maintaining feasibility and participant engagement throughout the study period. The intervention protocol consisted of three distinct groups. Group I followed the Yogic Practices Module, which included a series of asanas (postures) such as Surya Namaskar, Trikonasana, Bhujangasana, and Shavasana to promote physical flexibility, balance, and relaxation. This was complemented by pranayama techniques like Anulom-Vilom and Bhramari to regulate breathing and reduce stress, followed by 10–15 minutes of guided breath awareness meditation to enhance mindfulness and inner calm. Group II participated in a Combined Yogic-Bokwa Module, incorporating the same yoga component as Group I along with an additional Bokwa component. The Bokwa segment involved 30 minutes of high-energy rhythmic cardio exercises, featuring movements based on English alphabets and numbers. This dynamic activity was designed to boost coordination, motivation, and overall engagement. Group III served as the control group and did not receive any psychological or physical intervention during the study period, maintaining their regular routines without exposure to the experimental modules.

The study utilized two primary measurement tools to assess psychological attributes relevant to performance and personal development. The Mental Toughness Questionnaire (MTQ-48) was employed to evaluate four key dimensions of mental toughness: Confidence, Challenge, Control, and Commitment. This tool provided a comprehensive understanding of participants' psychological resilience and ability to cope with pressure. Additionally, the Goal-Setting Ability Scale (GSAS) was used to measure participants' effectiveness in setting and pursuing goals. It assessed aspects such as clarity of objectives, strategic



planning, persistence in overcoming obstacles, and intrinsic motivation, offering valuable insights into their goal-oriented behavior.

Statistical Analysis

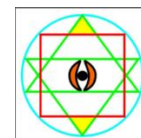
To evaluate the effectiveness of the interventions, the study employed Analysis of Variance (ANOVA) to compare differences between the three groups, allowing for the identification of statistically significant variations in psychological outcomes. Additionally, paired t-tests were conducted to assess within-group changes from pre- to post-intervention, providing insight into the impact of each training modality on individual participants. A significance level of $p < 0.01$ was used to determine statistical relevance, ensuring that only highly reliable results were considered meaningful in interpreting the effects of yoga and Bokwa fitness on mental toughness and goal-setting ability.

3. Results

1. Mental Toughness

Group	Pre-Test Mean	Post-Test Mean	Mean Difference	SD (Pre)	SD (Post)
Group I (Yoga)	118.2	130.7	+12.5	9.6	8.3
Group II (Yoga + Bokwa)	119.4	137.9	+18.5	10.1	7.9
Group III (Control)	117.8	118.6	+0.8	9.3	9.1

The data highlights the effectiveness of physical interventions—specifically Yoga and a combination of Yoga with Bokwa—in improving participant outcomes. Group I, which practiced Yoga alone, showed a meaningful improvement, with the mean score increasing from 118.2 to 130.7, a gain of 12.5 points, and a decrease in standard deviation from 9.6 to 8.3, suggesting more consistent results post-intervention. Group II, combining Yoga and Bokwa, achieved the most significant enhancement, with the mean rising from 119.4 to 137.9—an increase of 18.5 points—and a drop in standard deviation from 10.1 to 7.9, indicating both strong effectiveness and improved consistency. In contrast, Group III, which did not undergo any intervention, showed minimal change with only a 0.8-point increase in mean (117.8 to 118.6) and a negligible difference in standard deviation (from 9.3 to 9.1), signifying that the observed improvements in the other groups were likely a result of the interventions. Overall, the data underscores that combining Bokwa with Yoga yields the most substantial and reliable outcomes, followed by Yoga alone.



2. Goal-Setting Ability

Group	Pre-Test Mean	Post-Test Mean	Mean Difference	SD (Pre)	SD (Post)
Group I (Yoga)	62.5	71.1	+8.6	6.2	5.7
Group II (Yoga + Bokwa)	63.1	75.6	+12.5	6.5	5.4
Group III (Control)	62.3	62.8	+0.5	6.3	6.1

The table presents a comparative analysis of three groups—Group I (Yoga), Group II (Yoga + Bokwa), and Group III (Control)—based on their pre- and post-test scores. Group I, which practiced only Yoga, showed a noticeable improvement with a pre-test mean of 62.5 rising to a post-test mean of 71.1, resulting in a mean increase of 8.6 points. The reduction in standard deviation from 6.2 to 5.7 suggests enhanced consistency among participants. Group II, combining Yoga with Bokwa exercises, exhibited the greatest improvement, with scores increasing from 63.1 to 75.6—a mean difference of 12.5 points—alongside a significant decrease in standard deviation from 6.5 to 5.4, indicating both effectiveness and uniformity in outcomes. In contrast, Group III (Control), which underwent no intervention, displayed minimal change, with the mean increasing from 62.3 to 62.8 and the standard deviation only slightly decreasing from 6.3 to 6.1. This pattern reinforces the positive impact of physical activity interventions, especially the synergistic benefits of combining Yoga with Bokwa.

4. Discussion

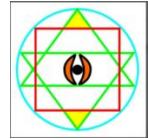
The present study investigated the effects of yogic practices and combined Yogic-Bokwa fitness training on mental toughness and goal-setting ability among female university volleyball and basketball athletes. The results demonstrated statistically significant improvements in both psychological variables for the intervention groups, with the combined training group showing the greatest gains.

1. Mental Toughness Enhancement

Mental toughness is a critical determinant of athletic success, encompassing confidence, control, commitment, and the ability to thrive under pressure. The significant improvement observed in both intervention groups suggests that:

- Yogic practices—through breath control, meditative focus, and disciplined postures—enhanced athletes' emotional regulation, concentration, and resilience.
- Bokwa fitness, when combined with yoga, added a dynamic and engaging component that likely boosted energy levels, motivation, and stress tolerance. The rhythmic, high-intensity nature of Bokwa may have activated cognitive and emotional systems that complement the calming effects of yoga, resulting in a more robust psychological profile.

Group II's superior performance (+18.5 in mental toughness) supports the hypothesis that integrating mind-body practices with energetic movement creates a synergistic effect, fostering both inner stability and external adaptability.



2. Improved Goal-Setting Ability

Goal-setting ability is essential for strategic planning, persistence, and motivation in sports. The interventions positively influenced this trait, with Group II again showing the highest improvement (+12.5), followed by Group I (+8.6).

- Yoga's emphasis on mindfulness and intentionality may have helped athletes clarify their goals and maintain focus.
- Bokwa's structured yet expressive format likely encouraged active engagement and self-directed effort, reinforcing goal-oriented behavior through movement and rhythm.

The minimal change in the control group confirms that these improvements were not due to natural progression or external factors, but rather the targeted psychological interventions.

3. Implications for Athletic Training

These findings have practical implications for coaches, trainers, and sports psychologists:

- Incorporating yoga into training routines can enhance mental resilience and clarity, especially in high-pressure sports.
- Adding Bokwa fitness may further energize athletes and improve their ability to pursue goals with enthusiasm and consistency.
- Combined interventions offer a holistic approach to psychological conditioning, balancing calmness with vigor, and discipline with creativity.
-

4. Limitations and Future Directions

While the study yielded promising results, certain limitations should be acknowledged:

- The sample was limited to female athletes from two sports; future research could explore broader populations and include male athletes.
- Long-term effects were not assessed; follow-up studies could examine sustained psychological benefits over competitive seasons.
- Qualitative feedback from participants could enrich understanding of subjective experiences and motivational shifts.

5. Conclusion

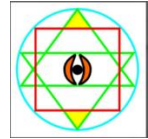
Based on the analyzed data, it is evident that both Yoga and the combination of Yoga with Bokwa significantly contribute to improving participant outcomes. Among the three groups studied, the group engaged in Yoga combined with Bokwa demonstrated the most substantial and consistent progress, as reflected by the highest mean improvement and reduced variability. The group practicing only Yoga also showed notable positive changes, while the control group experienced negligible difference, reinforcing the effectiveness of physical intervention. In conclusion, structured fitness programs especially those that integrate dynamic elements like Bokwa with traditional practices like Yoga appear to offer measurable benefits that surpass those achieved through either practice alone or no intervention at all.

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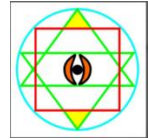
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The Effects of Tabata High-Intensity Interval Training on Physical Fitness and Specific Endurance of Football Players

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Abstract: Background and study aim: The purpose of the study is to find out effects of the Tabata HIIT training on the physical parameters and special endurance of soccer players. Materials and methods: The study included forty male soccer players who were chosen from the University of Calicut based on their performance in highly competitive intercollegiate matches. Soccer players are randomly allocated to either a control group (CG) or an HIIT group (EG) utilizing the Tabata protocol as part of the study's randomized controlled trial methodology. For a duration of 12 weeks, the HIIT group followed the Tabata protocol three times a week, while the control group continue to with their usual training schedule. The physical characteristics and unique endurance of the subjects will be evaluated both prior to and following the intervention session. Result: The result of the study finds that after 12 weeks of HIIT Tabata training, there have been significant improvements in cardiovascular endurance, speed, agility, muscular endurance, and speed endurance of soccer players ($p < 0.05$). Conclusion: The research's findings advocate that 12-week HIIT Tabata training protocols have a greater effect than control group on significantly improved physical parameters and special endurance of soccer players.

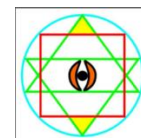
Keywords: Tabata training, HIIT, physical fitness, special endurance, Football players.

1. Introduction

Soccer is a physically difficult activity that calls for a special set of technical, tactical, and physical abilities(1). Players need to have good ball control, be able to move fast and correctly, have power, and be able to read and respond to their opponents(2). Players need to be able to use these abilities reliably and under duress in order to succeed. Keeping up a high level of physical fitness during the game—often referred to as exceptional endurance—is one of the most important characteristics of soccer(3). According to Hameed and Mohammed (4), special endurance refers to the capacity to maintain a high degree of physical activity for an extended period of time, usually between 90 and 120 minutes. For soccer players, endurance is essential since it allows them to play at their peak throughout the game, recover fast in between plays, and maintain their level of performance overall.

Many sports have adopted high-intensity interval training (HIIT) as a means of enhancing physical fitness and endurance. Particularly the Tabata protocol has become more accepted because of its ability to boost anaerobic capacity and workout intensity. Short bursts of intense activity are interspersed with rest intervals in this plan(5). In a variety of sports, including soccer, the Tabata protocol successfully increases endurance and boosts athletic performance(6). Izumi Tabata created the Tabata protocol in 1996. It is a high-intensity interval training (HIIT) regimen that consists of quick, intense bursts of exercise interspersed with short rest intervals. Research has shown that it greatly improves anaerobic and aerobic capacity(7) (8, 9). According to Viana et al.(10), the regimen usually consists of eight cycles of 20-second bursts of vigorous exercise followed by 10-second rest intervals.

On the other hand, nothing is known about how the Tabata protocol affects soccer players' unique endurance and physical characteristics. The purpose of this study is to look at how the Tabata protocol, a high-intensity interval training method, affects soccer players' physical characteristics and unique endurance. This study's precise goals are to ascertain how the Tabata protocol affects soccer players' physical attributes, such as speed, agility, and cardiovascular endurance, as well as how it affects their unique endurance.



2. Material and Method

Participants

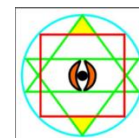
The study included forty male soccer players who were chosen from the University of Calicut based on their performance in highly competitive intercollegiate matches. Prior to beginning the study, they received extensive training in soccer-specific drills. Soccer players will be randomly allocated to either a control group (CG) or an HIIT group (EG) utilizing the Tabata protocol as part of the study's randomized controlled trial methodology. For a duration of 12 weeks, the HIIT group will follow the Tabata protocol three times a week, while the control group will carry on with their usual training schedule. The physical characteristics and unique endurance of the subjects will be evaluated both prior to and following the intervention session. All samples met the following requirements in order to be included: (i) they were fully motivated to train and excited about the opportunity; (ii) they had no musculoskeletal issues or pre-existing illnesses that would have affected their performance; (iii) they had the skills and ability to perform well in soccer drills and matches; and (iv) their fitness levels were in the upper percentiles of their team. With permission from the Department of Physical Education Research Committee, the participants gave their free agreement after being told about the study's goals and methods.

Experimental design

The researchers conducted a non-randomized study with two groups: an experimental group and a control group. There is a pre-test and post-test design to evaluate the effects of the Tabata protocol. The study was divided into four different phases:

- **The First Phase:** This preparatory phase lasted one week and familiarized the subjects with the assessment methods, the exercises, and the Tabata program. During this phase, the researchers also checked the reliability of the tests, equipment, and devices to be used during the study. In addition, demographic information and baseline data were collected from all participants to ensure accurate tracking of progress and changes over time.
- **Second Phase:** The second phase included one week of pre-testing. During this time, baseline measurements were taken from all participants. These measurements included physical parameters such as 30 m, 50 m sprint, agility, cardiovascular endurance, and specific endurance tests which were crucial for later comparisons.
- **Third Phase:** The participants completed their respective training programs over 12 weeks. The experimental group followed the Tabata protocol, a high-intensity interval training method, while the control group continued their normal training program. This phase was crucial for observing the potential effects of the Tabata protocol on the physical parameters and specific endurance of the football players.
- **Fourth Phase:** The final phase consisted of a one-week post-test in which the same protocols and tests as the pre-test were performed again to measure any changes and results. This comparison between the pre-test and post-test results allowed the researchers to assess the effectiveness of the Tabata protocol in improving the physical fitness metrics and specific endurance of the football players.

Throughout the study, rigorous data collection and analysis ensured that the results were robust and reliable, providing valuable insight into the effects of high-intensity interval training on football players.



Training intervention

The course of instruction was the experimental group completed 36 sessions over the course of the 12-week intervention, or three sessions each week, each lasting 60 to 70 minutes. There was a minimum of 48 hours permitted for recovery in between running sessions. Before every session, the participants warmed up for fifteen minutes by running and performing stretches. After that, HIIT utilizing the Tabata protocol was done for ten to twenty minutes. After that, the participants practiced football skills for thirty minutes, and the final ten minutes of the session were devoted to cooling down. During that same period, the control group continued with their regular exercise regimen.

Table 1: Details of Tabata Protocol intervention

Weeks	Exercise	Workload- Rest	Set Duration	Rest Sets	B/W
1-4 weeks	High knee sprint Jumping squats Burpees Sand sprint	20 sec-10 sec	4 x 2 =8 minutes	2 minutes	
5-8 weeks	Plank leg raises Toe-tap hops Tuck jumps Sprint		4 x 3=12 minutes		
9-12 weeks			4 x 4=16 minutes		

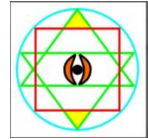
3. Procedures

Three distinct examinations, separated by 48 hours, were conducted on the test individuals. Cooper's 12-minute running test was used to measure cardiorespiratory endurance during the first session. Three tests were conducted in the second session: the T-test (directional change) for agility, the 30- and 50-meter sprints for speed, and the 60-second sit-up and squat test for strength endurance. There was a 45-minute break between each of these examinations. The repeated sprint test (6 x 30 m) was used in the third session to evaluate anaerobic speed endurance. Participants engaged in a 10-minute warm-up that included low-intensity workouts including stretching and jogging before each assessment session.

Cooper's 12-minute running test was used to assess cardiorespiratory endurance. Over the course of 12 minutes, subjects completed as many laps as they could on a 400-meter track, with an activity band tracking their mileage. Every participant finished two trials, separated by a 24-hour rest period. It is believed that this test measures cardiorespiratory endurance validly and reliably (11, 12).

Utilizing the 50-meter sprint test, speed was assessed. The task given to the subjects was to run 50 meters as quickly as they could. A stopwatch was used to record the amount of time needed to finish the sprint. After a 24-hour break in between each experiment, each participant completed two trials. It is believed that this test is a reliable and valid way to measure speed (13).

For directional change, the T-test was used to assess agility. Three cones were arranged in the shape of a T to conduct the test. Starting at the base of the T, the subjects ran forward and touched the middle cone when instructed to do so. After touching the left cone, they shuffled back to the middle cone, touched it once



more, and eventually retraced their steps to the beginning(14). A stopwatch was used to record the amount of time needed to finish the exam. After a 24-hour break in between each experiment, each participant completed two trials. This agility test is regarded as a legitimate and trustworthy tool(15).

Multiple sit-ups and squats were used to gauge muscular endurance(16). The sit-up test measured hip flexor and abdominal muscle endurance, while the repeated squat test examined lower body strength and endurance. The subjects were told to perform as many repetitions as they could in one minute, and only reps that were accurately executed were recorded. According to several studies (17, 18) these exams are regarded as credible and valid field-based assessments.

Anaerobic speed endurance was evaluated using the six-times-30-meter sprint test. Six consecutive maximally intense sprints lasting 30 meters each made up this test. The task assigned to the participants was to run six 30-meter sprints at their fastest pace while standing behind the starting line. Participants warmed themselves for the following sprint, which was run in the other direction, by going back to the opposite end after each sprint. Every subsequent sprint of thirty meters started twenty seconds after the preceding one. Until all six sprints were finished, this cycle was continued. To the closest 0.01 seconds, the time was recorded. The average time for all six sprints, the peak sprint speed, the total sprint time (for all six sprints), and the tiredness index were all computed. As a percentage reduction, the tiredness index was computed as follows: $100 - (\text{total time} / \text{ideal time} \times 100)$, where ideal time is equal to 6 X best time. This field-based assessment is regarded as legitimate and trustworthy (19, 20).

Statistical Analysis

Using the Shapiro-Wilk test to assess the normality of the data distribution, it was found that each variable had a non-normal distribution. The metrics of central tendency (means) and variability (standard deviations, SD) were used to present the descriptive data. To evaluate the differences between the two groups at the start and finish of the study, a two-sample independent t-test was run. To find significant differences between the baseline and post-test results within the groups, we used a paired sample t-test. To assess differences between the groups before and after the testing, the change ratio ($\Delta\%$) was used. Partial eta-squared (η^2) values were utilized to evaluate the effect size (ES). A moderate effect was classified as falling between 0.50 and 0.79, a big effect as exceeding 0.80, and a small effect as falling between 0.20 and 0.49. The software IBM SPSS Statistics version 26.0 was used to analyze the data. The significance threshold of .05. Was applied in the statistical analysis.

4. Result

Table 2: Demographic characteristics of groups

Group	Height (cm) means \pm SD	Weight (kg) means \pm SD
Exp(n=20)	168.895 \pm 4.532	70.421 \pm 5.956
Con(n=20)	169.095 \pm 4.346	70.571 \pm 5.670

Exp=experimental group, CG=control group

Table 3: Pre-test post-test comparison among experimental and control

Variable	Pre-test scores		Post-test scores		Pre to post-change in EXP	
	EXP	CG	EXP	CG		
	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	Effect Size	Magnitude
Cardiovascular endurance	2437.5 ± 136.57	2435.000 ± 135.821	2585.0 ± 136.8*	2445.0 ± 127.6	1.08	Large
Speed	7.255 ± 0.167	7.255 ± 0.167	7.04 ± 0.17*	7.23 ± 0.18	1.30	Large
Agility	9.855 ± 0.252	9.855 ± 0.252	9.52 ± 0.22*	9.84 ± 0.26	1.41	Large
Muscular endurance &	29.45 ± 1.701	29.450 ± 1.701	34.25 ± 1.68*	29.15 ± 1.79	2.84	Large
Muscular endurance	26.45 ± 1.701	26.450 ± 1.701	31.40 ± 1.76*	26.35 ± 1.95	2.86	Large
Speed endurance	5.5 ± 0.145	5.500 ± 0.145	5.30 ± 0.14*	5.51 ± 0.14	1.42	Large

*-Statistically significant difference at 0.05 level. EXP-experimental group, CG-control group.

Pre-test and post-test scores for a number of characteristics are compared between the experimental and control groups; the results indicate that the experimental group significantly improved while the control group changed very little. Therefore, the findings suggest that there is no discernible change in these characteristics in the control group. The experimental groups' mean distance rose significantly from 2437.5 to 2585.0 meters for the cardiovascular endurance (m) measure; an effect size of 1.08 indicated a large degree of change. In a similar vein, the experimental group's mean time dropped from 7.255 seconds to 7.04 seconds with a large effect size of 1.30 for the speed (s) - 50m dash test.

The experimental group's time decreased from 9.855 seconds to 9.52 seconds with a large effect size of 1.41 in the Agility (s) - T-Test, which followed the similar trend. The experimental group significantly increased from 29.45 to 34.25 repetitions in the muscular endurance test (the Squats test), with an extraordinarily large effect size of 2.84. Additionally The experimental group considerably improved in the Sit-Ups test, going from 26.45 to 31.40 repetitions with an effect size of 2.86. Last but not least, the experimental group's average time dropped from 5.5 seconds to 5.30 seconds in the speed endurance Average Time (s) - 6x30m test, with a significant effect size of 1.42.

The control group showed no significant changes from the pre-test to the post-test, whereas the experimental group showed significant improvements in all variables, with large effect sizes suggesting significant changes from pre-test to post-test.

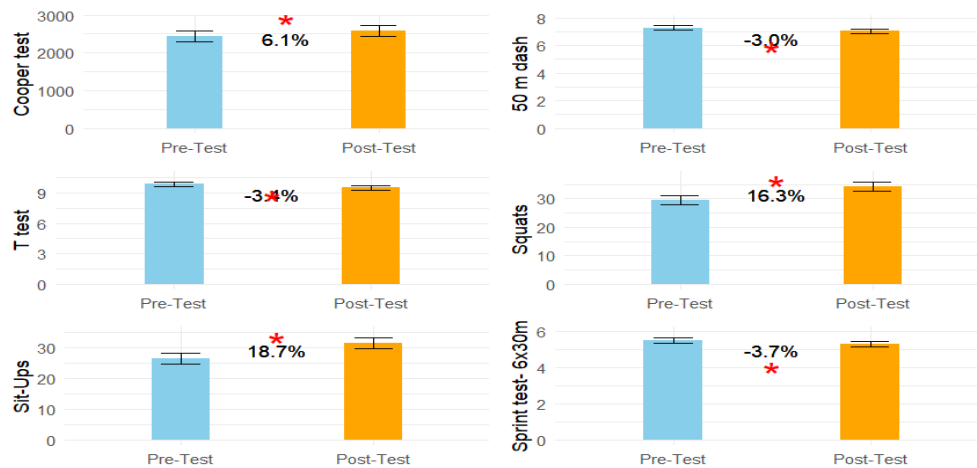


Figure 1. The graph shows pre-test and post-test comparison of the experimental group.

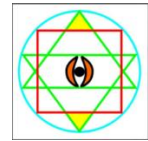
5. Discussion

The study's findings indicate that the experimental group exhibited significant improvements in all selected measures, whereas the control group did not exhibit any meaningful changes in these variables. Following the intervention, improvements have been seen in a number of specific physical characteristics and special endurance tests, including cardiovascular endurance, speed, agility, muscle endurance, and speed endurance. Thus, the results show that soccer players' physical characteristics and unique endurance significantly improved following 12 weeks of HIIT Tabata training. The experimental group's physical metrics and unique endurance improved as a result of the investigator's introduction of the Tabata training intervention and regular training regimen. These results were consistent with other research demonstrating the beneficial effects of Tabata training on cardiovascular endurance, speed, and agility, among other aspects of physical fitness.

Wrestlers' physical fitness, including speed, agility, and muscular endurance, improved following Tabata protocol interventions, according to a prior study by Piralaiy et. al(21). Similar to the findings of the current study, Saravanan and Sugumar's(22) investigation on school-age athletes revealed that Tabata training increases athletes' speed, speed endurance, and agility. On the other hand, after the 12-week intervention, compared to the control group, positive intervention effects were noted in the Tabata group on cardiorespiratory fitness(23). Similar findings regarding speed were observed by Brezze et.al (24), Tabata training on kabbadi players has demonstrated superior effect on speed in comparison to the control group. Sukri, N. M(25). Reports that a 12-week Tabata training program improves both cardiovascular and muscular endurance in female university students who are not trained. The findings of Foo, E.J.'s investigation, which demonstrated that Tabata training improves both muscular and cardiovascular endurance in active male college students, were likewise supported by this study. According to the study's findings, soccer players' physical characteristics and unique endurance significantly improved following 12 weeks of HIIT Tabata training.

6. Conclusion

The physical characteristics and unique endurance of soccer players were considerably enhanced by HIIT Tabata training. The exercise demonstrated a significant increase in overall physical performance while



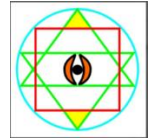
also benefiting physical metrics and specific endurance. Soccer players who used a high-intensity Tabata training regimen saw improvements in their muscle endurance, speed endurance, agility, and cardiovascular endurance. Without any doubt, coaches can suggest this unique training programme for soccer and related games. The Tabata protocol intervention results in improved exercise intensity leading to enhanced pulmonary function, endurance, and efficiency of soccer players. The improvement of muscular endurance and speed endurance indicates the improvement of buffer capacity. In conclusion, the enhancements in aerobic and anaerobic energy systems following Tabata training are similar to traditional aerobic and anaerobic training, the 12 weeks of Tabata training significant effect on physical fitness and specific endurance variables among soccer players.

7. References

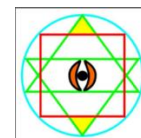
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**Effect of SAQ and Ladder Training on Selected Physical Variables and Physiological Variables
among College Men Handball Players**

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Abstract: The purpose of the study was to find out the effect of saq and ladder training on selected physical variables and physiological variables among college men handball players. To achieve the purpose of this study thirty college men handball players were randomly selected from the Madurai region, Tamil Nadu, India and their ages ranged between 17 and 25 years. All the subjects were divided into three equal groups with 10 subjects each. Group 1 underwent s.a.q training, Group 2 underwent ladder training and Group 3 underwent combined training for a period of 12 weeks. Leg explosive power and resting pulse rate were selected as dependent variables. Leg explosive power estimated utilizing (Standing Broad Jump), resting pulse rate estimated utilizing a (Dr. Trust SpO2 Pulse Monitor). Pre and post-test random group designs were used for this study. The data were collected before and after the training period of 12 weeks and the data collected were statically analyzed by 'ANOVA' test, which was used to find out the significant improvement in selected variables from the baseline to post. The result of the study on of combined s.aq and ladder training produced that there was a significant improvement in the Leg explosive power and resting pulse rate of college men handball players.

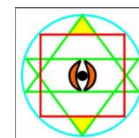
Keywords: S.A.Q Training, Ladder Training, Handball Players

1. Introduction

Sport is all forms of physical activity that aim to use, maintain or improve physical fitness and provide entertainment to participants through casual or organized participation Musa, 2023. Sport may be competitive, where a winner or winners can be identified by objective means and may require a degree of skill, especially at higher levels Jassim, 2021. Sports training refers to the physical, technical, intellectual, psychological and moral preparation of an athlete utilizing physical exercises Wagner, 2014.

Handball is a team sport with two opposing teams that alternately take the role of either attackers or defenders, depending on who has the ball. Handball is not predominantly an endurance sport aerobic fitness is still crucial for players' ability to maintain an elevated intensity of play at the top level Torabi, 2024. Handball athletes have well-developed agility, explosive power of the upper and lower extremities, speed, aerobic capacity, hand coordination and repetitive torso strength. Training of different abilities and technical-tactical skills should ultimately impact the improvement of handball players' performance Frstrup, 2024. Specific condition training enhances physiological demands, develops technical and tactical skills effectively using time and maintains the player's motivation Wahyono, 2024.

In the modern world of competitive sports and physical conditioning, S.A.Q. training, which stands for Speed, Agility, and Quickness, has become an essential component of athletic development. S.A.Q. Training is a versatile and impactful method that enhances the core movement skills required in most sports FatHullah 2024. Integrating drills that develop speed, agility, and quickness, athletes not only improve performance but also build injury-resistant, well-coordinated, and explosive bodies Sun 2025. The training targets neuromuscular efficiency, coordination, and reaction time, making athletes faster, more agile, and more responsive in game situations. As sports continue to demand faster and more responsive athletes, S.A.Q. training will remain a cornerstone of modern athletic preparation Chang 2025.



Ladder training is a dynamic form of agility training that uses a floor-based agility ladder to develop foot speed, coordination, balance, and agility Singha, 2024. It is a highly effective method used by athletes across various sports to enhance performance and movement efficiency. The low-cost and versatile nature of the agility ladder makes it popular for beginners and elite athletes Bassa, 2024. Ladder training involves performing a series of footwork drills using a flat, portable agility ladder placed on the ground. The exercises require fast, repetitive steps into and out of the spaces of the ladder in various patterns Apostolidis, 2024.

Ladder training is an essential part of S.A.Q. programs, offering a simple yet powerful way to build athleticism Singha, 2024. Its effectiveness lies in quick movements, directional changes, and balance for success in every sport. With consistent practice, athletes can enhance their performance, prevent injuries, and gain a competitive edge wahyono, 2024.

2. Methodology

In this research, the subjects were taken from the Madurai region, Tamil Nadu, India. 30 men's handball players are included in this study and their age range is between 17 to 25 years. They are divided into three groups, namely group 1 as the S.A.Q Training, group 2 Ladder Training and group 3 combined training. Groups 1, 2 and 3 were treated as an experimental group for 12 weeks. The training protocol was given in the morning section of alternate days of the week for 12 weeks. Before and after the training protocol of 12 weeks, the data of the subjects were collected for analysis of their performance.

Tests and statistical data analysis

Information was dissected utilizing the SPSS Statistics (SPSS Statistics for Windows: IBM Corporation, version 26.0). Pre and post proportions of leg explosive power estimated utilizing (Standing Broad Jump) and resting pulse rate estimated utilizing a (Dr. Trust Sp02 Pulse Monitor) . Statistical technique: Analysis of variance (ANOVA) was used for this research.

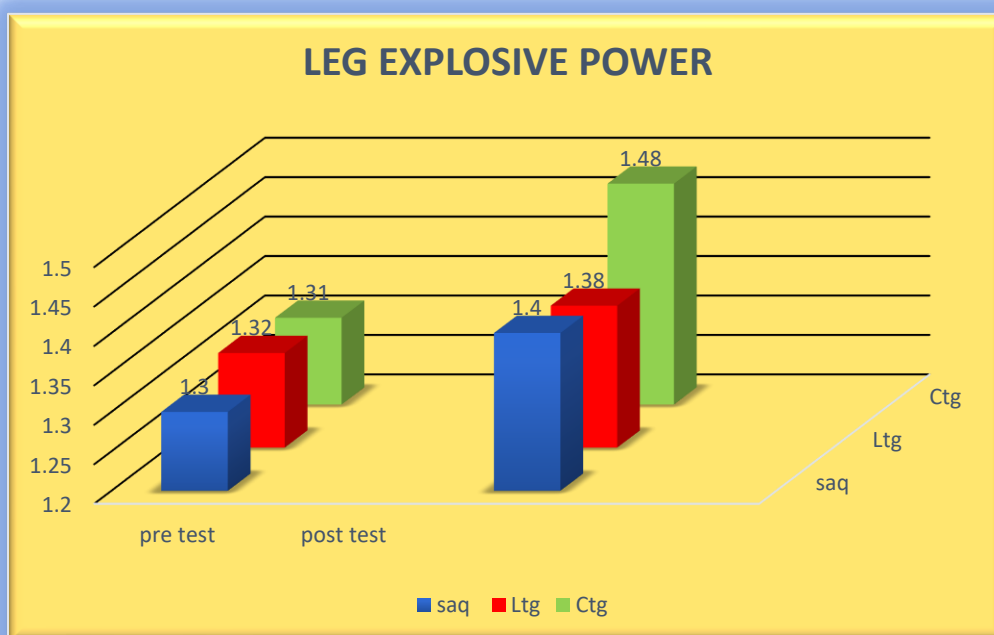
Table 1: Analysis of Variance in Leg Explosive Power of Experimental Groups

LEG EXPLOSIVE POWER							
Tests	SAQG	LTG	CMTG	S.O.S	D. F	MS	F-Ratio
Pre-Test	1.30	1.32	1.31	0.007	2	0.0035	0.686
				0.139	27	0.0051	
Post-Test	1.40	1.38	1.48	0.248	2	0.124	20.66*
				0.182	27	0.006	

*Significant at 0.05 level table value 2.92 df 2,27

Table I shows the pre-test means and values of leg explosive power for the S.A.Q training group, Ladder training group, and combined training group are 1.30, 1.32 and 1.31, respectively. The obtained F-ratios are 0.686 was lower than the table value of 2.92 for df 2 and 27 required for insignificance at a 0.05 level of confidence.

Further, the post-test mean values of values of leg explosive power for the S.A.Q training group, Ladder training group, and combined training group are 1.40, 1.38 and 1.48, respectively. The obtained F-ratios are **20.66*** is higher than the table value of 2.92 for df 2 and 27 required for significance at a 0.05 level of confidence.



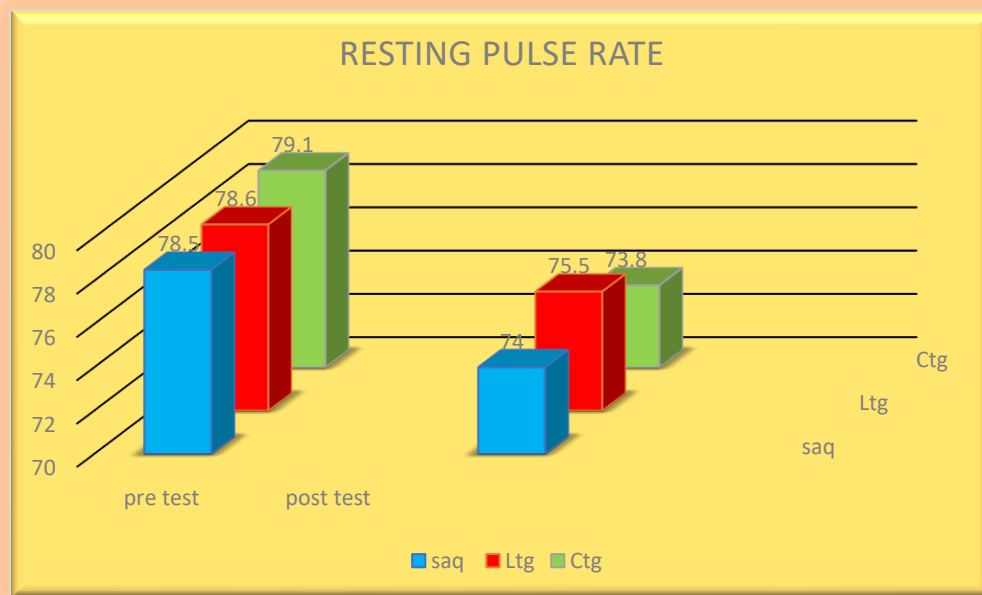
Graph 1. Bar Diagram of Leg Explosive Power on Experimental Groups

Table 2. Analysis of Variance in Resting Pulse Rate of Experimental Groups

RESTING PULSE RATE							
Tests	SAQG	LTG	CMTG	S.O.S	D. F	MS	F-Ratio
Pre-Test	78.5	78.6	79.1	2.06	2	1.03	0.70
				39.80	27	1.47	
Post-Test	74.0	75.5	73.8	17.26	2	8.53	3.59*
				64.10	27	2.37	

Table II shows the pre-test means and values of resting pulse rate for the S.A.Q training group, Ladder training group, and combined training group are 78.5, 78.6 and 79.1, respectively. The obtained F-ratios are 0.70 was lower than the table value of 2.92 for df 2 and 27 required for insignificance at a 0.05 level of confidence.

Further, the post-test mean values of values of resting pulse rate for the S.A.Q training group, Ladder training group, and combined training group are 74.0, 75.5 and 73.8, respectively. The obtained F-ratios are **3.59*** is higher than the table value of 2.92 for df 2 and 27 required for significance at a 0.05 level of confidence.



Graph 2. Bar Diagram of Resting Pulse Rate of Experimental Groups

3. Conclusion

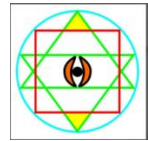
In the light of the study undertaken with certain limitations imposed by the experimental conditions, the following conclusions. The S.A.Q training group, Ladder training group, and combined training groups demonstrated significantly greater improvement on leg explosive power and resting pulse rate among the college men handball players. The training helps the men handball players to improve their performance and to become elite players.

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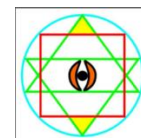
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**Effect of Yogic and Plyometric Training on Resting Pluse Rate among Men
Intercollegiate Cricket Players**

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Abstract: The objective of this research was to evaluate the effects of yogic and plyometric training on resting pulse rate in male intercollegiate cricket players. It was expected that these training techniques would lead to significant improvements in the targeted physical variables. The study involved 45 male cricket players, aged 18 to 25. They were randomly assigned to three groups: two experimental and one control. A pre-test and post-test randomized group design was employed for the research. The participants were evenly distributed into three groups: Experimental Group 1 (Yogic Training), Experimental Group 2 (Plyometric Training), and a Control Group that did not undergo any training. The primary variable measured was resting pulse rate, expressed in beats per minute. Data collection occurred before and after a six-week training period and was analyzed using the F-ratio statistical method, with a significance level established at 0.05. The results showed that both experimental groups exhibited a greater improvement in resting pulse rate compared to the control group.

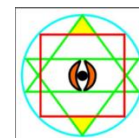
Keywords: Cricket player, yoga, plyometric, resting pulse rate.

1. Introduction

Yoga is a discipline that focuses on attaining oneness or inner unity. The ultimate reality dissolves the distinction between mind and matter, revealing this sense of wholeness. Yoga is a scientific method that brings people closer to the truth. The ultimate aim of all yoga practices is to achieve a state of fusion between the individual soul and the universal soul, also known as divine consciousness. Yoga is an effective treatment for a variety of mental and physical ailments. In addition to effectively activating the organs, it improves the way internal body systems function. In addition to its physical benefits, yoga transforms the mind. This path involves the eight limbs of yoga: Samadhi, Dharana, Dhyana, Pranayama, Pratyahara, Yama, and Niyama (Iyengar, B.K.S., 1999).

Plyometrics are not fundamentally hazardous; however, the focused and intense movements performed repeatedly can elevate the stress levels on joints and Musculo-tendinous structures. As a result, implementing safety measures is essential when engaging in this type of exercise. Low-intensity variations of plyometrics are often incorporated into different phases of injury rehabilitation, demonstrating that proper technique and necessary safety precautions can render plyometrics safe and beneficial for most individuals. Moreover, research indicates that plyometrics can help decrease lower-extremity injuries in team sports, particularly when combined with other forms of neuromuscular training.

Heart rate, also known as pulse, is the count of heartbeats occurring within one minute. Resting heart rate is defined as the heart's activity when it pumps the minimum necessary amount of blood. For most people, a typical resting heart rate ranges from 60 to 100 beats per minute.



2. Methods and Materials

The current study involved 45 college cricket players, whose ages ranged from 18 to 25 years. The participants were randomly assigned into two experimental groups and one control group. A pre-test and post-test randomized group design, featuring both a control group and experimental groups, was utilized for this research. Through random sampling, the 45 players were evenly distributed into three groups of fifteen each: Experimental Group 1 (Yogic Training), Experimental Group 2 (Plyometric Training), and a Control Group (CG) that did not receive any training. Resting pulse rate was assessed in beat per minutes. Data was collected both before and after a six-week training period and analyzed using the F-ratio statistical method. The significance level was set at 0.05.

Analysis of data

Table 1. Mean Values of Yogic practice group, Plyometric group and Control Group on Resting Pulse rate (Score in Beat per minute)

Group	Yogic group	Plyometric group	Control Group
Pre-Test	74.30	74.11	73.89
Post-Test	72.11	72.32	74.05
't' test	3.42*	3.22*	0.15

*Significant at 0.05 level

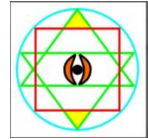
Table – I shows that the Yogic group, Plyometric group, and Control group obtained values of 3.42, 3.22, and 0.15, respectively, which are higher than the table value of 2.15 with df 14 at the 0.05 level. It showed that there was a significant difference between the experimental groups' pre- and post-test means for resting pulse rate.

Table 2. Analysis of covariance Adjusted Post Test mean Values for Yogic group, Plyometric Training group and Control Group on Resting Pulse Rate (Beat per Minutes)

Test	Yogic Group	Plyometric Training group	Control group	Source of Variance	Sum of Squares	Df	Mean Squares	
Adjusted Post test	72.07	72.38	74.25	Between	49.95	3	16.65	61.67
				Within	15.00	45	0.27	

*significant at 0.05 level of confidence

Table-II indicates that the adjusted post-test mean values for resting pulse rate (in beats per minute) were 72.07 for Group I, 72.38 for Group II, and 74.25 for the Control Group. The calculated F-value of 61.67 for resting pulse rate exceeded the critical table value of 3.23 at the 0.05 level of significance with degrees of freedom 2 and 42. This suggests a statistically significant difference in resting pulse rate among the



Yogic practices group, the brisk walking group, and the Control group. Therefore, it can be concluded that both experimental interventions led to a meaningful reduction in resting pulse rate compared to the control.

Table 3. The Scheffe's test for the Difference between the Adjusted post-test Paired means values of Resting pulse rate (Score in beats per minutes)

Adjusted Post-test Means			Mean Difference	Confidence Interval
Yogic Practices Group	Plyometric Training Group	Control Group		
72.07	72.38		0.31	0.55
	72.38	74.25	1.87	0.55
72.07		74.25	2.18	0.55

*significant at 0.05 level of confidence

Table-II indicates that the adjusted post-test mean difference on Group I and group II, Group II and Control Group. Group- I and Control Group are 0.31, 1.87 and 2.18 respectively and they are greater than the confidence interval value 0.55 which shows significant difference at 0.05 level of confidence.

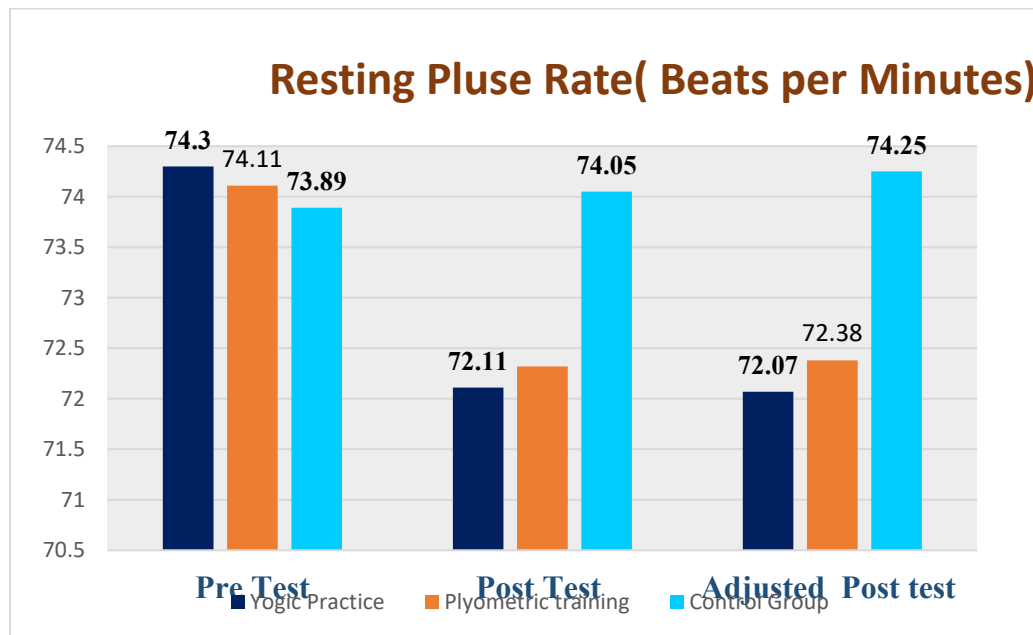
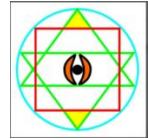


Figure 1. The Pre and Post and Adjusted post test mean values for Yogic group, Plyometric Training group and Control Group on Resting Pulse Rate



3. Discussion on Findings

The yogic and plyometric training influence the resting pulse rate in male intercollegiate cricket players. Resting pulse rate is a key indicator of cardiovascular fitness and overall physical health. A lower resting pulse rate generally reflects improved heart efficiency and better conditioning.

After six weeks of intervention, the findings revealed a significant reduction in resting pulse rate among the experimental groups (yogic and plyometric training) compared to the control group, which did not undergo any training. This outcome suggests that both yogic practices and plyometric exercises positively affect cardiovascular efficiency.

The yogic training likely contributed to relaxation of the autonomic nervous system and improved parasympathetic activity, leading to a calmer heart rate. Plyometric training, known for improving muscular strength and endurance, may have enhanced overall physical fitness and cardiovascular response, contributing to a lowered resting pulse rate.

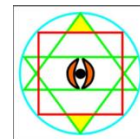
The statistical analysis supported these findings, with the F-ratio exceeding the critical value at the 0.05 level of significance, confirming that the differences among the groups were not due to chance.

4. Conclusion

The study clearly indicates that both yogic and plyometric training are effective in improving cardiovascular fitness, as evidenced by reduced resting pulse rate. This suggests that incorporating such training into athletic programs could benefit the health and performance of intercollegiate cricket players.

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**The Role of Yoga in Transforming Physical Education:
A Holistic Skill Development Perspective**

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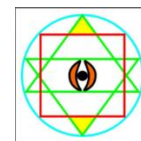
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Abstract: Physical education plays a crucial role in shaping students' overall health and fitness. Recently, there has been a growing acknowledgment of the benefits of incorporating yoga into physical education programs. This integration not only improves physical fitness but also enhances mental well-being, concentration, and emotional balance. By combining traditional physical education practices with yoga, students can experience a holistic approach to skill development, enriching their educational journey. Yoga, focusing on breath control, mindfulness, and body awareness, complements traditional physical education practices by enhancing strength, flexibility, and balance while encouraging self-reflection and introspection. This integration provides numerous benefits for students, including improved physical fitness through targeted muscle engagement and dynamic movements, heightened mind-body connection leading to better coordination and proprioception, stress reduction through relaxation techniques like deep breathing and meditation, enhanced concentration and focus translating to improved cognitive function and attention span, and promotion of emotional balance fostering self-acceptance, compassion, and resilience. Moreover, integrating yoga into physical education classes requires minimal resources, with simple yoga mats and guidance from trained instructors being sufficient to get started, alongside the availability of online resources and instructional videos. By embracing this holistic approach, schools empower students to lead healthier, more balanced lives, emphasizing growth and development beyond physical capabilities. As educators, it is our responsibility to provide diverse opportunities for students, and integrating yoga into physical education programs represents a crucial step towards achieving this goal, fostering a culture of well-being and holistic education for future generations.

Keywords: Physical Education, Yoga, Holistic Approach, Students, Skill Development.

1. Introduction

In contemporary educational paradigms, physical education (PE) serves as a cornerstone in nurturing well-rounded individuals, focusing on holistic development encompassing physical fitness, skill acquisition, and overall health. Over recent years, a notable shift has been observed in recognizing the profound benefits of incorporating yoga into PE programs. This integration extends beyond enhancing mere physical fitness; it intertwines with mental well-being, concentration, and emotional equilibrium. By amalgamating traditional PE methodologies with the time-honored discipline of yoga, students are offered a comprehensive approach to skill development that enriches their educational journey. The ethos of yoga, with its emphasis on breath modulation, mindfulness, and heightened body consciousness, augments conventional physical activities by offering an additional layer of holistic engagement. Through dedicated yoga practice, students are not only equipped with physical attributes such as strength, flexibility, and balance, fundamental components of fitness, but also invited into a realm of self-reflection and introspection, fostering a profound understanding of their bodies and minds. The integration of yoga within PE classes unfolds a multitude of benefits for students, each contributing to their overall well-being. Firstly, the physical benefits are evident as yoga postures, or asanas, meticulously target diverse muscle groups, promoting flexibility, strength, and endurance. Furthermore, the dynamic nature of yoga sequences elevates heart rate and enhances



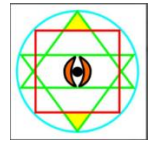
cardiovascular health, thereby bolstering overall physical fitness. Moreover, yoga instills a profound connection between the mind and body, nurturing heightened awareness of bodily sensations and breath. This symbiotic relationship cultivates a deeper understanding of physical movements and mental states, thereby enhancing coordination and proprioception—an often-overlooked aspect of physical development. In the contemporary milieu, where students frequently grapple with stress and anxiety amidst a fast-paced lifestyle, yoga emerges as a beacon of solace. With its repertoire of relaxation techniques ranging from deep breathing to meditation yoga equips students with invaluable tools for stress management. Through regular practice, students cultivate coping mechanisms essential for navigating academic and personal challenges, thus fostering resilience and fortitude. The cognitive benefits of yoga are equally profound, as it demands unwavering concentration and mindfulness. By directing attention towards breath awareness and body alignment, students hone cognitive functions and attention spans skills that seamlessly transfer to academic pursuits, sports endeavors, and interpersonal interactions. Emotionally, yoga becomes a conduit for fostering balance and equanimity. Encouraging self-acceptance and compassion, yoga empowers students to manage their emotions effectively, cultivating a positive outlook towards life and its myriad challenges. Notably, the integration of yoga into PE classes necessitates minimal resources simple yoga mats and guidance from trained instructors suffice, supplemented by a plethora of online resources and instructional videos accessible to both educators and students alike. In essence, by embracing a holistic approach to skill development in physical education, schools transcend conventional paradigms, empowering students to lead healthier, more balanced lives. Through the integration of yoga, students transcend the realms of physical fitness, delving into the realms of mindfulness, resilience, and self-awareness essential attributes for navigating the complexities of contemporary life. As custodians of education, it is our solemn duty to furnish students with diverse opportunities for growth and development, and integrating yoga into PE programs stands as a testament to this commitment. Together, let us embark on a journey towards fostering a culture of well-being and holistic education, paving the way for the flourishing of future generations.

2. Student Well-being through Yoga in Physical Education

2.1 Physical fitness

Physical fitness is a fundamental aspect of overall health and well-being, encompassing various dimensions such as flexibility, strength, and endurance. While traditional forms of exercise like cardio and strength training are well-known for their benefits, the integration of yoga postures, known as asanas, into fitness routines has gained significant recognition for its holistic approach to physical well-being. Yoga, originating from ancient practices in the Indian subcontinent, offers a unique blend of physical exercise and mindfulness. The practice of yoga involves a diverse array of asanas, each meticulously designed to target different muscle groups throughout the body. These asanas promote flexibility by stretching muscles and enhancing joint mobility. For instance, poses like Forward Fold and Cobra Stretch focus on elongating the muscles of the back, legs, and spine, fostering increased flexibility and suppleness. Moreover, yoga postures are not static; they often incorporate dynamic movements that engage multiple muscle groups simultaneously. This dynamic aspect of yoga sequences not only challenges the muscles but also elevates heart rate, thereby contributing to improved cardiovascular health. Sequences such as Sun Salutations, which involve fluidly transitioning from one pose to another in a coordinated manner, serve as effective cardiovascular workouts, stimulating blood circulation and enhancing heart function.

In addition to flexibility and cardiovascular benefits, yoga cultivates strength throughout the body. Asanas require muscles to contract and engage to maintain proper alignment and stability. Poses like Warrior I and Chair Pose target muscles in the legs, hips, and core, promoting strength and muscular endurance. Holding these poses for extended durations builds muscular strength over time, contributing to overall physical resilience. Furthermore, yoga sequences often incorporate elements of balance and proprioception, which are crucial for functional movement and injury prevention. Balancing poses like Tree Pose and Eagle Pose



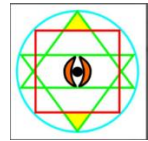
challenge proprioception the body's sense of spatial awareness and improve stability through focused engagement of core muscles. By practicing these poses regularly, individuals develop better balance and stability, reducing the risk of falls and enhancing overall coordination. Aside from physical benefits, yoga promotes mental well-being and stress reduction through mindfulness and breath awareness. The synchronized movement with breath fosters a sense of calm and relaxation, reducing stress levels and promoting mental clarity. As individuals become more attuned to their breath and bodily sensations during yoga practice, they develop greater self-awareness and emotional resilience.

The integration of yoga postures into fitness routines offers a comprehensive approach to physical fitness, targeting flexibility, strength, endurance, cardiovascular health, balance, and stability. Through a combination of static poses and dynamic movements, yoga provides a holistic means of enhancing overall physical well-being. By incorporating yoga into regular exercise regimens, individuals can experience not only physical benefits but also mental and emotional upliftment, leading to a more balanced and resilient lifestyle.

2.2 Mind-body connection

The mind-body connection lies at the heart of yoga practice, offering profound benefits that extend far beyond physical fitness. Yoga encourages students to cultivate a deeper awareness of their breath and bodily sensations, fostering a harmonious relationship between the physical body and the mind. This heightened awareness serves as a gateway to understanding the intricate interplay between physical movements and mental states, ultimately enhancing overall coordination and proprioception. At the core of yoga practice is the emphasis on breath awareness, or pranayama. By directing attention to the rhythm and quality of the breath, students learn to establish a deeper connection with their bodies and minds. The breath serves as a bridge between the conscious and subconscious aspects of the self, providing a focal point for cultivating mindfulness and presence in the present moment. As students engage in yoga postures, or asanas, they are encouraged to maintain a steady and conscious breath throughout the practice. This mindful breathing not only enhances the efficacy of the physical movements but also serves as a tool for regulating the nervous system and promoting relaxation. By synchronizing breath with movement, students learn to navigate the sensations arising in their bodies with greater ease and awareness. Moreover, yoga encourages students to tune into their bodies' sensations without judgment or attachment. This non-reactive awareness allows individuals to observe physical discomfort or tension without immediately seeking to avoid or suppress it. Instead, students are encouraged to explore these sensations with curiosity and compassion, recognizing them as valuable sources of information about their bodies' needs and limitations.

Through consistent practice, students develop a heightened sensitivity to the subtle nuances of their bodies' movements and postures. This enhanced proprioception—the body's sense of its own position in space enables individuals to move with greater precision and efficiency, reducing the risk of injury and enhancing overall coordination. As students become more attuned to the feedback provided by their bodies, they learn to make subtle adjustments in alignment and posture, optimizing their movement patterns for greater ease and efficiency. Furthermore, the mind-body connection cultivated through yoga practice extends beyond the physical realm, influencing mental and emotional well-being. By developing a deeper awareness of their thoughts and emotions, students gain insight into the ways in which their mental states influence their physical experiences and vice versa. This self-awareness empowers individuals to cultivate a greater sense of balance and equanimity in the face of life's challenges, fostering resilience and emotional stability. The mind-body connection fostered by yoga practice offers profound benefits for overall well-being. By encouraging students to cultivate awareness of their breath and bodily sensations, yoga enhances coordination, proprioception, and mindfulness. Through consistent practice, individuals develop a deeper understanding of the intricate interplay between physical movements and mental states, empowering them to move with greater ease, efficiency, and resilience both on and off the yoga mat.



2.3 Stress Reduction

In the hustle and bustle of modern life, stress and anxiety have become prevalent challenges for students navigating the demands of academic and personal responsibilities. In response to this pervasive issue, yoga emerges as a powerful tool for stress reduction, offering a holistic approach to relaxation and self-care. Through a combination of deep breathing exercises and meditation techniques, yoga provides students with effective strategies for managing stress and cultivating resilience in the face of adversity. At the heart of yoga's stress-reducing benefits lies the practice of deep breathing, or pranayama. Deep breathing exercises involve deliberately slowing down the breath, extending the inhalation and exhalation to induce a state of relaxation. By focusing on the rhythm and depth of their breath, students activate the body's natural relaxation response, triggering the parasympathetic nervous system to counteract the effects of stress and promote a sense of calm. One of the most widely practiced deep breathing techniques in yoga is diaphragmatic breathing, also known as belly breathing. In diaphragmatic breathing, individuals engage the diaphragm—the primary muscle of respiration to draw air deep into the lungs, expanding the abdomen with each inhalation and allowing it to gently contract with each exhalation. This mindful breathing pattern not only increases oxygenation of the blood but also reduces muscle tension and promotes a sense of relaxation throughout the body. In addition to deep breathing exercises, yoga incorporates meditation techniques that further enhance stress reduction and promote mental clarity. Meditation involves cultivating a focused and present awareness of the present moment, allowing students to observe their thoughts and emotions without judgment or attachment. By practicing mindfulness meditation, individuals learn to anchor their attention to the present moment, letting go of worries about the past or future and embracing a sense of calm and acceptance.

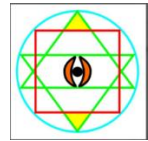
One of the simplest forms of meditation practiced in yoga is mindful breathing meditation, wherein individuals focus their attention on the sensations of the breath as it moves in and out of the body. By observing the rhythmic rise and fall of the breath, students cultivate a sense of inner stillness and tranquility, gradually quieting the restless chatter of the mind. Over time, regular meditation practice strengthens the brain's ability to regulate emotions and manage stress, empowering students to navigate life's challenges with greater equanimity and resilience. Moreover, yoga offers a variety of relaxation techniques that further promote stress reduction and emotional well-being. These may include progressive muscle relaxation, guided imagery, and body scanning exercises, each designed to release tension and promote deep relaxation throughout the body and mind. By incorporating these relaxation techniques into their daily routines, students can create moments of calm amidst the chaos of daily life, replenishing their energy reserves and enhancing their capacity to cope with stress. Yoga serves as a powerful antidote to the stress and anxiety that students often encounter in today's fast-paced world. Through the practice of deep breathing exercises, meditation techniques, and relaxation strategies, yoga offers effective tools for stress management and self-care. By cultivating mindfulness and resilience through regular yoga practice, students can develop the coping mechanisms necessary to navigate academic and personal challenges with grace and equanimity, fostering a greater sense of well-being and balance in their lives.

2.4 Concentration and focus

Concentration and focus are vital skills in navigating the complexities of modern life, whether in academic pursuits, sports endeavors, or social interactions. Yoga, with its emphasis on mindfulness and breath awareness, serves as a powerful tool for cultivating these essential skills and enhancing cognitive function and attention span. Central to the practice of yoga is the cultivation of concentration and mindfulness. As students engage in yoga postures, or asanas, they are encouraged to maintain a focused awareness of their breath and body alignment. By directing attention to the sensations arising in the body and the quality of the breath, individuals anchor their awareness in the present moment, fostering a state of mindfulness that transcends the distractions of the external environment.



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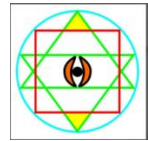
The practice of concentration in yoga is often facilitated through the use of drishti, or focal points. Drishtis are specific points of focus that help individuals maintain steady attention and inner stillness throughout their practice. For example, in balancing poses like Tree Pose or Warrior III, students may fix their gaze on a single point in front of them, allowing them to steady their minds and bodies amidst the challenges of maintaining equilibrium. Moreover, yoga encourages individuals to cultivate a heightened awareness of their thoughts and emotions without judgment or attachment. This non-reactive awareness enables students to observe the fluctuations of the mind with equanimity, fostering greater mental clarity and resilience in the face of distractions. As individuals learn to navigate the internal landscape of their minds with greater skill and discernment, they develop the capacity to sustain focus and concentration in various aspects of their lives. The skills of concentration and mindfulness cultivated through yoga practice extend beyond the confines of the yoga mat, permeating into other domains of life. In academic studies, students can apply the principles of breath awareness and inner focus to enhance their learning and retention of information. By maintaining a calm and centered mindset, individuals can approach studying with greater clarity and efficiency, minimizing the impact of external distractions and improving their ability to concentrate for extended periods. Similarly, in sports and athletic pursuits, the ability to maintain focus and attention is essential for peak performance. Athletes who incorporate yoga into their training routines often report improvements in their ability to stay present and composed under pressure, enabling them to execute their skills with greater precision and confidence. By honing their concentration skills on the yoga mat, athletes develop a mental resilience that translates seamlessly into their competitive endeavors. Furthermore, in social interactions and interpersonal relationships, the practice of mindfulness fosters deeper empathy and connection with others. By cultivating present-moment awareness and active listening skills, individuals can engage more fully in meaningful conversations and cultivate authentic connections with those around them. The ability to remain present and attentive in social settings enhances communication and fosters harmonious relationships based on mutual respect and understanding. The practice of yoga offers a holistic approach to developing concentration and focus, fostering mindfulness and inner awareness that extends into all aspects of life. By incorporating breath awareness, body alignment, and drishti into their practice, students learn to cultivate a steady and focused mind that enhances cognitive function and attention span. These skills transfer seamlessly into academic studies, sports performance, and social interactions, empowering individuals to navigate life's challenges with grace and presence.

2.5 Emotional well-being

Emotional well-being is a fundamental aspect of overall health and happiness, encompassing the ability to navigate and regulate one's emotions effectively. In today's fast-paced and often stressful world, many individuals struggle with emotional challenges such as anxiety, depression, and stress. Yoga emerges as a potent tool for promoting emotional balance and resilience, offering a unique blend of physical exercise, mindfulness, and self-reflection that nurtures a positive outlook on life. At the heart of yoga's benefits for emotional well-being lies the cultivation of self-acceptance and compassion. Yoga encourages individuals to embrace themselves exactly as they are, without judgment or self-criticism. Through the practice of asanas, pranayama, and meditation, students learn to develop a deeper sense of self-awareness and self-compassion, recognizing and honoring their strengths and limitations with kindness and empathy. Yoga fosters self-acceptance by providing a safe and nurturing space for individuals to explore their bodies, minds, and emotions without fear of judgment or criticism. As students engage in yoga postures, they are encouraged to listen to their bodies' signals and honor their physical and emotional boundaries. This process of self-exploration fosters a sense of trust and acceptance in one's own capabilities and limitations, laying the foundation for greater self-esteem and resilience. Moreover, yoga promotes emotional balance by equipping individuals with effective tools for managing stress and regulating difficult emotions. The practice of deep breathing exercises, or pranayama, helps to calm the nervous system and reduce the physiological symptoms of stress and anxiety. By cultivating a steady and rhythmic breath, individuals



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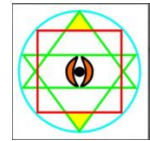
activate the body's relaxation response, promoting feelings of calmness and equanimity amidst the chaos of daily life. In addition to breath awareness, yoga incorporates mindfulness meditation techniques that encourage individuals to observe their thoughts and emotions with detachment and non-judgment. Through regular meditation practice, students learn to cultivate a greater sense of inner peace and emotional resilience, enabling them to respond to life's challenges with clarity and equanimity rather than reactively. Furthermore, yoga encourages individuals to cultivate compassion not only towards themselves but also towards others. By practicing ahimsa, or non-violence, individuals learn to extend kindness and empathy towards all beings, fostering a sense of interconnectedness and compassion in their interactions with others. This cultivation of compassion not only enhances interpersonal relationships but also promotes a greater sense of well-being and fulfillment in life. Yoga offers a holistic approach to promoting emotional well-being by fostering self-acceptance, compassion, and resilience. Through the practice of yoga postures, breath awareness, and mindfulness meditation, individuals learn to cultivate a deeper sense of self-awareness and self-compassion, recognizing and honoring their strengths and limitations with kindness and empathy. By equipping individuals with effective tools for managing stress and regulating difficult emotions, yoga empowers individuals to navigate life's challenges with grace, resilience, and a positive outlook on life.

3. Conclusions

The integration of yoga into physical education programs offers a multifaceted approach to holistic skill development for students. By combining traditional physical education practices with the principles of yoga, educators can provide a comprehensive framework that addresses not only physical fitness but also mental well-being, concentration, and emotional balance. Through regular practice of yoga postures, students can experience improvements in physical fitness, including enhanced flexibility, strength, and cardiovascular health. Additionally, yoga promotes a heightened mind-body connection, fostering greater awareness of bodily sensations and breath. This awareness translates into improved coordination, proprioception, and overall physical performance. Furthermore, yoga serves as a powerful tool for stress reduction, equipping students with effective techniques for managing anxiety and promoting relaxation. By incorporating deep breathing exercises, meditation, and relaxation techniques into their daily routines, students develop resilience and coping mechanisms essential for navigating academic and personal challenges. The practice of yoga also cultivates concentration and focus, essential skills for academic success, sports performance, and interpersonal relationships. By encouraging mindfulness and breath awareness, yoga empowers students to maintain a steady and focused mind, enhancing cognitive function and attention span. Moreover, yoga fosters emotional well-being by promoting self-acceptance, compassion, and resilience. Through the practice of asanas, pranayama, and mindfulness meditation, students learn to cultivate a deeper sense of self-awareness and empathy, fostering a positive outlook on life and harmonious relationships with others. Integrating yoga into physical education programs represents a holistic approach to skill development that empowers students to lead healthier, more balanced lives. By embracing the principles of yoga, educators can provide students with valuable tools for physical fitness, stress management, concentration, and emotional well-being, ultimately fostering a culture of holistic education and well-being for future generations.

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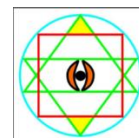
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International Conference on Traditional Systems of Healing: Bridging Yoga, Varma & Sports Science – 2025



The Issue with Obesity

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Abstract: The most common cause of obesity is overeating, pure and simple. The problem is not only too much food, but also that the wrong type of food is taken. A diet composed of excessive oil, spices, starches, sugars and refined products leads to excess weight, while a diet based on nature grains fruits and vegetables leads one automatically towards correct body weight and optimal health. Obesity typically occurs in two types of people. The first type is the competitive, passionate, acquisitive person who eats too much too quickly, using food as a channel to release pent-up mental energy, unfulfilled ambitions and desires. Here there is an excess of ratio guna, the activating principle in the personality. The second type is the housebound person who overeats out of boredom. Here there is an excessive tame ulna, the principle of inertia, where lethargy and dullness predominate. As people put on weight, they tend to become even less happy with themselves and their appearance, and on the hand the bored, tamasic overeater should be initiated into karma yoga, some mode of self-expression.

1. Introduction

Almost all people with obesity will return to a normal body weight and an inspired life if a daily yoga program is required with determination. The problem is that the obese individual needs inspiration and willpower. He or she needs to free themselves out of the habits and patterns based wrongly in food.

Treatment Of Obesity

The tense majestic overeater benefits especially from yoga nidra. He or she habitually sits to eat with a tense, reacquired mind takes an enormous meal wolfishly without really relaxing, testing and enjoying it at all. They should learn to relax for ten minutes in shavasana before each meal dropping the mental preoccupations and relaxing the digestive and other bodily organs. In addition, an object of awareness while eating helps enormously. For example, one may follow a formula of filling the stomach one half with food, one quarter with water and one quarter empty, or one may fill the mind with the idea that with every piece of food placed into the mouth, one is feeding Agni, the deity of fire. Which will get him or her out of the kitchen, out of the house, away from the constant temptation of food and into some more stimulating and useful activity. As other interests awaken, the obsession with food will fall away.

Holistic Management Of Obesity

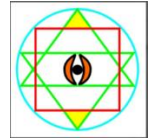
Here, one uses the same approach as when dealing with late onset diabetes mellitus. Please see the chapter 'Diabetes Mellitus'.

2. Yoga Program

1.Asana: These are essential to remove blockages, liberate prana, revitalize the mind and activate the endocrine glands. Obese people should be encouraged to practise to their limit, but never to exhaustion. Let them practise with enjoyment, relaxation and awareness, and their problems will fall away. It is not the way to lose weight. The obese person has poor stamina and willpower and will soon drop out of such a



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demanding and exhausting regime. Permanent loss of weight demands a total overhaul of the pranic energy structure of the body and mind. In yoga the slimming and rebalancing process occurs on an altogether different level from the gymnastics program aimed at sweating off a few kilograms, at best a temporary measure. Weight will surely reaccumulate quickly unless the psychic and pranic energies are rebalanced and glandular mechanisms readjusted. Best practices are pawanmuktasana and the shakti bandha series, followed by surya namaskara. Major asana, especially useful in balancing the endocrine glands, and spinal nerves, can be adopted after some months of daily practice of these simple ones.

2. Pranayama: Bhramari and nadi shodhana are especially useful in awakening diminished vitality. Excessive pranayama, which stimulate appetite, should be avoided. Mild bhastrika help speed up the metabolism and reduce fat.

3. Shatkarma: Kunjal and neti should be practiced daily, and poorna shankhaprakshalana should be practised once under guidance in an ashram. Laghoo shankhaprakshalana should continue once or twice weekly. These practices will relieve bowels, depleted liver and pancreas. As a result, long forgotten mental and physical lightness, increased vital energy and clarity of mind are experienced.

4. Relaxation: Yoga nidra is essential each day. A negative sankalpa (resolve) should not be adopted, as this is suppressive and may lead to overeating on the rebound. Appositive resolve, in a form such as, “My vitality is increasing daily” or “My creative energy is being liberated from food more and more each day” is a powerful means of overhauling a faulty, uninspired lifestyle.

5. Diet: Fasting is not recommended for obese people as it is extremely difficult to maintain a proper fasting program, free from the inevitable rebound reflex of overeating. Rather the daily diet should be made wholesome with simple food, regular meal times and no snacks in between. Sugar, sweets, oils, spices, milk and milk products, rich and refined foods which overtax the liver, digestion and heart, should be vastly reduced, in favour of whole grains, fruit and green vegetables.

Obesity Education

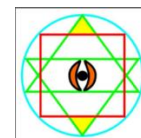
The community needs to be educated on the importance of eating for hunger and physical need rather than for state. The fashionable belief that a fat baby is a healthy one should be discarded, as this penalizes the child, leading to a weight problem in adolescence and later life. A child who lives in a house where frustrations and creative energy are wrongly channelled into overeating develops a similar samskara and carries it into later life.

3. Conclusion

Obesity is largely a result of overeating and poor dietary choices, influenced by both emotional and psychological factors. Understanding the underlying causes—be it mental restlessness or boredom—is crucial for effective intervention. Adopting a natural, balanced diet can help restore health and ideal body weight. Additionally, purposeful activities like karma yoga can aid in transforming negative patterns into positive lifestyle changes.

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**A Systematic and Scientific Impact of Physical Exercises Combined with Yogic Practices
on Achievement Motivation of Middleaged Type-II Diabetic Patients**

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Abstract: The objective of the study was to investigate the systematic and scientific impact of physical exercises and yogic practices on Achievement motivation of middle-aged type II diabetic patients. The research involved sixty (n=60) women chosen from the Alagappa group of Educational Institutions located in Karaikudi, Sivagangai District, Tamil Nadu. Participants' ages ranged from 35 to 45 years. Group I comprised fifteen participants engaged in physical exercise, Group II included fifteen participants practicing yoga, Group III consisted of fifteen participants who combined both physical exercise and yogic practices, while Group IV served as the control group with fifteen participants. The subjects were divided into four equal groups of fifteen participants each. The training lasted for six weeks, with sessions held five days a week, each lasting 45 minutes. Group IV, the control group, did not receive any specific instructions. Achievement Motivation were assessed using SAMT Questionnaire, quantified numerically. Data was collected from both the experimental and control groups. Statistical analysis was conducted using the dependent “t” test and ANCOVA. The “F” ratio of the adjusted post-test means was deemed statistically significant. The conclusion of the study combined physical exercises and yogic practices group increase the achievement motivation more effectively than the physical exercises and yogic practices group.

Keywords: Physical exercises, yoga, Middle aged diabetic women. Achievement motivation.

1. Introduction

Achievement motivation is the inner drive that pushes individuals to succeed or perform well when faced with challenges. It reflects a person's desire to overcome difficulties, demonstrate competence, and accomplish tasks efficiently and effectively. Motivation serves as the force behind one's actions, guiding behaviour toward a specific objective or outcome.

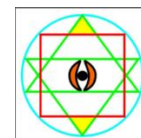
Every individual can experience motivation in different situations, which positively influences how they approach and complete their tasks. Developing this motivation either internally or with external support is essential for personal growth and achievement.

Achievement motivation arises when a person is aware that their actions will be judged and that the outcome could result in either success or failure. When individuals recognize that doing well will lead to a sense of pride and fulfilment, they become more driven to excel. Therefore, achievement motivation can be seen as a personal tendency or ability to take pride in one's accomplishments when success is attained in a particular task or activity (David & Hassarani, 1985).

To maintain an organically sound body and experience the best possible state of health and physical fitness, physical activity is beneficial. Achieving and sustaining physical activity helps to avoid many illnesses and diseases from developing too soon. Exercise is meant to improve heart, lung, and muscle function, as well as blood circulation, oxygen intake, and strength and endurance. It promotes mental clarity, emotional stability, stress reduction, and moral and spiritual growth. Many researchers firmly believe that regular exercise helps prevent cardiovascular diseases and maintain a strong, healthy heart (Kamalesh, 1988).



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Yoga can change in lifestyle that results in positive energy balance has been the cause of many metabolic issues such as high blood pressure, heart diseases, obesity, and related problems. Yoga, which is a well-established practice, has proven to have a strong positive effect on a person's physical, mental, emotional, social, and spiritual well-being. In light of this, various research studies have been conducted to assess the changes that occur during yoga practice.

2. Methods and Materials

The aim of the study was to find out the A systematic and scientific impact of physical exercises and yogic practices on Achievement motivation of middle-aged type II diabetic patients. The research involved sixty (n=60) women chosen from the Alagappa group of Educational Institutions located in Karaikudi, Sivagangai District, Tamil Nadu. Participants' ages ranged from 35 to 45 years. Group I comprised fifteen participants engaged in physical exercise, Group II included fifteen participants practicing yoga, Group III consisted of fifteen participants who combined both physical exercise and yogic practices, while Group IV served as the control group with fifteen participants. The training lasted for six weeks, with sessions held five days a week, each lasting 45 minutes. Group IV, the control group, did not receive any specific instructions.

Testing Procedure

Data was gathered before and after the training session. A Pre- test was given before the training, and a post-test was given after the training.

S.no	Variable	Test Items	Unit of Measurement
1	Achievement motivation	SAMT Questionnaire	In Number

Analysis of data

Table 1. Mean and dependent ‘t’ test for the Pre and Post Test on Achievement Motivation Experimental Groups and Control group

Mean	Physical Exercise Group	Yogic Practices Group	Combined Physical Exercise & Yogic Practices	Control Group
Pre Test	28.38	28.20	27.65	27.31
Post Test	30.25	30.00	33.95	27.45
‘t’ test	3.25*	2.86*	7.92*	0.10

*significant at 0.05 level of confidence

Table- I Shows that the Obtained ‘t’ values on Achievement motivation of Physical exercises, Yogic practices, Combined physical exercises and Yogic practices and control group are 3.25, 2.86 and 7.92 respectively, Since the table value significant difference with 3 df 14 at 0.05 level is 2.78 significant improvements in achievement motivation.

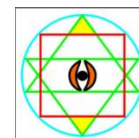


Table 2. Analysis of Covariance on Achievement Motivation of Experimental Groups and Control Group
(Score in Numbers)

Test	Physical exercises	Yogic Practices	Combined Physical Exercise & Yogic practice	Control group	Source of Variance	Sum of Square	df	Mean Square	F ratio
Pre Test Mean	28.38	28.20	27.65	27.31	Between	10.30	3	3.43	1.42
					Within	135.25	56	2.41	
Post Test Mean	30.25	30.00	33.95	27.45	Between	386.97	3	128.99	60.55
					Within	119.58	56	2.13	
Adjusted Post Test	30.90	30.14	34.00	27.80	Between	360.32	3	120.10	102.64
					Within	65.70	56	1.17	

*Significant at 0.05 level of confidence.

Table-II shows that the adjusted post-test scores for Achievement Motivation on Physical Exercise group 30.90, Yogic Practices 30.14, Combined Physical Exercise and Yogic Practices group 34.00 and Control group 27.80. The calculated 'F' ratio of 102.64 for the adjusted post-test scores was greater than the table value of 2.78 for degrees of freedom 3 and 55, which is needed for significance at the 0.05 level of confidence on Achievement Motivation.

The findings of the study show that there are important differences among the adjusted post-test scores of the Physical Exercise group, Yogic Practices group, Combined Physical Exercise group and Yogic Practices and Control group regarding Achievement Motivation performance.

Table 3. The Scheffe's Test for the difference between the Adjusted Post test Paired Means on Achievement Motivation (Numbers)

Adjusted Post-test Mean Values				Mean difference	Confidence Interval
Physical exercise	Yogic Practices	Combined Physical exercise & Yogic Practices	Control group		
30.90	30.14			0.76	1.16
30.90		34.00		3.1	1.16
30.90			27.80	3.1	1.16
		34.00	27.80	6.2	1.16
	30.14	34.00		3.8	1.16
	30.14		27.80	2.3	1.16

Significant at 0.05 level of confidence

Table-III shows that the adjusted average differences in Achievement Motivation between the Physical exercise group and Combined Physical Exercise and Yogic Practices group: 3.1, Yogic Practices group

and Control group 2.3, Physical Exercise group and Combined Physical Exercise and Yogic Practices group 3.1, Physical Exercise group and Control group 3.1, Combined Physical Exercise and Yogic Practices group and Control group: 6.2. All these values are higher than the confidence interval value of 1.16 for Achievement Motivation at a 0.05 level of confidence.

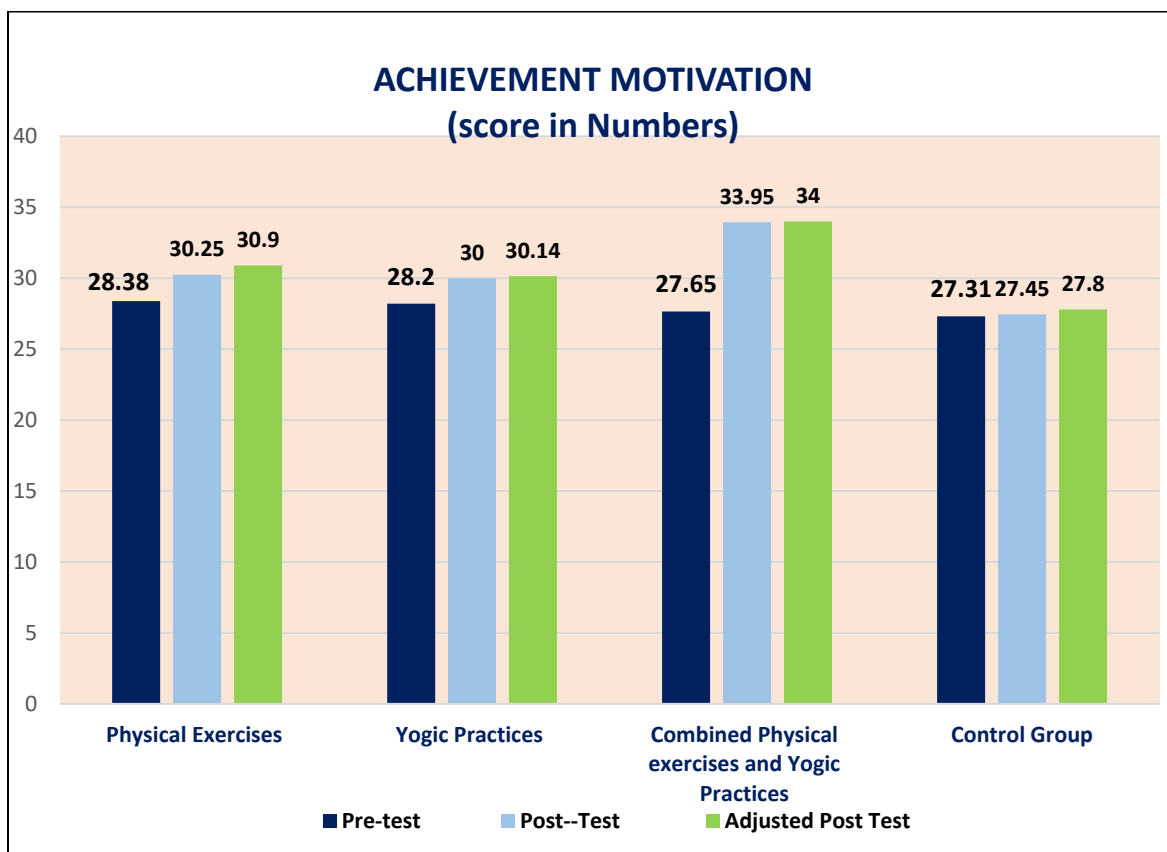


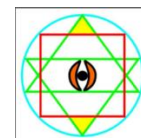
Figure 1. The Pre and Post and Adjusted post-test mean values for Physical exercises, Yogic practices, Combined physical exercises and Yogic practices and control group on Achievement motivation

3. Discussion on Findings

The study revealed that the combination of physical exercises and yogic practices had a significant positive effect on the achievement motivation of middle-aged individuals with Type-II diabetes. The findings indicate that a structured program involving physical activity and yoga helps enhance psychological factors such as intrinsic motivation, emotional balance, and mental focus, which are essential for personal achievement and long-term health management. This suggests that a holistic approach incorporating both physical and mental well-being can play a crucial role in improving motivational levels among diabetic patients.



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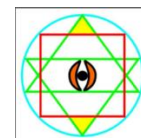


4. Conclusion

The study clearly shows that yogic practices and physical exercise are beneficial for enhancing mental health, as demonstrated by higher achievement motivation. This implies that middle-aged women's mental health may benefit from implementing such training programmes.

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Effect of Yogic Practices on Selected Physical Variables among College Overweight Women

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Abstract: The purpose of the present investigation is to find out the effect of yogic exercises on selected physical variables among college overweight women. To achieve the purpose 30 college women students for the present study, thirty school students from were selected from o women's university college, kodaikanal were selected as subjects at random and their ages ranged from 18 to 25 years. The subjects were divided into two equal groups of fifteen subjects each. The study was formulated as a true random group design, consisting of a pre-test and post-test. The subjects (n=30) were randomly assigned to two equal groups of fifteen subjects each. The group i underwent selected yogic exercises; group II acted as a control group. The data were collected from experimental and control groups before and immediately after the training period as pre and posttest. The collected data were analyzed by using 't' test and the level of confidence was fixed at 0.05. the result revealed that physical variables of college overweight women.

Keywords: Physical variables, yogic exercises, college overweight women.

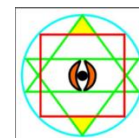
1. Introduction

Being overweight is one of the most prevalent lifestyle-related issues nowadays. The onset of numerous chronic diseases, including heart and respiratory conditions, Type 2 diabetes, hypertension, several malignancies, and early mortality, is significantly influenced by severe overweight or obesity. Recent scientific research and data from life insurance companies have demonstrated that the health consequences of excessive body fat extend beyond severe obesity and are linked to quite modest increases in body weight. Obesity is a severe issue that places a tremendous financial strain on the nation's resources. Yet, by making sensible lifestyle modifications, the symptoms can be substantially avoided. A person who is overweight has excess body weight, which could include water, fat, muscle, and bone. Obesity and overweight have become epidemic-scale problems on a global scale. Obesity increases the chance of developing diseases like diabetes, heart disease, osteoarthritis, some malignancies, high blood pressure, and high cholesterol (WHO 2003). In 2003, Australia's total burden of disease and injury was 7.5% attributable to high body mass (AIUW 2007).

According to estimates, overweight, obesity, and the disorders that go along with it cost Australian society and governments S21 billion in 2005. (Access Economics 2006). The body mass outcomes of certain individuals and populations depend on a variety of circumstances. Weight is influenced by specific lifestyle choices including exercise and eating habits. This publication includes data on body mass and related traits provided by persons participating in the National Health Survey (NIS).

2. Methodology

The purpose of this study was to find out the effect of yogic practice on selected physical variables among overweight college men students. To achieve the purpose of the study 30 overweight women's students were selected from Alagappa Arts College, Karaikudi. The subjects were selected from Faculty of General and the age group of the subjects was between 18 to 25 year. Thirty subjects were selected at random and subjects were divided into two equal groups designed one experimental group and the other Control group.



Thus each group consisted of 15 subjects. Each subject was oriented in the procedure to the administration of the test. The 't' test was used to analysis the significant different if any in between the groups respectively. The 0.05 level of confidence was fixed to test the level of significance which was considered as an appropriate.

Table 1: Analysis of t-ratio for the pre-test and post-test of Control group and Experimental group on Flexibility

Variables	Group	Mean		SD		Sd Error	df	't' ratio
		Pre	Post	Pre	Post			
Flexibility	Control	20.87	20.80	1.92	1.21	0.50	14	0.13
	Experimental	20.93	21.73	1.62	1.71	0.20		4.00*

*significane at 0.05 level of confidence

The Table I shows that the mean values of pre-test and post-test of control group in flexibility were 20.87 and 20.80 respectively. The obtained 't' ratio was 0.13 since the obtained 't' ratio was less than the required table value of 2.15 for the significant at 0.05 level of with 14 degree of freedom it was found to be statistically insignificant.

The mean values of pre-test and post-test of experimental groups in flexibility were 20.93 and 21.73 respectively. The obtained 't' ratio was 04.00 since the obtained 't' ratio was greater than the required table value of 2.15 for significance at 0.05 level of with 14 degrees of freedom it was found to be statistically significant. The result of the study showed that there was a significant difference between control group and experimental group in flexibility. It may be concluded. The result of the study that experimental group improved in flexibility due to six weeks of yogic practices.

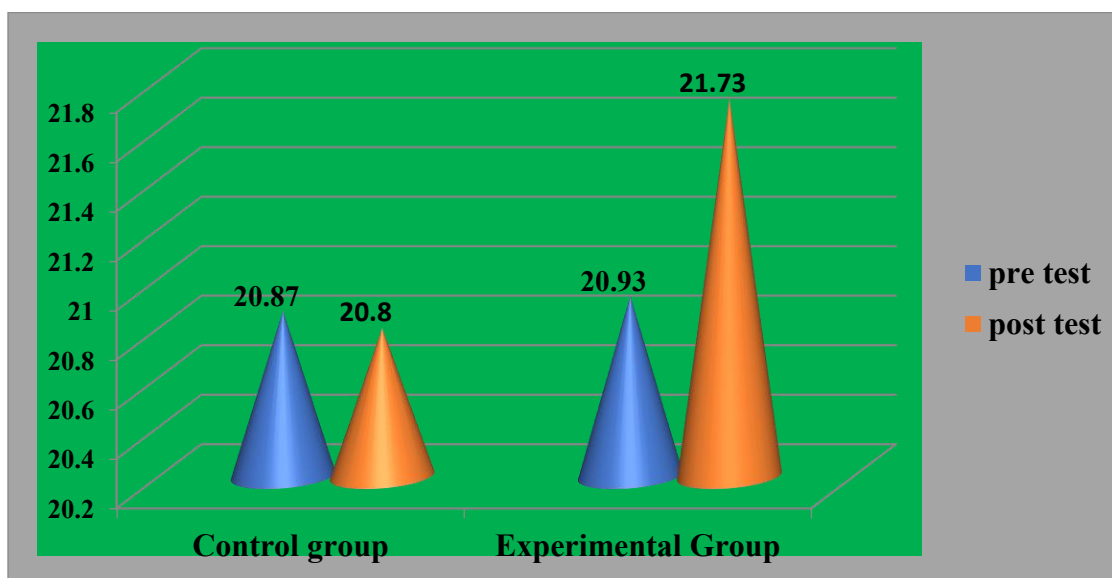


Figure 1. Bar diagram shows the mean values of pre and post test of experimental group and control group on Flexibility

Table 2. Analysis of t-ratio for the Pre-test and Post-test of Control Group and Experimental Group on Muscular Strength

Variables	Group	Mean		SD		Sd Error	df	't' ratio
		Pre	Post	Pre	Post			
Flexibility	Control	23.40	23.33	2.29	1.68	0.44	14	0.15
	Experimental	23.47	24.73	2.53	1.58	0.37		3.41*

*significance at 0.05 level of confidence

The Table II shows that the mean values of pre-test and post-test of control group in muscular strength were 23.40 and 23.33 respectively. The obtained 't' ratio was 0.15 since the obtained 't' ratio was less than the required table value 2.15 for the significant at 0.05 level of with 14 degrees of freedom it was found to be statistically insignificant.

The mean values of pre-test and post-test of experimental groups in muscular strength were 23.47 and 24.73 respectively. The obtained 't' ratio was 3.41 since the obtained 't' ratio was greater than the required table value of 2.15 for significance at 0.05 level of with 14 degrees of freedom it was found to be statistically significant. The result of the study showed that there was a significant difference between control group and experimental group in muscular strength. It may be concluded The result of the study that experimental group improved in muscular strength due to six weeks of yogic practices.

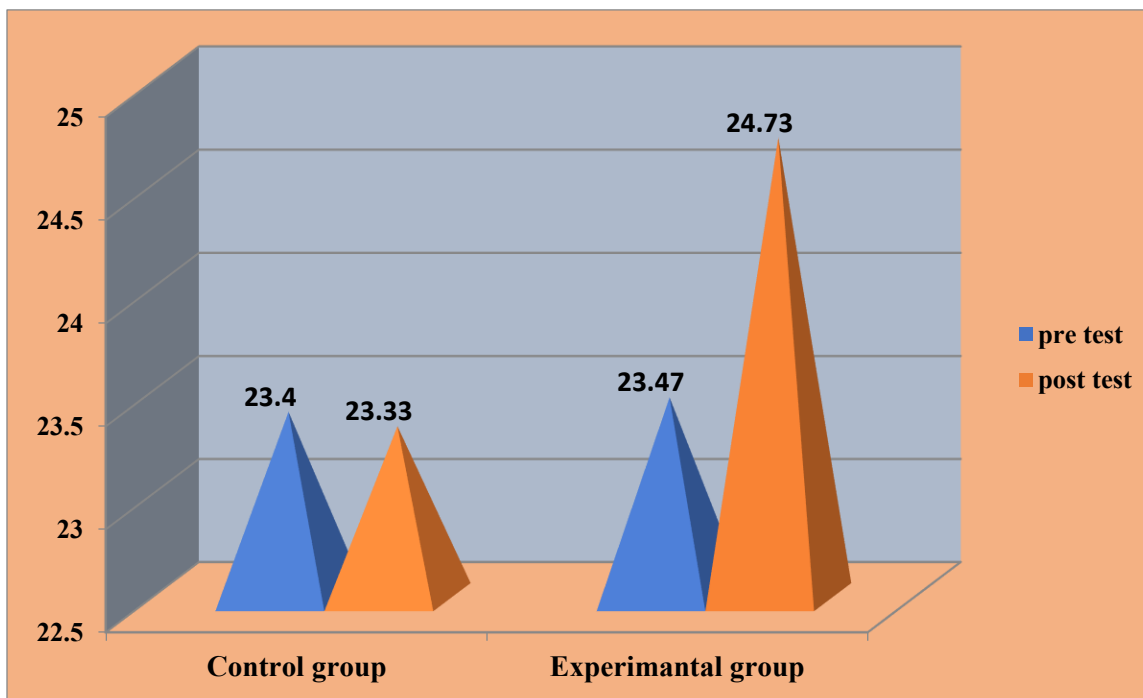


Figure 2. Bar diagram shows the mean values of pre and post test of experimental group and control group on Muscular Strength

Table 3. Analysis of t-ratio for the Pre-test and Post-test of Control group and Experimental group in Balance

Variables	Group	Mean		SD		Sd Error	df	't' ratio
		Pre	Post	Pre	Post			
Balance	Control	30.93	30.87	4.68	4.08	0.34	14	0.19
	Experimental	31.00	31.93	4.60	4.27	0.24		3.76*

*significance at 0.05 level of confidence

The Table III shows that the mean values of pre-test and post-test of control group in balance were 30.93 and 30.7 respectively. The obtained 't' ratio was 0.19 since the obtained 't' ratio was less than the required table value 2.15 for the significant at 0.05 level of with 14 degrees of freedom it was found to be statistically insignificant.

The mean values of pre-test and post-test of experimental groups in balance were 31.00 and 31.93 respectively. The obtained 't' ratio was 3.76 since the obtained 't' ratio was greater than the required table value of 2.15 for significance at 0.05 level of with 14 degrees of freedom it was found to be statistically significant. The result of the study showed that there was a significant difference between control group and experimental group in balance. It may be concluded The results of the study that experimental group improved in balance due to six weeks of yogic practices.

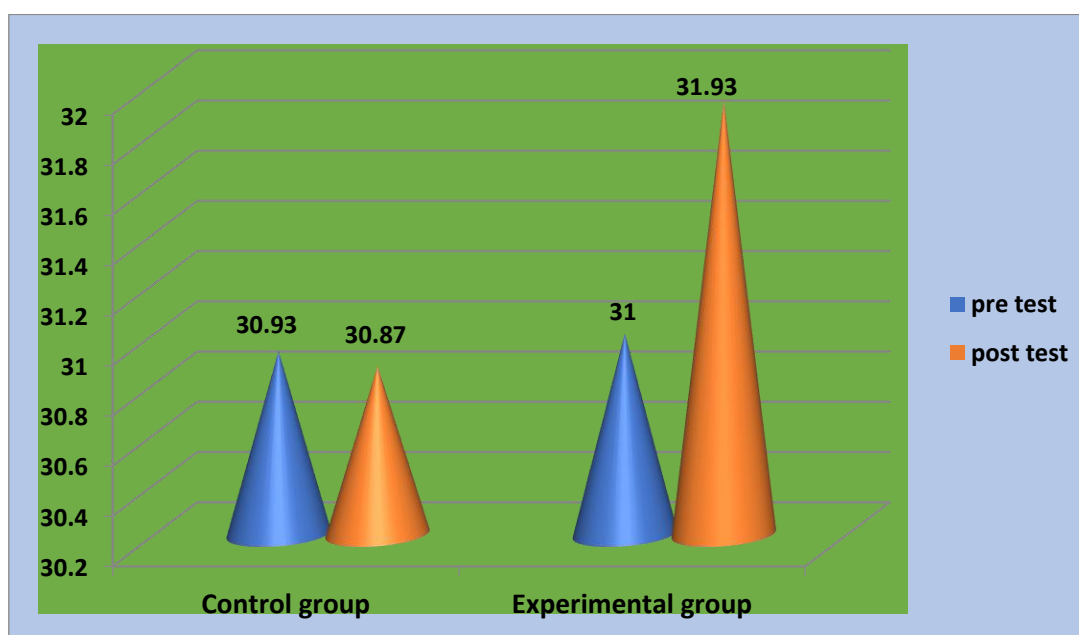
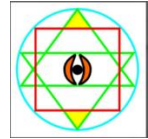


Figure 3. Bar diagram shows the mean values of pre and post test of experimental group and control group on balance



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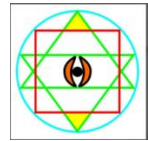
3. Conclusions

Within the limitation of the study the following conclusion were drawn. Flexibility, Muscular strength and Balance were significantly improved due to effect of specific training.

1. In flexibility the experimental group showed significantly greater improvement than the control group.
2. In muscular strength the experimental group showed significantly greater improvement than the control group.
3. In balance the experimental group showed significantly greater improvement than the control group.

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The Impact of Yoga and Mindfulness on the Mind and Its Implications for Health and Illness

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Abstract: In today's times it is necessary to integrate a holistic understanding of the human body, remembering the importance that mind and emotions have in the physical appearance of the body. The purpose of this paper is to provide a comprehensive overview of the benefits of consistent yoga practice and to assess the results of a few chosen articles that investigate the therapeutic effects of yoga. Healthcare providers must comprehend the fundamentals of yoga and the empirical data demonstrating its wide range of therapeutic benefits as the several people participating in mind-body fitness programs, like yoga, keeps growing. As per the results of this study, yoga has the potential to significantly boost muscular strength and flexibility, enhance cardiovascular and respiratory health, aid in addiction recovery, reduce stress, anxiety, and depression, lessen chronic pain, enhance sleep quality, and ultimately enhance overall well-being and quality of life. The goal of this article is to present a thorough analysis of the advantages of regular yoga practice and to evaluate the findings of a few selected articles that look at the therapeutic advantages of yoga. Given the growing number of people participating in mind-body fitness programs like yoga, it is imperative that medical professionals comprehend the fundamentals of yoga and the scientific data demonstrating its wide range of therapeutic benefits.

Keywords: yoga; mind-body fitness; advantages; quality of life; chronic pain.

1. Introduction

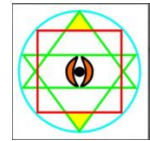
In order to achieve an improvement of health and quality of life with respect to existing physical problems, yoga, Varma therapy and meditation play a very important role [1].

They are one of the few techniques and therapies that manage to go deep into the totality of our body, reaching the origin of the physical problems and deactivating or releasing them. From my point of view as a physiotherapist, the great majority of back problems and pains hide an underlying emotional and mental origin. Neck pains usually have their origin in mental patterns of excessive thinking and control [2]. They occur in very self-demanding and perfectionist people who always need to have everything under control, unable to flow letting them be carried away by the events of the present moment. They have a predominance of the rational part of their mind at the time of developing their day to day. This excessive mental rigidity with themselves and with the outside usually manifests itself in stiffness and pain in the muscles at the base of the skull and neck.

It is difficult for them to let go of caring for others, they have many attachments, and they find in giving more than they receive a certain personal value that they are unable to give to themselves. They assume too many responsibilities even if they do not correspond to them and they do not delegate easily since they feel that through these excesses they will be valued and loved more.

Until they change their attitude and begin to love value and take care of themselves physically, mentally and emotionally, their body does not find relief.

Chronic kidney disease (CKD) includes a number of health consequences that have a substantial influence on a person's overall quality of life and cause them a great deal of stress. Problems include insufficient sleep and appetite, higher heart rates and blood pressure, and increased blood sugar and high levels are common. For individuals with chronic kidney disease [3], the graphic below offers a succinct summary of the numerous advantages of yoga exercises. Improved blood stress, improved lipid profile (particularly cholesterol levels), improved kidney function, improved glycemic control as demonstrated by boosted



blood sugar levels, improved sleep quality, and an overall enhancers in quality of life are some of these advantages (Figure 1).

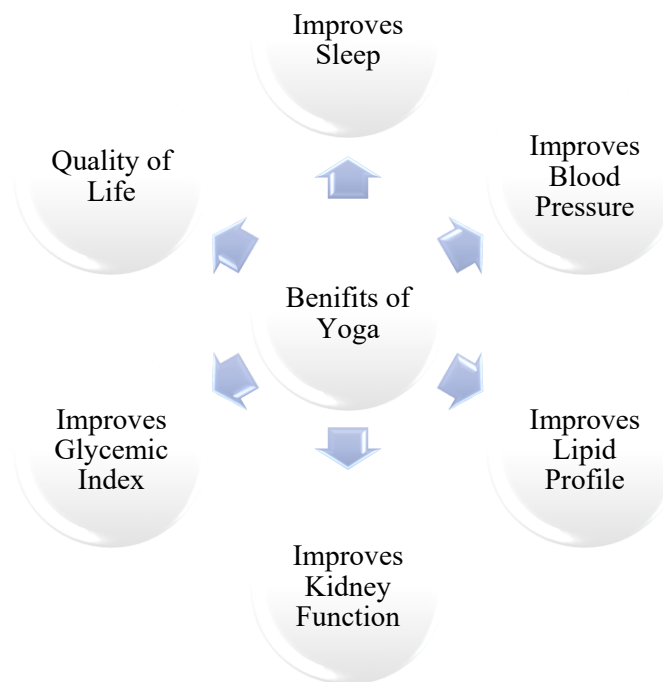


Figure 1. Yoga's health advantages for those suffering from chronic kidney illness

Considered the ultimate authority on yoga, Patanjali's Yoga Sutras is the foundational literature that largely articulates yoga theory and practice. Nowadays, asana, the physical practice, is what most people think of when they think of yoga, yet asana is only one of numerous tools there are for psychological recovery. Only three of the 196 sutras mention asana, which is noteworthy. The other sutras explore several facets of yoga, such as the use of sound, meditation, conscious breathing techniques, dietary and lifestyle changes, and visualization. Patanjali presents ashtanga, or "eight limbs," as an eightfold route to awareness and consciousness in the Yoga.

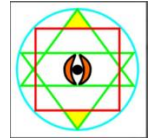
2. Related Works

For people with non-communicable illnesses and lifestyle-related conditions such as obesity, heart disease, high blood pressure, and polycystic ovarian syndrome, meditation enhances quality of life and lessens the burden of disease [4]. Studies show that by enhancing immunity, oxidant status, hormone state, and cognitive function, controlled rhythmic respiration methods like Sudarshan Kriya support a healthy lifestyle. Previous research has shown that yoga and meditation practices improve neurophysiological processes and can be used as an alternative therapy for a several psychosomatic conditions. A recent study shown how mindfulness-based meditation can improve quality of life metrics linked to gastric reflux illness and lower anxiety.

The Patanjali Yoga Sutra and other ancient texts are full of insight that could help with a variety of mental health issues [5]. The 196 aphorisms that Sage Patanjali recorded in Sanskrit are known as the Yoga Sutras. Sutras are separated into four chapters, or padas: Samadhi Pada, Sadhana Pada, Vibhuti figurine Pada, and



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Kaivalya Pada. In Sadhana Pada and Vibhuti Pada, the eight aspects of yoga are discussed as a means of overcoming mental fluctuations. The oldest and most recently studied type of meditation is rajyoga, which is advised to be practiced everywhere, irrespective of age, occupation, or physical or mental health. Because of its ultimate comprehensive perspective, the Patanjali Yoga Sutra is regarded as the most important literature for establishing ideals in the educational system. Given that systematic counseling is necessary everywhere, Varambally and Gangadhar proposed using the Patanjali Yoga Sutra as a basis for creating an intervention strategy for a variety of mental health conditions.

A key idea in Ayurveda, sadvritta relates to the moral, ethical, and behavioral principles necessary to preserve overall wellness. It is a collection of universal rules that regulate a person's social, psychologically and personal behavior and guarantee a happy and healthy existence. The Sanskrit word "Sadvritta" comes from the words "Sat" (good or right) and "Vritta" (conduct or demeanor) [6]. An intellectual and moral code that guarantees a controlled, sound, and peaceful existence is known as sadvritta, and it is a fundamental Ayurvedic principle. Ayurvedic classics Charaka Samhita, Susruta Samhita, and Vagbhata's Ashtanga Hridaya all mention Sadvritta as a key component in preserving health and preventing illness. In order to promote holistic well-being, each of this literature highlights the significance of moral conduct, harmonious behavior, proper cleanliness, and righteous conduct.

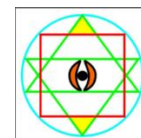
Over 50 million people worldwide suffer from Alzheimer's disease (AD), a progressive, irreversible neurological illness. Memories, spoken language, and reasoning are among the cognitive and behavioral skills that are gradually compromised, and the symptoms get worse with time. Depending on the degree of cognitive decline, AD is divided into stages, including mild, preclinical, and senile [7]. AD has a complex etiology that includes genetics, personal habits (such as food, physical activity, drinking and smokers), education, circumstances, and age, which is its biggest risk factor. The World Health Organization projects that by 2024, 10% of the world's citizens will be 85 and over, and by 2045, that number will rise to 24%. These demographic changes highlight a higher incidence of age-related diseases like AD.

An essential part of our nervous system, the self-regulating nervous system controls involuntary physiological processes such as blood pressure, breathing, digestion, and heart rate [8]. Both the parasympathetic and sympathetic nervous systems are its two primary branches. The SNS primes the human organism for "fight or flee" reactions, triggering physiological processes to deal with stress and crises, which raises breathing and heart rate. On the other hand, by lowering heart rate and gastrointestinal activity, the PNS encourages a "sit back and eat" condition that facilitates relaxation and recuperation.

One's health is impacted by increased stress on both a physical and psychological level. Stress increases the risk of endocrine, cardiovascular, autonomic, depressive, and anxiety disorders. There have been reports of immune system dysfunction among nursing staff members who experience ongoing work-related stress [9]. Pregnancy-related stress, both personal and professional, has an impact on fetal health. Incorrect communication with the person in need and their family members, incorrect medicine, and an increase in hospital-acquired infections has all been seen. Stress raises the financial burden both directly through employee absenteeism and health care costs and indirectly through lowering patient care worth, which raises patient health care costs.

3. Methods and Materials

This research explores how meditation might reduce stress, nervousness, and melancholy using scholarly materials from reliable books and journals. The PubMed database and other globally recognized health and meditation-related information sources were major components of the search approach [10]. The keywords selected were "Stress," "Anxiety," "Depressive Symptoms," "Emotional Depression," along with "Role of Meditation in Psychological and Physical wellbeing." This study provides a conceptual analysis of how meditation can lower stress and enhance general wellness and life quality. It makes use of citations from books, scholarly journals, foundational works, and well-known publications on the topic.



3.1 Definition and meanings of Mindfulness

"Meditation" is derived from the Latin word "meditari," which means "to deliberately participate in meditation or thought." The word "meditation" is derived from the Latin and Greek roots of the word "medicine." A condition of "thoughtless consciousness" or mental silence characterizes the distinct and well-defined experience of meditating. While retaining a high level of attention, this state involves less mental effort. Meditation is a set of self-regulation exercises intended to improve consciousness and focus in order to intentionally control mental processes. Unwinding, concentration, altered awareness, putting aside rational thought, and cultivating an attitude of self-observation are all components of meditation. Because of this, there is no universally accepted definition of meditation, and it has been characterized in a variety of ways [11]. It is challenging to condense its essence into a single definition. Any activity that satisfied the following requirements was categorized as mediation.

- uses an exact and well-defined technique;
- includes muscle relaxation at a certain moment;
- involves neither analyzing or judging probable psychophysical consequences or results logically or forming any expectancies; and
- A condition that one induces for oneself [12];
- Entails using a self-focus technique or "anchor" to focus interest.

Irregular conception and yoga

Because regular yoga practice enhances the entire integration of physiological systems, it improves reproductive functioning in both men and women. Indicating ideal modifications in hormonal stress profiles, it also lowers blood levels of testosterone and the luteinizing hormone, raises excretion of cortisol, and decreases urinary excretion of catecholamines and lisinopril [13]. Frequent yoga and meditation reduce oxidative DNA degradation and seminal oxidation stress at the molecular level in cases of infertility in men that cannot be explained.

Sperm oxidative DNA damage, the buildup of carcinogenic oxidized DNA adducts, and genome-wide hypomethylation could all be contributing causes to juvenile malignancies. Consequently, minimizing sperm DNA damage by yoga and mindfulness may have a beneficial effect on the male epigenome and lower levels of mutagenic adduct which will lower the incidence of childhood malignancies and congenital abnormalities and have an effect on the offspring's long-term health. At a tertiary center in India, 131 fathers of kids with retinoblastoma—a non-familial irregular heritable—and 50 controls—fathers of children in good health—were enlisted. Reactive oxygen species (ROS), DNA breakage index, 8-oxoG, telomere length, and sperm characteristics were measured at day 0 and three and six months of action, in accordance with WHO 2010 criteria. The six-month action, which included yoga theory and practice, lasted two hours every day. When comparing fathers of kids with retinal tumors to oversight, overall levels were noticeably higher. However, after three months following the yoga session, positive changes were noted. Their levels of ROS, DNA disintegration, and 8-oxoG had all dramatically decreased six months following the treatment.

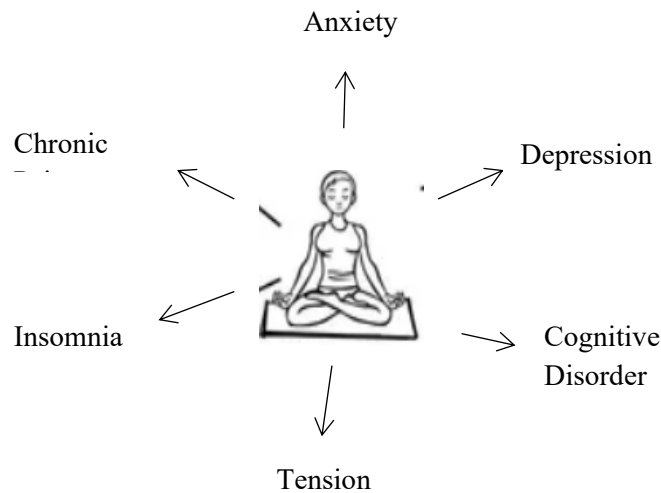
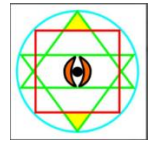


Figure 2. Conditions that are currently treated with MT

The ancient Chinese had perfected the self-exercise technique for maximizing mental and physical fitness through breath control and meditation as early as 5,000 years ago. Yoga, meditation, tai chi, and other alternative therapies have gradually gained popularity. A general definition of mindfulness is a form of present-centered awareness that is simple, nonjudgmental, and embraces each idea, emotion, or experience as it emerges in the attentional field [14]. To attain physical and mental equilibrium, the MT advises practitioners to develop this consciousness through prayer, fully and logically focus on the present moment with a behavior of recognition (not over-identification) as opposed to a reaction perspective, and work in tandem with particular processes to reach body and mind. MT has been widely used to treat sleep problems, chronic pain, tension, and sorrow (Figure 2).

4. Implementation and Experimental Results

4.1 Impact of Raja Yoga Meditation on Farmers' Health

It has been demonstrated that Raja yoga mindfulness benefits not only water, soil, crops, and fruits and vegetables, but also the health of those who practice it.

BKRYM facilitates mental clarity and relaxation, which helps one rediscover and re-establish a connection with the original divine force. Farmers' wealth, mental and physical condition, and overall well-being are all improved by practicing Raja yoga meditation, which also helps to reduce the number of farmers who commit suicide [15]. To assess the effects of Raja yoga concentration on the state of well-being of those who practice it, a pilot study was carried out in Punjab (Figure 3).

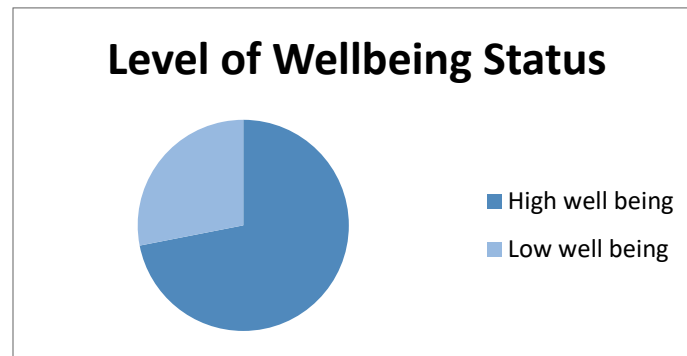


Figure 3. Pie chart displaying the frequency and proportion of people practicing Rajyoga meditation that are in a state of well-being

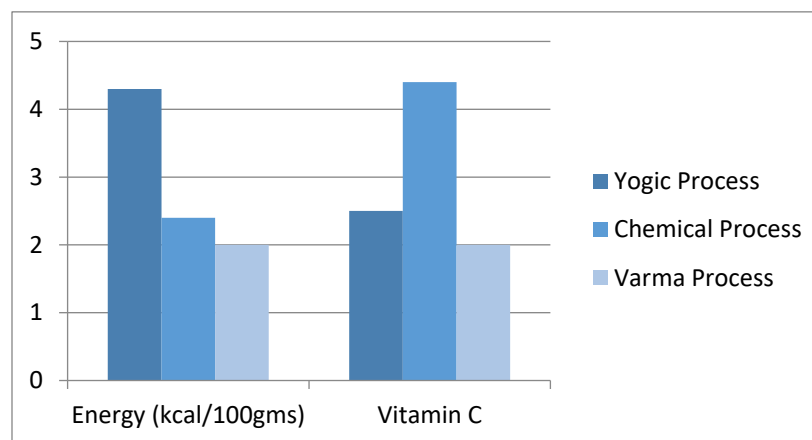


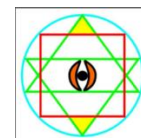
Figure 4. This graph shows that tomato crops treated with BKRYM had higher levels of energy and Vitamin C

Alcoholic and other drug addicts have been found to benefit from the Raja yoga meditation practice in Figure 4. Additionally [16], it was discovered that crops cultivated using BKRYM techniques were brimming with healing energy and happy tremors which would benefit customers' wellbeing.

5. Conclusion

We want to draw attention to how crucial it is to use mindfulness and yoga practices as supplemental therapy for serious mental health conditions. To meet the demands of the patients, the therapists and mental health specialists should collaborate closely. It's interesting to note that during the intervention; only few participants in the included studies experienced negative side effects or worsened positive sensations. This likely implies that patients with schizophrenia were conducted MDD, and BD can practice yoga and mindfulness practices without experiencing significant symptom worsening.

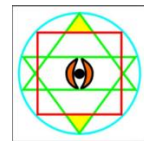
BKRYM From a sustainable perspective, mindfulness is widely recognized as a helpful farming and nutritional practice. This is advantageous because it is primarily non-profit driven and resource-free. It is most likely the sole technology for ecological growth because it has no ecological impact. Embracing meditation-based farming has found to be extremely advantageous in terms of both product quality and cost



when combined with organic components. It is advised since it has the ability to completely resolve the world food issue.

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Efficacious methods to cure Adhesive capsulitis in diabetic patients without medicine

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Abstract: Adhesive capsulitis or frozen shoulder is musculoskeletal problem it affects diabetic patients 10 times more as compared to non diabetics resulting in pain and limited range of movement. This condition mainly occurs in middle aged individuals. Adhesive capsulitis develops in 3 stages. Painful, freezing and thawing phase conventiona treatment modalities like analgesics. NSAIDS, steroids and surgery have certain limitations. Many female patients in age categories 40,43,47,48,50 presented with pain and restricted movements of left shoulder joint was treated in natural way by applying Natural Aloevera gel and ulunthu Thailand in affected area,by exposing to sunlight,performing mudras for a particular time .Avoiding sugar and Air conditioner fully till the recovery and having vata, Kapha pacifying diet.within a week pain subsided and satisfactory improvements were found in shoulder joint movements and everyone recovered completely within a month.

1. Introduction

Adhesive capsulitis, commonly known as frozen shoulder, is characterized by painful and progressive shoulder motion loss due to fibrotic joint capsule changes. This condition predominantly affects middle-aged adults, especially those with endocrine disorders such as diabetes or thyroid dysfunction, which can predispose individuals to more severe forms of the disease. Despite its commonality, the pathophysiology remains only partially understood, and the condition is often under-recognized, leading to delays in treatment and prolonged disability. The persistent nature of adhesive capsulitis and its significant effect on a patient's daily functioning emphasizes the critical need for expedient diagnosis, treatment, and a comprehensive care strategy involving multiple medical specialties.

Etiology

Adhesive capsulitis is categorized into primary and secondary types based on etiology.

Primary Adhesive Capsulitis

This form occurs without an obvious precipitating factor and is often considered idiopathic. and is thought to arise from an intrinsic inflammation leading to fibrotic changes within the shoulder capsule. Though the exact cause is unknown, it is frequently associated with systemic conditions such as diabetes mellitus and thyroid disorders, suggesting an underlying systemic inflammatory or autoimmune component.

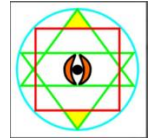
Secondary Adhesive Capsulitis

This form results from an external event or condition directly affecting shoulder mobility. Common causes include:

Trauma: A significant injury to the shoulder that leads to immobilization can precipitate adhesive capsulitis.

Surgery: Postoperative complications, especially shoulder or chest wall surgeries, can lead to the development of adhesive capsulitis.

Prolonged immobilization: Extended immobilization after injury or surgery can lead to stiffening of the joint capsule.



Clinical reviews suggest that other risk factors, such as prolonged hyperglycemia in diabetics, hormonal imbalances in thyroid disorders, and possibly an increased immune response, play roles in the development of the condition.

Epidemiology

Adhesive capsulitis exhibits specific epidemiological patterns that highlight its impact on various population segments:

Prevalence: Adhesive capsulitis affects approximately 2% to 5% of the general population.

Age of onset: The mean age of onset is typically around 55. This population often corresponds with an increase in the incidence of various systemic conditions like diabetes and thyroid disorders.

Gender disparity: Women have a slight predominance, with a ratio of about 1.4:1 compared to men. This sex disparity may be related to hormonal factors or differences in immune system functioning.

Affected side: The nondominant hand is more often affected. This observation might relate to differential use patterns and compensatory behaviors affecting biomechanics and physiological stress responses. Impact of comorbid conditions: Individuals with autoimmune and endocrine comorbidities, such as thyroid disorders and diabetes mellitus, are more prone to developing adhesive capsulitis. These conditions alter the body's inflammatory and fibrotic responses, exacerbating the progression and symptoms of adhesive capsulitis.

Influence of diabetes duration: The duration of the disease can significantly influence treatment outcomes for patients with diabetes. Longer durations of diabetes are often associated with poorer outcomes in managing adhesive capsulitis, likely due to the chronic hyperglycemic environment affecting collagen elasticity.

Pathophysiology

The pathophysiology of adhesive capsulitis remains uncertain and involves a complex interplay between inflammation and fibrosis. Initially, an inflammatory response leads to pain and limited motion. Subsequently, fibrotic changes occur within the joint capsule, particularly the rotator interval, leading to thickening of the coracohumeral ligament and contraction of the joint capsule. These changes are often visualized in imaging studies, demonstrating reduced joint capsule volume and thickening of the synovial lining. The fibrotic process is mediated by various cytokines and growth factors, which contribute to the proliferation of fibroblasts and excessive collagen deposition, further restricting shoulder mobility.

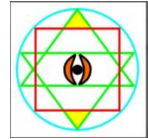
Histopathology

Histologically, adhesive capsulitis is characterized by synovial hyperplasia, angiogenesis, and eventual joint capsule fibrosis. These changes lead to a palpably thickened and contracted joint capsule, significantly restricting both active and passive range of motion. The pathophysiology involves both inflammation and fibrosis, and the condition passes through several stages, including an initial inflammatory phase, a fibrotic phase characterized by increasing stiffness and limited range of motion, and a thawing or regression phase, where gradual improvement in shoulder mobility occurs. The duration of each stage can vary among individuals, and arthroscopic findings provide visual evidence of the pathological changes occurring within the joint. Arthroscopic studies of the affected shoulder show:

Subacromial fibrosis: The presence of fibrous tissue and adhesions in the subacromial space leads to restricted movement and impingement of the shoulder structures.

Proliferative synovitis: The synovium lining the joint capsule shows signs of excessive proliferation and inflammation, which contributes to the thickening of the synovial tissue.

Capsular thickening: The joint capsule thickens and fibroses, leading to shoulder joint stiffness and a loss of range of motion.



History and Physical

The history of patients with adhesive capsulitis typically involves a gradual onset of shoulder pain that intensifies and restricts motion over weeks to months. This pain may not initially be severe but typically worsens, impacting daily activities such as dressing, reaching, or sleeping. Patients often report an initial period of pain before stiffness sets in. However, as the condition progresses, the stiffness becomes more prominent and the pain transitions to a constant dull ache, with sharp pains with sudden movements or when reaching extremes of motion. This condition can persist from a few months to 2 to 3 years. A key clinical sign is the marked reduction in both active and passive range of motion. This includes difficulty with flexion, abduction, external rotation, and internal rotation. The typical pattern of range of motion loss starts with external rotation, followed by abduction, internal rotation, and flexion. This restriction in movement is frequently accompanied by pain, which may prevent a thorough examination. Patients will have diffuse tenderness around the joint upon palpation. Despite this tenderness and limited motion, distal neurological function remains intact, helping differentiate adhesive capsulitis from other conditions, such as neurological impairments or more extensive rotator cuff injuries. Special tests such as the Neer and Hawkins tests for impingement and Speed test for biceps tendinopathy often yield positive results, suggesting the involvement of surrounding structures. In severe cases, there may be an observable loss of the natural arm swing during walking and signs of muscle wasting due to disuse or compensatory behavior to avoid pain.

Staging

The clinical course of adhesive capsulitis varies significantly among individuals and is influenced by personal factors and treatment efficacy. While some patients regain full range of motion within months, others may experience a protracted course lasting up to 3 years. Disease progression is described in 3 clinical phases. Each varies in duration and is characterized by different symptoms.

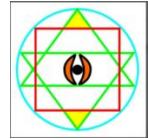
The initial phase, known as the freezing phase, is marked by diffuse, disabling shoulder pain that worsens at night with increasing stiffness. The pain intensifies as the range of motion begins to decrease. This phase typically lasts from 2 to 9 months. The intermediate frozen phase is characterized by reduced pain intensity, and persistent stiffness emerges as the primary concern. Capsular rigidity progressively restricts the shoulder's range of motion across all planes, significantly impacting functionality. This phase generally lasts between 4 to 12 months. Last, the thawing phase is characterized by gradual pain reduction and mobility restoration.

Prognosis

The prognosis for patients with adhesive capsulitis is generally good with early and appropriate management, including physical therapy, anti-inflammatory medications, and corticosteroid injections. Approximately 80% of patients regain near-normal or normal shoulder function with proper treatment. Early intervention can lessen the severity and duration of symptoms and improve outcomes. While the prognosis is generally favorable, about 10% to 20% of patients experience residual symptoms, including stiffness and discomfort. Persistent symptoms can affect quality of life and range of motion. Individuals with comorbid conditions such as diabetes mellitus or thyroid dysfunction commonly have longer and more severe courses of adhesive capsulitis and have a less favorable prognosis. In cases where conservative treatments fail, surgical interventions such as capsular release or manipulation under anesthesia are considered. These procedures generally have good outcomes, but like all surgeries, they come with risks and require postoperative rehabilitation to regain full function.

Complications

Complications vary depending on the stage of the disease and the treatment approach. Residual shoulder pain and stiffness are the most common issues, often persisting even after the condition has resolved. Immobility causes the shoulder to become deconditioned and more vulnerable to additional injury such as



labral tears resulting from excessive stress on the shoulder capsule and adjacent structures. Secondary injury can also occur with surgical procedures intended to restore mobility, such as manipulation under anesthesia. The force applied during this procedure can cause humeral fractures and biceps or subscapularis tendon ruptures. Furthermore, the condition and its treatment can potentially lead to more severe complications, including glenohumeral joint dislocation and rotator cuff tears.

2. Effective Frozen Shoulder Treatments

When it comes to frozen shoulder treatment, the goal is to reduce inflammation, alleviate pain, and restore the range of motion. Here are some of the most effective ways to manage frozen shoulder from home:

Anti-Inflammatory Diet

One of the easiest ways to support your body during recovery is by following an anti-inflammatory diet. Foods rich in antioxidants and omega-3 fatty acids can help reduce inflammation, which is a major cause of pain in the shoulder joint.

Start by cutting down on processed foods and refined sugars, which can contribute to inflammation. Instead, focus on whole, nutrient-dense foods like

Fruits and vegetables: Especially leafy greens, berries, and cruciferous vegetables like broccoli and cauliflower.

Healthy fats: Found in avocados, olive oil, and nuts.

Fatty fish: Salmon, mackerel, and sardines are excellent sources of omega-3s, which have powerful anti-inflammatory properties.

By making small changes to your diet, you can help reduce the inflammation contributing to your frozen shoulder.

Cryotherapy (Cold Therapy)

Utilizing cryotherapy, also known as cold therapy, is an effective method to alleviate pain and reduce inflammation in the shoulder.

Applying an ice pack or cold compress to the affected area for 15-20 minutes multiple times a day can effectively numb the pain and minimize swelling, particularly during the initial, more painful stages of a frozen shoulder.

A research by National Library of Medicine indicates that integrating cryotherapy with physical therapy can result in improved outcomes for treating frozen shoulder, enhancing both range of motion and overall shoulder function.

Exercises and Stretches

While it may seem counterintuitive to move your shoulder when it's in pain, gentle stretches and exercises are key components of frozen shoulder treatment. These exercises help improve flexibility and restore movement to the shoulder joint.

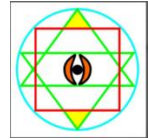
Pendulum Stretch: Stand next to a table, bend at the waist, and let your affected arm hang down. Gently swing your arm in small circles, forward, backward, and side to side. Repeat this for 5-10 minutes every day.

Towel Stretch: Hold a towel behind your back with one hand and grab the opposite end with your other hand. Slowly pull the towel upward with the unaffected arm, stretching your affected shoulder.

Finger Walk: Stand close to a wall, about three-quarters of an arm's length away. Touch the wall at waist height with your fingertips and gently walk your fingers up the wall, moving as high as you comfortably can. Let your fingers do the work, not your shoulder. Slowly lower your arm, using your other hand if needed. Repeat this 10 to 20 times daily.



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Armpit Stretch: With your unaffected arm, raise the affected arm onto a shelf at about chest height. Slowly bend your knees to open up the armpit. Gradually deepen the knee bend to gently stretch the armpit, then straighten your knees again. Each time you bend, stretch a little more without pushing too hard. Repeat this stretch 10 to 20 times daily.

Cross-body reach: Whether sitting or standing, use your healthy arm to support your affected arm by lifting it at the elbow. Gently bring the arm across your body to stretch the shoulder, applying light pressure. Hold the position for 15 to 20 seconds, and repeat this stretch 10 to 20 times daily.

Consistently and gently doing these stretches can gradually increase your range of motion and improve flexibility in your shoulder over time.

Natural treatment for frozen shoulder patients with Diabetes

First treating the root cause is important. In order to control their aggravation of disease we gave them a strict diet plan which completely stopped them from taking sugar, processed food, fried items, late night dinners. We insisted them to take a balanced diet with more leafy greens, vegetables, fruits. Buttermilk, Ginger and turmeric tea, black gram porridge, magnesium rich foods like nuts and seeds to reduce both diabetes and frozen shoulder.

Patients were made to apply Aloe vera gel and ulunthu thailam to the affected hand in alternate days and made them to expose to morning and evening sunlight.

Apan mudra was asked to perform for 20 min daily, Anulom vilom also known as alternate nostril breathing for 10 min and vayu mudra for 40 minutes daily. We asked them to avoid air-conditioned rooms and sugar completely till they recovered fully. All the patients were able to lift their hand 100 percent and rotate their hand in all directions within a month and they were asked to follow vata and kapha pacifying diet for two more months.

3. Conclusion

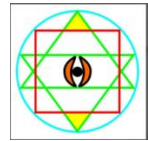
People with diabetes are more likely to develop Frozen shoulder. It can be cured effectively by easy ways. An early diagnosis will help to provide treatment for pain and lack of function that resulting from frozen shoulder.

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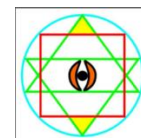
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Human Energy and Energy Medicine: Fundamentals, Therapies and Clinical Applications

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Abstract: This paper examines the foundations and new developments in human energy systems and energy medicine regarding its relevance and use in holistic health care. We have explored the scientific and metaphysical aspects of the bioenergetic fields and the relevance of these fields to physiological and psychological well-being. A range of therapeutic modalities (including acupuncture, Reiki, therapeutic touch, and biofield therapies) have been discussed concerning mechanisms, effectiveness, and clinical applications. This study contributes to the integration of traditional knowledge and new areas of clinical research and highlights the ability of energy medicine to assist chronic conditions, facilitate the healing process, and facilitate wellness. Moreover, the paper also recognized the necessity for consistent and standardized methodological approaches and enhanced interdisciplinary collaboration to engage with the research and practice of energy medicine.

Keywords: Energy medicine, complementary therapies, mind-body practices, reiki, qi gong, pranic healing, emotional balance, psycho-emotional well-being, self-care, vital energy, prana, chakras, holistic approach, Eastern tradition, emotional health.

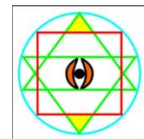
1. Introduction

In a world defined by stress, emotional disconnection and increasing interest in self-care approaches, practices based on “human energy” - such as prana and chakras from the Indian tradition, and their equivalent in Chinese qi - have gained remarkable popularity. These come under the heading of “energy medicine”, which includes therapies such as Reiki, Qigong, pranic healing, therapeutic touch, among others, based on traditional systems such as Ayurveda, yoga and Taoist practices.

It is suggested that these therapies work by balancing energy centres (chakras), canalising vital energy through pranayama or unblocking the flow through various techniques. Benefits include reduced physical pain, relief from stress and anxiety, improved sleep, and a subjective increase in emotional and life wellbeing.

Despite its wide social popularity, the available scientific evidence remains limited. While Qigong has shown moderate effects on reducing anxiety and depression in meta-analyses, many practices such as pranic healing or energy aromatherapy lack reliable and consistent trials. In addition, important methodological critics and the absence of clear biological mechanisms from science remain.

This research offers a critical and balanced view: it defines the traditional concepts and how they differ from the scientific approach, outlines the main energy therapies and their supposed mechanisms, reviews their clinical applications and the existing evidence, and reflects on their cultural popularity and the urgent need for research with scientific standards.



2. Definition and basic concepts of human energy

In the ancient tradition of yoga, prana is described as the vital energy that exists in all things. This vital energy is what connects us to the whole universe and is the underlying force behind our physical, mental and spiritual well-being. Prana is a subtle and ever-present energy that drives various aspects of our being, the energy that sustains life and maintains the healthy functioning of all human activities. By having a basic understanding of prana and the five vital forces of yoga, we can learn how to use this energy to help achieve an optimal health and well-being. There are many ways to grow prana. We can increase and balance vital energy through yogic practices such as deep breathing exercises, meditation and connection with nature. This energy has different variations, known as vayus. There are five main vayus in the body: Udana, Prana, Samana, Apana and Vyana (each of which controls a specific area of the body and its functions). By understanding and balancing them, we can cultivate physical vitality, mental clarity and spiritual development.

2.1. Vayu

Udana vayu is a type of vital energy that moves in the region above the heart. Therefore, maintaining a balanced flow of udana is crucial for effective communication and for increasing energy levels.

2.2. Prana Vayu

Prana vayu is a fundamental energy that regulates the circulation of oxygen and vital energy throughout the body, maintaining vitality and general well-being. Although this vayu flows throughout the body, it works mainly in the heart chakra and chest.

2.3. Samana Vayu

Samana is the life energy situated in the solar plexus chakra, just above the navel. This vital energy is responsible for easing digestion and metabolism, and for distributing nutrients throughout the body. Essentially, the body's internal processes depend on the balance of samana vayu.

2.4. Apana Vayu

Apana vayu functions in the pelvic region of the body and is responsible for elimination functions such as urination, bowel movements and menstruation. We can also attribute sweating and yawning to apana energy.

2.5. Vyana Vayu

It is a vital energy that stimulates the distribution systems in the body, including the movement of energy through the nadis. This means that when vyana vayu is disequilibrated or drained, so are the other four vital energies. This circulatory system also controls blood circulation, lymphatic drainage and regular movements such as walking.

On the other hand, the word “chakra”, in Sanskrit, means circle or wheel. This concept refers to the energy centres in our body through which our vital energy flows. Each of the seven chakras is related to an aspect of our being and influences the physical, mental and emotional levels. Therefore, this is why they must be in perfect balance.

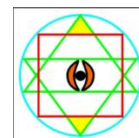
When they are balanced we enjoy a sense of general well-being and feel more in harmony and in tune with everything around us. Each chakra or energy centre is an area of concentration of energies located along our central path or sushumna nadi, located in the spine.

- **Muladhara (the root chakra)**

The root chakra, muladhara, is our centre of energy and survival. It is located at the base of the spine and can be considered to be our root, the one that keeps us physically and emotionally grounded. Muladhara



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provides us with a type of energy that makes us feel more satisfied on a vital and material level; it gives us security and stability. When it is blocked we can feel uprooted, guilty and afraid to deal with everyday situations. Associated with the colour red and the earth element.

- **Svadhithana (sacral chakra)**

The sacral chakra, svadhithana, is located in the abdomen, below the navel. Svadhithana is related to sensuality and emotions. In balance it is linked to a full and guilt-free sexuality. On the other hand, when it is blocked, a feeling of contempt or repression can appear, as well as being out of balance in the form of excess and addictions. It vibrates with the colour orange and its element is water.

- **Manipura (the solar plexus chakra)**

It is located about three fingers above the navel and represents the personal power or empowerment and assertiveness we have as individuals in the world. Having this energy centre in balance helps us to deal with risks and to establish our personal boundaries and needs in relation to others. Its functions are related to the digestive system and transformation. It is associated with the colour yellow and its element is fire.

- **Anahata (the heart chakra)**

Anahata is directly related to feelings of love for others and openness to life. It is therefore located in the centre of the chest. This energy centre acts as a point of connection and balance between the physical and spiritual worlds. Its element is air and is related to the colour green.

- **Vishuddha (throat chakra)**

The throat chakra is associated with communication, transcendence and purification. Having this energy centre in harmony helps us to fulfil our role in society by accomplishing goals and objectives. It is associated with the colour turquoise blue and its element is ether. In addition, it represents the engine of creativity and communication.

- **Ajna (the third eye chakra)**

Ajna refers to the third eye and is located on the forehead, between the eyebrows. This sixth energy centre of our body connects us with the world of thought and intuition, that is, with the energy that allows us to visualise and see without the need to look and understand. Its colour is indigo blue and its element is light. It is therefore closely linked to the pineal gland and to contact with other forms of consciousness.

- **Sahasrara (the crown chakra)**

Sahasrara is the last energy centre of our body. It is located at the top of the head and is related to spirituality. It is the chakra of pure consciousness and its colour is violet although its energy is also white, understood as the highest vibration that covers all existing colours. Therefore, its element is the inner light, the will and the thought that has the power of the mind.

On the other hand, in physics, energy is defined as the ability of a system to do work, i.e. the ability to cause changes in itself or in other bodies. It manifests itself in various forms, such as kinetic, potential, thermal, electrical energy, etc., and is ruled by the theory of conservation, where energy is neither created nor destroyed, only transformed.

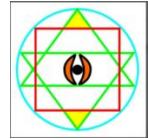
3. Proposed mechanisms of healing action

Energetic balance is key to maintaining optimal physical and emotional well-being. The chakras, which are energy concentration points in the body, play a fundamental role in this process and to add them into our lives we must align them. Ways to achieve this:

- **Conscious meditation:** we can use deep breathing, focusing on each exhalation as an energetic cleansing.
- **Yoga or any form of conscious movement** (such as tai chi or slow dances). Regular exercise also helps to release accumulated energy blockages.
- **Balanced and conscious eating:** we can consume fresh and varied foods, paying attention to color: each chakra is associated with a color, so a colorful diet tends to support balance.



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- **Affirmations and inner language:** use positive affirmations that connect us to safety, love, authenticity and intuition. Emotional self-awareness also helps to detect and release blockages.
- **Energy therapies:** reiki, sound therapy, acupuncture or energy cleansing with crystals can help harmonize the energy flow.
- **Connection with nature and the present:** spontaneously strengthens the energy system.
- **Silence and rest:** are key for the energetic body to regulate itself.

On the other hand, guiding prana is a central practice in many traditions of yoga, tantra and other energetic disciplines of India. Guiding it involves consciously directing that flow to revitalize the body, calm the mind and elevate consciousness. Ways to achieve it:

- **Pranayama (breath control):** the most direct way to guide prana. Examples: nadi shodhana, kapalabhati, bhastrika, ujjayi.
- **Bandhas (energetic locks):** techniques to “seal” and direct energy internally. Examples: mula bandha (pelvic floor); uddiyana bandha (abdomen); jalandhara bandha (throat). They are used together with the breath to raise the prana through sushumna.
- **Visualization:** imagining prana as light or energy moving through the body (e.g., moving up the spine). Used in meditation and tantric kriyas.
- **Asanas (physical postures):** well-sustained yoga postures with conscious breathing move prana throughout the body and remove blockages.
- **Mantras and sound:** especially mantras modify the vibration of the body and guide prana to the higher chakras. Example: the mantra OM activates the flow in sushumna.

4. Energy therapies in integrative medicine: basics and origin

4.1. Reiki

Created in Japan in the late 19th century by the master Mikao Usui. The practice involves the guide of a supposed universal energy, known as "Rei-Ki", through the use of hands. The therapist acts as a vehicle, facilitating the flow of energy to the receiver without requiring direct physical contact. Specific symbols, attunement processes and meditation techniques that focus on conscious intention are used to dissolve energy blockages and encourage self-regulation of the organism.

4.2. Pranic healing

It is a modern therapy with its roots in the Indian Vedic tradition, systematised by the Filipino master Choa Kok Sui. This technique is based on the principle that the energetic body can be cleansed and strengthened through the manipulation of prana, understood as vital energy. Without physical contact, the therapist performs ‘sweeping’ movements in the auric field to eliminate unbalanced energies, followed by energisation with new prana, accompanied by visualisation techniques, conscious breathing and meditation.

4.3. Chakra therapy

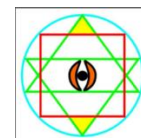
It is based on ancient traditions of Hinduism and Tantra, particularly the texts of the Upanishads and Kundalini yoga. This technique aims to harmonise the seven main energy centres (chakras) through stimulation with mantras, chromotherapy, crystals, essential oils and specific meditations. Its application seeks to restore the integral balance between body, mind and spirit, and is widely used in holistic healing contexts.

4.4. Qi Gong/Chi Kung

Of Chinese origin, it is a millenary practice that combines gentle movements, controlled breathing and meditation in order to cultivate and mobilize the ‘qi’ or vital energy. Based on the principles of traditional Chinese medicine, this discipline seeks to unblock the energy meridians, strengthen the internal organs and



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increase the overall vitality of the individual. Qi gong is used both as a preventive form and in processes of physical and emotional health recovery.

4.5. Energetic Ayurveda

It is part of the traditional Indian system of medicine, which is more than five thousand years old. It considers that each individual possesses a unique energetic constitution (dosha), the imbalance of which can trigger disease. This therapeutic modality employs personalised routines that include specific nutrition, herbal medicine, massage, purification practices, meditation, mantra chanting and work with the chakras and nadis (energy channels), all with the aim of restoring systemic harmony.

4.6. Sound therapy

It has a history in various cultures, including Tibet, India and ancient Egypt. It is based on the theory that sound vibration can modulate the subtle fields of the human body. Through the use of instruments such as singing bowls, gongs, tuning forks, mantras or specific frequencies, this therapy seeks to induce states of deep relaxation, dissolve energetic tensions and restore vibrational balance.

4.7. Crystal therapy

Also called gem therapy, it uses crystals and semi-precious stones as tools for energetic intervention. According to this practice, each crystal releases a specific vibrational frequency that interacts with the chakras and the body's energy field. Common examples include the use of amethyst for mental relaxation or black tourmaline for energetic cleansing. Crystals are placed at strategic points on the body or used during meditation.

4.8. Energetic Aromatherapy

Uses essential oils extracted from aromatic plants to influence the emotional and energetic state of the individual. Each oil is considered to have a particular vibrational frequency that can act on the nervous system, the chakras and the subtle field. Aromas such as lavender, incense or sandalwood are used to induce relaxation, mental clarity or meditative states, through inhalation, topical application or environmental diffusion.

4.9. Therapeutic Massage

It was developed in the 20th century by Dolores Krieger and Dora Kunz as a complementary energetic technique in the Western clinical setting. Inspired by ancient healing practices, this therapy involves the detection and correction of imbalances in the energy field through gentle hand movements at a short distance from the body. It is used in hospital environments to relieve pain, reduce stress and promote post-operative recovery processes.

4.10. Yoga Kundalini

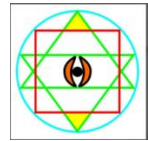
Advanced yoga practice aimed at awakening and ascending the kundalini energy from the base of the spine to the higher centres of consciousness. This discipline combines physical postures (asanas), breathing techniques (pranayama), chanting (mantras), symbolic gestures (mudras) and deep meditation. It is attributed with the ability to induce physical, psychological and spiritual transformations, aimed at the development of consciousness and self-realisation.

5. Clinical applications of energy therapies: a review of their uses and reported effects

Energy therapies, understood as a set of interventions that seek to restore the balance of the bioenergetic field of the human body, have been used in a complementary way in various clinical contexts. These



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practices are based on the idea that alterations in the flow of vital energy can contribute to the development or support of pathological states, and that their regulation can promote the integral health of the individual. The main uses attributed to these therapies, as well as the commonly reported effects, are described below. One of the most frequent fields of application of energy therapies is the treatment of stress, anxiety and mood disorders such as mild depression. Practices such as reiki, pranic healing, chakra therapy, kundalini yoga, aromatherapy and sound therapy have been associated with inducing states of deep relaxation, reducing sympathetic activity of the autonomic nervous system, and improving emotional well-being. Several studies report improvements in sleep quality, emotional self-regulation and perceived levels of anxiety after repeated interventions.

In patients with chronic fatigue syndrome or persistent physical exhaustion, some energetic interventions such as qi gong, reiki, crystal therapy, or energetic ayurveda have been shown to be useful as supportive therapies. Attributed effects include an increase in subjective energy levels, an increased sense of vitality, and reduced feelings of clinically unwarranted fatigue, probably mediated by parasympathetic activation and psychoemotional self-regulation.

For physical pain (acute or chronic), including muscular, osteoarticular or idiopathic pain, techniques such as reiki, therapeutic massage and pranic healing have been used as an addition to conventional medical treatments. Several clinical trials have documented a decrease in perceived pain, possibly linked to the placebo effect, to induced relaxation, or to a neuropsychological modulation of the pain threshold through mindfulness or positive suggestion.

Chronic diseases and autoimmune disorders have also been treated with energy therapies, particularly in their psychosomatic dimension. Although there is no conclusive evidence of direct curative effects, some intervention studies suggest that these therapies may contribute to the improvement of quality of life, reduction of oxidative stress and emotional stabilization of the patient, indirect factors that could influence the overall forecast.

Insomnia and other sleep disorders of psychological origin also represent a frequent indication. Interventions such as aromatherapy, sound therapy, reiki and energetic meditation practices (such as Kundalini Yoga) have shown positive effects on sleep latency and sleep quality, promoting nocturnal rest by inducing low frequency brain waves associated with deep relaxation states.

Related to functional respiratory disorders, such as dyspnea associated with anxiety or hyperventilation, the use of techniques such as pranayama (yogic breathing), qi gong and other energetic respiratory control practices have been documented. These techniques favor ventilatory reeducation, tissue oxygenation and emotional control through the modulation of respiratory rhythm and vagal tone.

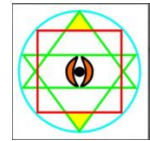
In the treatment of emotional disorders caused from bereavement, trauma or affective dysfunction, the application of therapies such as reiki, crystal therapy, chakra therapy and sound therapy has been observed. Perceived effects include a decrease in emotional distress, greater acceptance of loss, and a subjective sense of emotional balance, although the exact mechanisms behind these changes have not yet been determined. In cases of existential misguidance, creative blocks or a feeling of spiritual emptiness, especially in healthy populations or in processes of personal development, energetic therapies are used as tools for self-reflection and growth. Meditation with mantras, Kundalini Yoga and chakra harmonization are frequent practices in these contexts, where improvements in mental awareness, motivation and perception of vital purpose are reported.

Finally, the contribution of these therapies as support in conventional medical treatments is recognized, especially in oncology patients or in postoperative processes. Reiki, therapeutic touch and aromatherapy have been implemented in hospitals as complementary practices aimed at reducing the side effects of chemotherapy, relieving pain, reducing the level of preoperative anxiety and easing physical recovery.

Overall, the most commonly attributed effects of energy therapies include pain and stress reduction, improved psychological well-being, subjective strengthening of the immune system, and a greater perception of mind-body harmony. Although many of these claims still lack solid empirical validation,



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preliminary results, along with the wide acceptance of these practices among users and integrative health professionals, justify their systematic study.

6. A critical view at the efficacy of energy therapies from a scientific perspective.

- **Reiki**

A meta-analysis of placebo-controlled studies found that Reiki can significantly reduce anxiety, stress and clinical depressed mood in some patients, with moderate to high GRADE ratings for clinically relevant symptoms.

- **Pranic Healing and Chakra Therapy / Crystal Therapy / Energetic Aromatherapy / Sound Therapy**

No rigorous studies with controlled situations or RCTs were found that demonstrate specific clinical effects on mood or emotions; most of the available evidence is anecdotal or with weak methodologies, so its objective efficacy cannot be affirmed.

- **Qi Gong / Tai Chi**

Multiple meta-analyses of randomized trials (≥ 30 studies, $> 4\,500$ participants) show small to moderate reductions in depression ($SMD \approx -0.35$ to -1.14) and anxiety ($SMD \approx -0.3$ to -0.9), especially when practiced 2-4 times per week for 12-16 weeks.

- **Yoga Kundalini / Pranayama**

No separate meta-analyses were found in this set, but studies on meditation and yoga indicate that practices such as pranayama and postures combined can improve mood and sleep in people with mild depression and anxiety, producing effects comparable to structured relaxation interventions.

7. Healing among beliefs: the cultural force behind energy therapies and their awaiting validation

The popularity of therapies such as reiki, pranic healing or yoga has grown exponentially in recent decades. This is due, in part, to a cultural shift towards holistic wellness, a growing distrust of conventional medicine in some areas, and a strong Eastern influence, especially in contexts where the “natural” or “spiritual” is valued. In addition, their accessibility and low cost make them attractive to many people seeking relief from emotional distress.

However, this popularity is not always followed by solid scientific evidence. Many practices - such as crystal therapy or energetic aromatherapy - lack rigorous studies that validate their therapeutic effects beyond placebo or subjective comfort. This does not mean that they do not help on an emotional level, but rather that it cannot yet be scientifically stated how or why they do so.

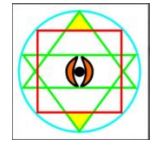
For this reason, it is urgent to promote serious research, with clear and consistent methodology, to distinguish the symbolic or cultural value from the possible real benefits. This is the only possible way to responsibly integrate the best of these practices in health and emotional care contexts.

8. Conclusion

Human energy and energy medicine are an essential but often overlooked aspect of integrative health care. Human energy combines the examination of subtle energy systems that impact physical, emotional and spiritual dimensions of well-being and energy healing as complementary methods of healing in ways not possible with conventional biomedical means. Emerging clinical evidence suggest promising outcomes for pain management, stress reduction and support for chronic diseases, but exciting opportunities arise due to heightened interest in all aspects of human energy. Further systematic research, standardized protocols and interdisciplinary collaborations are needed to validate the efficacy and develop optimal approaches for these



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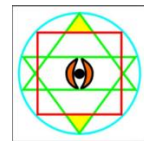
therapies. Integrating energy medicine within a mainstream practice could meaningfully improve overall patient-centered, holistic health outcomes in the future.

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The Science and Spirit of Music Therapy: A Pathway to Human Wellness

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Abstract: Given the heights, widths, depths, and nuances of his comprehensive realization of the Divine in all the innermost, outermost, and in most parts of his being, the Arutperumjothi Ramalinga Adigalar, also known as Vallalar, the Great Millionaire, may be considered the greatest saint and sage of the nineteenth century. The subsection illustrates how the divine elements serve as the inspiration for his poetry, "Arutpa." Music is an equally indigenous aspect of human expression and experience, and it naturally and fluidly aligns with spirituality, an inherently human concept and force that pervade the breadth of human existence. When incorporated, music heightens and enhances spiritual experiences, allowing the client to discover new meaning that goes beyond their existing "being" modes. In a similar vein, spirituality gives music and musicking a potent and poignant significance that sets them apart from other musical experiences.

Keywords: Quality of life; Vallalar; Arutpa; Music; lifestyle enjoyment; God.

1. Introduction

Starting from the mother's womb and continuing throughout life, every moment teaches us different life lessons [1]. The quality of life and attitudes depend on the thoughts, ideas, mind, words, and actions of humans. Such special mental elements, physical elements, and health-related lifestyle enjoyment are special.

*Ullam perungkoil oonudambu aalayam
Thella thelintharkku
Jeevanae sivalingam
Vallal pranarkku vaai gopuravaasal
Kalla pulanainthum
Kaana mani vilakkae
(Saint..Thirumoolar...)*

1.1 The Emotional and Musical Psychological Dance

The emotional influence of music is supported by research and is not merely a matter of perception. Complex reactions are elicited by musical stimuli, activating different brain regions involved in processing memories, emotions, and sound [2]. Our brains release dopamine, a chemical linked to reward and pleasure, when we listen to music, which makes us feel happy and content.

1.2 Comprehending the Brain's Symphony: The following figure shows how music activates the brain, emphasizing the complex interplay between perceptions, emotion, action, and learning in Figure 1 [3]. We can better comprehend the neurological circuits that music activates thanks to this visual portrayal, which also provides insight into why music affects us emotionally.

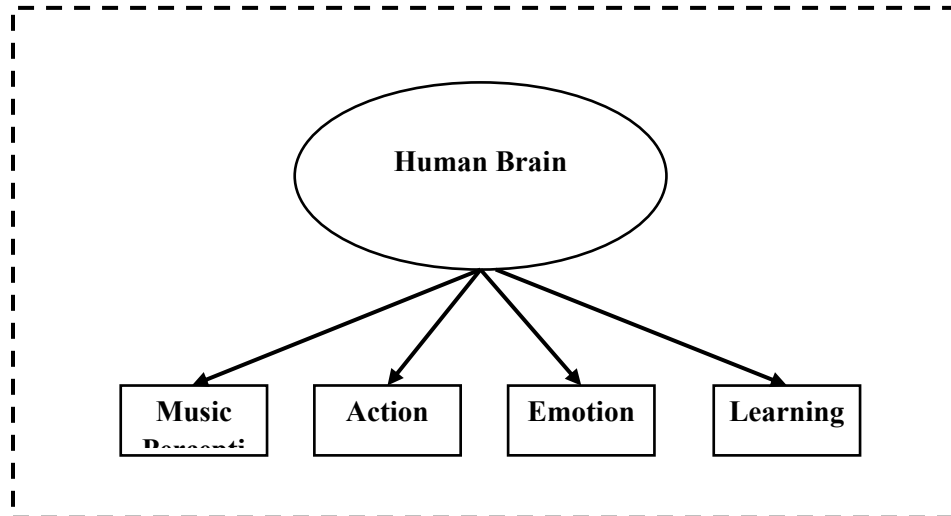


Figure 1: The brain and music

The graphic illustrates how hearing music is an engaged, anticipatory process that interacts with our emotions [4], behaviors, and cognitive capacities in addition to auditory processing. These interrelated features highlight how effectively music shapes our emotional and mental experiences.

2. Related Works

According to research, listening to depressing music after heartbreak can help people process their emotions and find solace by acting as a kind of emotional regulation [5]. Sad love songs frequently give voice to our inner turmoil by expressing the feelings we are feeling. They give us a place to think, which enables us to work through our emotions and start the healing process.

The usage of binaural beats is a well-known and cutting-edge illustration of the therapeutic benefits of music [6]. By playing two slightly different frequencies into each ear, this audio technique produces a perceived third tone, which is the mathematical difference between the two. Depending on the binaural beat's frequency, this can aid in promoting states of focus, relaxation, or even sleep.

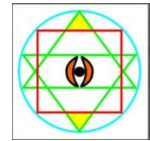
Binaural beats are a common type of sound treatment used by people to reduce stress, enhance focus, and encourage better sleep [7]. Numerous researches support the usefulness of binaural beats, which makes them a commonly used and approved instrument in the field of music therapy.

Given the vast differences in lived experience, organization, processing, and comprehension of the spiritual realm [8], spirituality is a challenging subject to study. Spirituality can be everywhere or nowhere, evident in interpersonal relationships or an extraneous component of human intersubjectivity, separated from religiosity or no different from the teachings of an organized religion, depending on the viewpoint of the individual. Similar questions come up when thinking about the function of spirituality in music therapy.

3. Methods and Materials

3.1 The Real Deathlessness Life: "Arutperum Jothi"

The all-powerful God is eternal in two ways. The inner part of him is the source and result of this infinite cosmos. While both of these features are everlasting, the inner one is transparent and unchanging, while the outward one is apparent and constantly changing. The Almighty power is always manifesting itself from the innermost to appear, vanish, and resurface throughout the universe. Despite having all of his senses, reasoning abilities, mental resources, and mechanical help, a man cannot discover the innermost parts of



himself or the outermost parts of the cosmos [9]. Every philosophy and science is making a fruitless attempt to delve into either extreme.

According to Thirumula Siddha's wisdom, human birth is a divine gift that requires billions of merits to obtain. The temple is the living being's mind. The temple where God resides is the body known as the idol of Lord Shiva. Wisdom is the possession of clear understanding. One can know God, the leader, and oneself with such wise eyes. Thus, gaining philosophical answers and attaining a wonderful life without death are aided by the blessings and divine experiences of the wise.

The use of music and music therapy in end-of-life care settings is growing in popularity. Music therapists are allied health professionals who, frequently in conjunction with the interdisciplinary team, offer music therapy experiences to those nearing the end of their lives. In therapeutic partnerships, music therapists (MTAs) intentionally employ music to promote growth, health, and wellbeing [10]. In order to meet human needs in the areas of cognition, communication, emotion, music, physicality, social interaction, and spirituality, music therapists employ music in a safe and moral manner. End-of-life care offers a variety of musical activities, including music therapy, entertainment, and recreational music. Every experience is unique and valuable. Four components are required for an experience to qualify as music therapy: a therapeutic relationship, music, a client with a need, and a music therapist. Refer to Figure 1.

According to the sages, the only way to achieve health in life is to consider the body and the senses—including the mind—as holy and pure. To develop mental power, one must practice discipline, penance, devotion, and meditation. Work and food are necessary to build physical strength. Water purifies the air outside [11], while honesty purifies the air inside. This is demonstrated by Thiruvalluvar's statements.

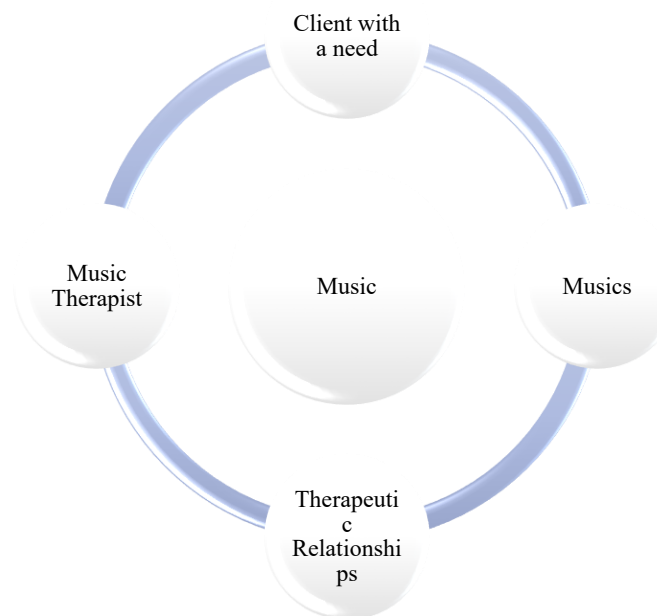
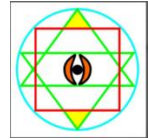


Figure 2: The experience of music therapy's components

The "mind," which is supposed to be the source of one's thoughts, feelings, and knowledge, is the expression or collection of the qualities of thought, motivation, optimism, and fantasy. According to twentieth-century psychiatrist Mr. Richmond Freud [1, there are three different kinds of minds. The inner mind, middle mind, and outward mind are the three categories into which they are divided. Generally speaking, a person's mind is made up of their psychological experiences.



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The term "body" refers to the physical structure of the body. It usually relates to the body's shape and outward look. Three varieties of bodies have been identified by our Siddha Purushas. In other words, the natural body is referred to as the physical body, the mental body as the super-mental body, and the lightening body as the super-mental body. The Pranava body, the gnana body, the lightening body, and the pure body, the suddha body, are more classifications for the bodies. The pure body is the one that is one with God. The pure body is the manifestation of happiness. Its distinctive qualities are emphasized. The nature of the all-powerful force that brings the dead back to life is revealed, and it is oblivious to the shadow. The light body is the Pranava body. It will become possible to know the universes. There will be the ability to create the destroyed and the dead. The body of knowledge is a graceful, everlasting body of light. In all creatures, it comes and goes. It is the expression of the eternal great life, which is capable of carrying out the five divine tasks of creation, preservation, destruction, sin eradication, and light spreading.

*Setthaar ezhukindra thirunaal adutthathu
Sivaneri vondrae engum thalai edutthathu
Ithaar animuthal vaanum udutthathu iravaa
varanthaan enakku kodutthathu
(Saint arutprakasa vallalar)*

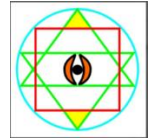
One who follows the path of love and compassion always has tremendous purity and a healthy life as well, according to the holy words of Arutprakasa Vallalar. Even after they have finished their human existence, the auspicious and holiness always continue and bring deathless life along with grace. Everywhere, the magnificent deity has assumed the lead. The greatest saint [13, 14], Thiruvartu Prakasa Vallalar, was a 19th-century goddess with a lightening body. With his amazing divine might, he kindly bestows the compassionate principle known as Jeevakarunya Discipline, alleviates the world's suffering, vanquishes the dark life of ignorance, and offers the Grace Life, a path of wisdom.

Thiruvartu Prakasa Vallalar, The enlightened Siddha is the one who has granted the life of kindness and compassion to transcend the philosophies of mind, body, and soul and acquire the divine bodies by his astonishing divine power. Six Thirumurais and 6000 songs make up the knowledge songs known as Thiruvartu, which he disclosed with his holy mouth. We also have vast treasures of life and grace from our forefathers, Siddhas, yogis, and saints, including renowned sages. That is regarded as our natal gift. Sangam literatures, Purana Ithikas, Vaishnava Prabandhams, Siddha Gnankalanjayams, the twelve Saiva Thirumurais, historical ethics and episodes, etc., have all primarily been presented as songs known as divine poems, or Paakkal. The blessings of human birth are lauded in such wisdom songs. By offering matchless states of grace—education, devotion, bravery, discipline, medicine, virtue, justice, health, penance, and divine status in innumerable evolutions—it elevates life. The only people who are honored as earthly beings are those who are aware of and experience such states of grace via the grace of the Lord and the Guru, who is a wise teacher.

Music the gift of god is an art. That is, music is the vibrations of language combined with pleasant sounds or pronunciations. Music is a form of sound. Making music through music is known in terms of the expression of sweetness, the expression of emotion, and cultural origin. However, music occupies an indispensable position in human life. It is also essential in intellectual events including education, medicine, meditation, devotion, peace, courage, happiness, and sorrow. Music is a part of every activity that the eye of the world sees. It is reflected in the joys and sorrows of human life. It appears as an expression of feelings. Such music is restored in the form of voice and instruments. Our ancestors achieved and enjoyed countless divine powers in the form of Pannisai and traditional musical methods. They were later presented as traditional music and Western music. From birth to death, from joy to sorrow, music is an inseparable part of life. They are presented as tones in the vibrations of sounds. The traditional music of our country, such as Tamil music, Carnatic music, Hindustani music, etc., has always been excellent.



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While playing, listening, and feeling such music, every living being and soul attains infinite feelings and enjoys the sublime manifestations. It is a fact that it provides limitless joy and wonders both internally and externally and enhances health. According to the great research of today's medical world, music has attained incomparable glory and status. Music is a divine gift with divine power. The Tamil collections including Sangha literatures such as Akananuru, Natrinai, Patuppattu, Kurunthokai Purananuru, Aimperum Kappiyangal, Aathichuodi, Konrai Vendan, Thirukkural, Thirumanthiram, Thiruppugazh, Thevaram, Thirukalambagam, Siddhar Gnana Padalgal, Thiruvirutpa, Vedas, Sastras, and other divine books, Siddhantam, Vedantham, Vedantham, Nadhantam, Kalantham and Yogantam, have been given in the form of songs by our wise sages. It is a penance that we have attained such divine blessings in this birth. Furthermore, we should pay homage to the Nath Siddhas, music experts, and Sangeethas who have composed and presented songs in the form of music. Worshipping the Blessed Ones is a wonderful event. Such songs with the power of grace unite hearts, feelings, and worlds in the form of music. They provide boundless peace, joy, devotion, ecstasy, divinity, sweetness, speed, wisdom, courage, patience, and various kinds of miracles, constantly connecting every human being with life and providing divine power.

4. Implementation and Experimental Results

4.1 Ministry and Music Therapy

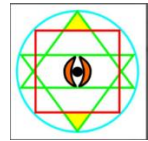
There are many different ways to understand ministry, and there is disagreement over its definition, scope, and methodology. It may seem odd or perhaps risky to even advocate ministering here, under the aegis of a clinical profession. Applying this idea to our job might be compared to navigating the waters of chaplaincy, another therapeutic specialty. However, many in the healthcare industry, particularly doctors who have been educated to base their practice on science and impartiality, advocate for the role of ministry. Its definition hence necessitates a careful and impartial investigation.

4.2 Counseling as Ministry, Counseling as Minister

Some definitions of ministry include "the service, functions, or profession" of a "religious leader as a group" or a "minister of religion." This makes the minister the gatekeeper that allows laypeople to participate in religious services, rites, and practices. In this setting, ministers are frequently given respect, which comes from long-standing hierarchies based on cultural and religious traditions as well as regard for the training and experience these professionals have gained. Ministers are further distinguished as authorities in various cultures by taking on a directive role while laypeople are tasked with compliance. Although it is acknowledged that certain modern music therapy approaches do employ this hierarchy, a person-centered humanistic approach does not reflect such a framework.

Here, a more expansive definition of ministry is being used, highlighting connections to concepts like "service, ease, alleviation of pain, healing, and encouragement when healing is not possible." Service is synonymous with one-way assistance, which is a fundamental definitional element of our field. The ultimate goal of our practice is to promote health via comfort, pain treatment, healing, and support. Many other overlapping notions, such as guiding or accompanying, promoting covenant building, and connecting, are also accepted, either formally or informally, in the practice of ministry and therapy.

However, the concept of ministry also carries implications that music therapists generally do not always accept. The relationship between ministry and spirituality, which has frequently been disregarded as a component of music therapists' practice, is inherent even beyond the hierarchical and directive relationships already covered. Whether this is a deliberate projection or not, we must admit that our clients frequently see our job as ministry. Taking ministry into consideration also highlights the obvious truth that, as spiritual creatures, we infuse our work with a spiritual component. Even though the extent may differ, if we want to operate morally and productively, we must be conscious of this possibility.



4.3 Getting in Touch with the Sacred

Bringing people into contact with the sacred is one of the most unique functions of ministry. People who want to develop spiritually or who feel that their relationship with their higher power is broken frequently look for pastors because they believe that they may help them connect with the divine. A title that has theological and historical overtones of a direct connection to the divine does not belong to music therapists. Nevertheless, a lot of music therapy patients feel as though they have been "ministered to" during the procedure

5. Conclusion

The three main components of the music therapy process—the client, the music, and the music therapist—are shared by music and spirituality as experience, music and prayer, and therapist and ministry. A potentially essential element of the client's therapeutic experience is revealed when music and spirituality are aligned as experiential meaning-making. Similar to this, comprehending how prayer is amplified via music provides insight into the significant function that music plays in the transforming therapeutic setting. Lastly, the capacity of music to effect significant spiritual transformation exemplifies a potentially crucial aspect of the music therapist's work. They also claim that music therapy is a relational and artistic healing process. Music is a wonderful medicine. It is also a good medicine. The medicine of healing, the sound of music, is such a sound that is understood by the senses inside and outside the human being, and becomes language, music, sound, rhythm, movement, and all movements. Through music, the mind and body gain strength, stand by in solitude, provide limitless experiences in every stage of life, and are an indispensable companion in joys and sorrows. It is formed in the heart and continues until the end. It appears as a supreme expression in birth and death. Many times, the agitation and excitement of the mind are expressions and elements of peace. However, music is a powerful and wonderful blessing filled with grace. In this birth, knowing and realizing, traveling on the path of wisdom called the good path and extending the names of birth, the body and life, forever. The main duty is to achieve the divine power of God's grace with the means of love, discipline, kindness, and wisdom, and to become a great person in this birth. Let us, the reason for the mind, not invest it in the illusion of sensual life, but travel every moment with the ideal principles of morality, dharma, surrender, and let us, the living beings, live every moment of our lives with excellence, Let us integrate music with the mind so that our bodies and minds may be pure and healthy. Let us attain the great grace and power that the earth and the heavens admire, and let us attain a great life without death and enjoy it with the ideal principles of love, compassion, and mercy. Let us think well and appreciate goodness. Only good things happen, good things increase.

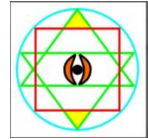
*Let we live a great life
Let we live healthy
Let we pray for the happiness*

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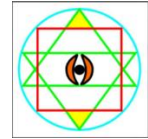
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Biomechanical Analysis of Precision in Pose: Measuring Trikonasana Angles in Adolescents using Goniometry and Trigonometric Modelling

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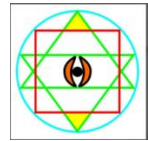
Abstract: This study investigates the application of the cosine law to calculate the angles of triangles formed by the body segments of adolescents in the Trikonasana pose, a foundational static posture in yoga. The research involved seven adolescents aged between 7 and 15 years, each of whom performed the Trikonasana pose while their body positions were analyzed. Using the cosine law, the angles of the triangles created by the legs, arms, and torso during the pose were mathematically calculated. These calculated angles were then compared to measurements taken with a goniometer, a tool designed to measure angles in physical therapy and biomechanics. The study aimed to assess the accuracy of the cosine law in this practical application and to understand the relationship between geometric calculations and physical postures in a young population. The findings highlight the potential discrepancies between theoretical calculations and empirical measurements, providing insights into the biomechanics of yoga asanas and informing future practices in physical education and therapeutic settings. This study investigates the accuracy and reliability of joint angle measurements in *Trikonasana* (Triangle Pose) using two distinct methods: the **Cosine Law**, a mathematical approach based on triangle geometry, and the **Goniometer**, a clinical tool commonly used for joint assessment. Seven adolescent samples were analysed, with angles measured at the shoulder, hip, and knee. The results revealed a high degree of correlation between both methods, with deviations typically within 1–2 degrees. This dual-method approach enhances precision in posture analysis and offers valuable insights for yoga instruction, therapeutic applications, and biomechanical research.

1. Introduction

Yoga is increasingly recognized not only as a spiritual practice but also as a therapeutic tool for physical and mental well-being. *Trikonasana*, or Triangle Pose, is a foundational standing posture that emphasizes lateral flexion, balance, and alignment. Accurate measurement of joint angles during this pose is essential for:

- Ensuring proper alignment
- Preventing injury
- Enhancing therapeutic outcomes, particularly for individuals with respiratory conditions such as asthma and other disease

Traditional assessment methods rely on visual observation or goniometric tools. This study introduces **Cosine Law** as a complementary method to evaluate joint angles mathematically, offering a new dimension to posture analysis. This study presents a novel comparative approach to measuring joint angles in *Trikonasana* by integrating **Cosine Law calculations** with **Goniometric techniques**. By analysing the alignment and angular relationships of key joints—such as the shoulder, hip, and knee—this research offers a more nuanced understanding of posture execution, especially in therapeutic contexts like asthma management. The dual-method evaluation not only enhances the **accuracy and reliability** of joint angle measurements but also bridges the gap between **mathematical modelling** and **clinical practice**. Cosine Law provides a geometric framework for understanding limb positioning, while goniometry offers practical, real-time assessments. Together, they form a robust toolkit for yoga instructors, physiotherapists,



and researchers aiming to optimize posture alignment and safety.

2. Literature Review

Several studies have explored the relationship between body mechanics and yoga postures:

Sudhan et al.(2021) The placement of the **center of gravity (CoG)**—which reflects the distribution of full body weight—is a critical factor in maintaining **postural stability** during yoga asanas. In this study, we propose a **simulation-based modeling approach** to analyze the **biomechanical effects** on specific **joints and muscle groups** during the execution of **Utkatasana (Chair Pose)**. By integrating kinematic and kinetic parameters, the model aims to quantify the mechanical load and muscular activation patterns required to sustain the posture, offering insights into balance control, joint stress distribution, and muscular coordination. **Cadoret et al. (2018)** examined the role of motor proficiency and cognitive ability in early academic achievement, highlighting the importance of precise movement analysis. **Jain & Singhai (2024)** reviewed academic stress and its psychological impact, emphasizing the role of physical activity, including yoga, in stress reduction. **Yli-Piipari et al. (2024)** demonstrated that physical activity improves stress load, recovery, and academic performance, reinforcing the value of biomechanical precision in therapeutic movement. However, few studies have compared mathematical modeling techniques like Cosine Law with traditional tools such as goniometers in yoga posture analysis. This research aims to fill that gap [1-8].

3. Methodology

This study was conducted to analyze the biomechanical impact of **Trikonasana (Triangle Pose)** on lower limb joints in young adolescents. A total of **seven healthy participants**, aged between **8 and 15 years**, were selected for the study. All participants were physically active and capable of performing yoga postures safely under supervision. Informed consent was obtained from guardians prior to participation. Each participant performed **Trikonasana** in a **controlled laboratory environment** equipped with a **motion capture system**. Reflective markers were placed on anatomical landmarks to track joint movement and body alignment in real time. The motion system recorded data across both the **sagittal** and **frontal planes**, allowing for a comprehensive analysis of ankle joint behaviour.

Sample Selection

Seven samples were selected, each representing a unique execution of Trikonasana. Measurements were taken for three joints:

A: Shoulder angle

B: Hip angle

C: Knee angle

Measurement Techniques

1. Cosine Law:

- Applied using the formula:

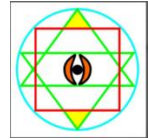
Cosine Law Triangle Angle Calculation Sample I

By the Law of Cosines:

$$a^2 = b^2 + c^2 - 2bc \cdot \cos(A)$$

$$b^2 = a^2 + c^2 - 2ac \cdot \cos(B)$$

$$c^2 = a^2 + b^2 - 2ab \cdot \cos(C)$$



Triangle Representation

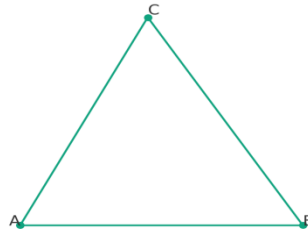


Figure 1: Triangle with sides $a = 33$ cm, $b = 31.5$ cm, $c = 31.5$ cm

Given:

Side $a = 33$ cm; $b = 31.5$ cm ; $c = 31.5$ cm

Substituting in the cosine law:

Angle A Calculation Using formula: $a^2 = b^2 + c^2 - 2bc \cdot \cos(A)$

$$33^2 = 31.5^2 + 31.5^2 - 2(31.5)(31.5) \cdot \cos(A)$$

$$A = 63.17^\circ$$

Angle B Calculation Using formula: $b^2 = a^2 + c^2 - 2ac \cdot \cos(B)$

$$31.5^2 = 33^2 + 31.5^2 - 2(33)(31.5) \cdot \cos(B)$$

$$B = 58.42^\circ$$

Angle C Calculation Using formula: $c^2 = a^2 + b^2 - 2ab \cdot \cos(C)$

$$31.5^2 = 33^2 + 31.5^2 - 2(33)(31.5) \cdot \cos(C)$$

$$C = 58.42^\circ$$

Using Cosine Law to Find Angles of a Triangle Sample II

Given:

Side $a = 36$ cm; $b = 36$ cm; $c = 30$ units

We are using the Cosine Rule to find the angles A, B, and C.

Triangle Representation

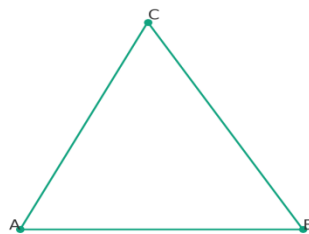
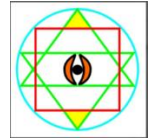


Figure 2: Triangle with sides $a = 36$ cm, $b = 36$ cm, $c = 30$ cm

Step 1: Calculate Angle A using Cosine Law

$$\cos A = \frac{b^2 + c^2 - a^2}{2bc} = \frac{36^2 + 30^2 - 36^2}{2 \cdot 36 \cdot 30} = \frac{1296 + 900 - 1296}{2160} = \frac{900}{2160}$$

$$A = \cos^{-1} \left(\frac{900}{2160} \right) = \cos^{-1}(0.4167) \approx \boxed{65.37^\circ}$$



Step 2: Calculate Angle B using Cosine Law

$$\cos B = \frac{a^2 + c^2 - b^2}{2ac} = \frac{36^2 + 30^2 - 36^2}{2 \cdot 36 \cdot 30} = \frac{900}{2160}$$

$$B = \cos^{-1}(0.4167) \approx 65.37^\circ$$

Step 3: Calculate Angle C using Cosine Law

$$\cos C = \frac{a^2 + b^2 - c^2}{2ab} = \frac{36^2 + 36^2 - 30^2}{2 \cdot 36 \cdot 36} = \frac{1296 + 1296 - 900}{2592} = \frac{1692}{2592}$$

$$C = \cos^{-1}(0.6528) \approx 49.24^\circ$$

- Where a , b , and c are limb segment lengths.
2. **Goniometer:**



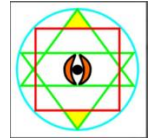
ANGLE MEASUREMENT USING GONIOMETER

Used to measure angles directly during posture execution. Used to measure angles directly at the shoulder (A), hip (B), and knee (C) during posture execution. Measurements were taken while participants held the final posture, ensuring accuracy in static alignment.

4. Results

Data Collection Parameters

Joint Angles: Measurements were taken at the hip, knee, and ankle joints. The data revealed that Trikonasana consistently produced greater hip and knee flexion, indicating significant engagement of the lower limb musculature. **Range of Motion (ROM):** The posture demonstrated the widest ROM in the frontal plane, particularly during lateral trunk flexion and leg extension. All measurements were averaged across the sample group, and Comparative analysis were applied to assess consistency, symmetry, and variability in posture execution. This methodology provides a foundational framework for understanding the **kinematic and kinetic demands** of Trikonasana in adolescent yoga practice and supports its application in therapeutic and developmental movement programs.



Tabulated Comparison of Joint Angles

Sample	Cosine Law (A°/B°/C°)	Goniometer (A°/B°/C°)
1	63.17 / 58.42 / 58.42	64 / 58 / 58
2	62.74 / 65.92 / 51.33	63 / 64 / 52
3	70.72 / 67.73 / 41.54	71 / 68 / 42
4	72.19 / 75.86 / 31.94	72 / 76 / 32.5
5	65.12 / 67.31 / 47.57	64.5 / 67 / 48
6	65.37 / 65.37 / 49.24	64.8 / 65 / 50
7	63.24 / 79.16 / 37.59	62.85 / 80 / 38

Shoulder angles (A°) showed the highest consistency across both methods, with deviations typically under 1°. **Hip angles (B°)** were slightly more variable, but remained within acceptable biomechanical margins. **Knee angles (C°)** exhibited the greatest fluctuation, likely due to subtle shifts in lower limb alignment during static posture maintenance. These findings support the use of **Cosine Law** as a dependable computational method for joint angle analysis, while also validating the practicality of **goniometric measurements** in real-time posture assessment.

Explanation of Joint Angle Comparison Table

Sample	Shoulder Angle (A°)		Hip Angle (B°)		Knee Angle (C°)	
	Cosine Law	Goniometer	Cosine Law	Goniometer	Cosine Law	Goniometer
1	63	64	58	58	58	58
2	62	63	66	64	51	52
3	71	71	68	68	42	42
4	72	72	76	76	32	32.5
5	65	64	67	67	48	48
6	65	65	65	65	49	50
7	63	63	79	80	38	38

This table presents a side-by-side comparison of joint angle measurements taken during the execution of **Trikonasana** across seven adolescent samples. The angles were measured at three key joints—**shoulder (A°)**, **hip (B°)**, and **knee (C°)**—using two methods: **Cosine Law**: A mathematical approach based on limb segment lengths and triangle geometry. **Goniometer**: A manual tool used to measure joint angles directly during posture execution. The **Cosine Law** method provides consistent and reliable angle estimates when body segment lengths are accurately measured. The **Goniometer** is practical and effective for real-time assessments but may be influenced by manual handling and participant movement. The **average deviation** between the two methods across all joints is **minimal**, reinforcing the validity of using both techniques in biomechanical analysis of yoga postures.

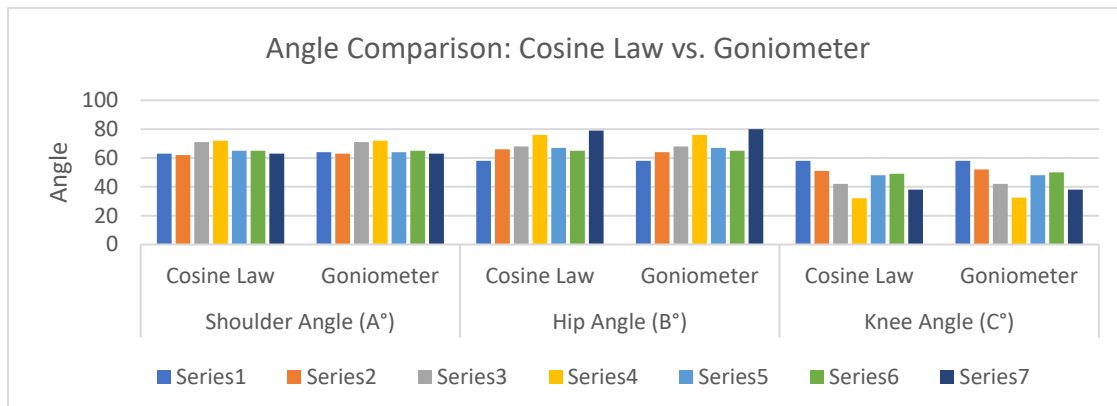


Figure 3. Angle Comparison Between Cosine Law and Goniometer

This bar chart presents a comparative analysis of joint angle measurements taken during Trikonasana using two methods—Cosine Law and Goniometer—across three joint types: Shoulder Angle (A°), Hip Angle (B°), and Knee Angle (C°). Each joint type is represented by two sets of bars, one for Cosine Law and one for Goniometer readings, with seven series corresponding to different participants (Sample 1 to Sample 7), each distinguished by color. The Shoulder Angles show near-identical readings between the two methods, indicating high consistency and minimal deviation. Hip Angles exhibit similar trends with slight differences in Samples 2 and 7, suggesting moderate variability likely due to posture depth or limb alignment. Knee Angles display the greatest variation, particularly in Samples 2, 4, and 6, implying that knee measurements are more sensitive to posture dynamics and harder to measure consistently. Overall, the Cosine Law method provides stable and mathematically consistent measurements when limb lengths are accurately recorded, while the Goniometer offers practical, real-time assessment but may be affected by manual handling and participant movement. The chart confirms that both methods are closely aligned, with deviations typically within $\pm 1-2^\circ$, supporting their reliability in biomechanical analysis of yoga postures.

5. Conclusion

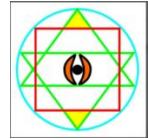
This study demonstrates that **Cosine Law** and **Goniometric techniques** are both reliable for measuring joint angles in *Trikonasana*. The integration of mathematical modelling with traditional tools enhances the precision of posture analysis and supports therapeutic applications in yoga and rehabilitation. Further research of this study includes the following: Assigning the ratio of the sides that relate to sine and cosine. Checking the congruency of the multiple triangles formed in the posture. Checking similarities of the triangles based on trigonometric identities.

6. Recommendation

To enhance the scope and impact of joint angle analysis in yoga biomechanics, future work should extend the current model to a wider range of yoga postures, including dynamic and balance-oriented asanas, and incorporate participants from diverse age groups and physical conditions to capture age-related and therapeutic variations. Integration with advanced technologies such as 3D motion capture and AI-based posture correction tools can enable real-time feedback and safer alignment guidance. Clinical applications in physiotherapy and respiratory therapy should be explored, particularly for monitoring joint mobility and improving breathing mechanics. Additionally, developing educational resources for yoga instructors based on biomechanical insights, establishing normative joint angle data across demographics, and incorporating



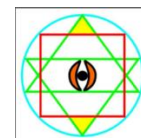
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wearable sensors for continuous posture tracking can significantly broaden the utility of this model. Interdisciplinary collaboration among yoga experts, biomechanists, clinicians, and data scientists is essential to drive innovation and ensure holistic development of yoga-based therapeutic and training systems.

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**Effect of Yoga Practices on Selected Respiratory Parameters among
Asthmatic Adolescents Boys**

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Abstract: The purpose of the random group experimental study was to find out the effect of Yoga practice on selected Respiratory parameters such as Forced Expiratory volume (in first second) and Vital Capacity among Asthmatic adolescents boys. 30 Asthmatic adolescents boys were selected from Chennai, between the age group of 25 and 35 years and they were divided into two groups I, and II with 15 subjects each. It was hypothesized that there would be significant differences among the Asthmatic adolescents boys Forced Expiratory volume (in first second) and Vital Capacity. Preliminary test was taken for two Groups on Forced Expiratory volume (in first second) and Vital Capacity before the start of the training program. Group I subject were given Yogic practices for 60 minutes, 3 days a week for a total period of Six weeks. Group II (Control Group) were in active rest. After the experimental period, the two groups were retested again on the same selected dependent variable. Analysis of co-variance (ANCOVA) was used to find out the significant differences between the experimental group and the control group. The test of significance was fixed at 0.05 level of confidence. The results of the study proved that the Experimental Group showed significant differences on Forced Expiratory volume (in first second) and Vital Capacity than the Control Group due to Yoga therapy among Asthmatic adolescents boys. The hypothesis was accepted at 0.05 level of confidence. Hence it is concluded that Yoga therapy are beneficial to the Asthmatic adolescents boys to maintain Forced Expiratory volume (in first second) and Vital Capacity.

Key Words: Yogic practices, Forced Expiratory volume (in first second), Vital Capacity.

1. Introduction:

Asthma is a very common respiratory complaint, which involves a severe narrowing of the bronchial tubes (bronchi). These tubes lead from the windpipe called the trachea into the lungs and they carry the oxygen when breathe in to all parts of the lungs and provide a path for the carbon dioxide to escape up the trachea when breathe out. This narrowing of the bronchi causes difficulty in breathing, specifically when breathing out. Asthma is a major non communicable disease (NCD), affecting adults. Asthma affected an estimated 262 million people in 2019 and caused 461000 deaths Asthma comes from the Greek word for “painting”. Dr. Konstantin Buteyko, a Russian scientist claims that asthma is caused by over-breathing or hyperventilation. This malady to be more a disturbed breathing pattern than a disease. Recommends a course of exercise that eliminates the need for drug treatment and subsequently cures asthma. Yoga can help increase breath and body awareness, slow respiratory rate, and promote calm and relieve stress. Yoga is beneficial asthmatic adult men.

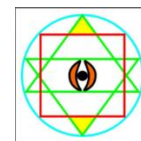
Signs and Symptoms of Asthma

Asthma is a condition where the air passages (the airways that carry air in and out) of the lungs, become inflamed. When these air passages get inflamed, they become red and swollen and start to swell. Sticky mucus or phlegm is produced. All these factors narrow the airways, making it difficult to breathe. This results in coughing, wheezing, shortness of breath and a tight feeling in the chest. Asthmatic attacks can be triggered by allergies, exercise, cold air, pollution and stress related disorders.

- Shortness of breath.
- Chest tightness or pain.



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- Wheezing when exhaling, which is a common sign of asthma in children.
- Trouble sleeping caused by shortness of breath, coughing or wheezing.

2. Objective of the Study:

The objective of the study was to find out whether there would be any significant difference in selected physiological variables among asthmatic adolescents boys due to yoga practices.

Statement Of The Problem

The purpose of the study was to find out the effect of yogic practices on respiratory parameters among asthmatic adolescents boys.

Hypothesis

It was hypothesized that there would be significant differences on Forced expiratory volume and vital capacity variables among Asthmatic adolescents boys due to yogic practices than the control group.

Delimitations

- The study was delimited to asthmatic adolescents boys from 13 to 19 years only.
- The study was delimited to the adolescents boys residing in Chennai city only.
- The study was delimited to the independent variable yogic practices only
- The dependent variables were restricted to Forced expiratory volume and vital capacity only.

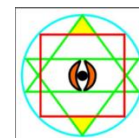
Limitations

- The factors like life style, body structure, and social activities were not taken in to consideration for this study.
- The factors like family heredity and motivational factors were not taken into consideration for this study.
- Certain factors like environmental and climatic conditions, economical background and also day to day work were not taken into consideration.

3. Review of Relatted Literature:

Joshi et al. (1992) done a research on effect of short term 'pranayama' practice on breathing rate and ventilatory functions of lung. The purpose of this study was to conduct Thirty three normal male and forty two normal female subjects, of average age of 18.5 years, underwent six weeks course in 'Pranayam' and their ventilatory lung functions were studied before and after this practice. They had improved ventilatory functions in the form of lowered respiratory rate (RR), and increases in the forced vital capacity (FVC), forced expiratory volume at the end of 1st second (FEV1%), maximum voluntary ventilation (MVV), peak expiratory flow rate (PEFR-lit/sec), and prolongation of breath holding time.

Bhargava et al. (1988) conduct a study on autonomic responses to breath holding and its variations following pranayama. Autonomic responses to breath holding were studied in twenty healthy young men. Breath was held at different phases of respiration and parameters recorded were Breath holding time, heart rate systolic and diastolic blood pressure and galvanic skin resistance (GSR). After taking initial recordings all the subjects practised Nadi-Shodhana Pranayama for a period of 4 weeks. At the end of 4 weeks same parameters were again recorded and the results compared. Baseline heart rate and blood pressure (systolic and diastolic) showed a tendency to decrease and both these autonomic parameters were significantly decreased at breaking point after pranayamic breathing. Although the GSR was recorded in all subjects the



observations made were not conclusive. Thus pranayama breathing exercises appear to alter autonomic responses to breath holding probably by increasing vagal tone and decreasing sympathetic discharges.

4. Methodology:

To achieve the purpose of the study random group experimental study, 60 adolescents boys from the Chennai city were selected between the age from 15 to 19 years through random group sampling method and reduced to 30 subjects again through random selection and divided into two groups. Group one was given yogic practices and Group two taken as control group. The dependent variables are Forced expiratory volume and vital capacity. Random group experimental design was used. The practice of yoga techniques like Asana, Pranayama, Meditation, Mudra, etc. helps to overcome any imbalances and creates harmony in the physical, mental, psychological and spiritual aspects of human personality. The experimental groups underwent training period of Six days per week for the maximum of an hour in the morning for eight weeks. The Analysis of co-variance (ANCOVA) is to be used as a statistical technique to find out the significant differences between the groups. The level of significance is 0.05%. Total duration including training and preparation of project was three months.

5. Results and Discussions:

- The data pertaining to the variable collected from the two groups before and after the training period were statistically analyzed by using Analysis of Co-variance (ANCOVA) to determine the significant difference and the hypothesis was tested at 0.05 level of confidence.
- These are shown in the Tables below.

Table: 1 Computation of Analysis of Covariance of Forced Expiratory Volume in First Second

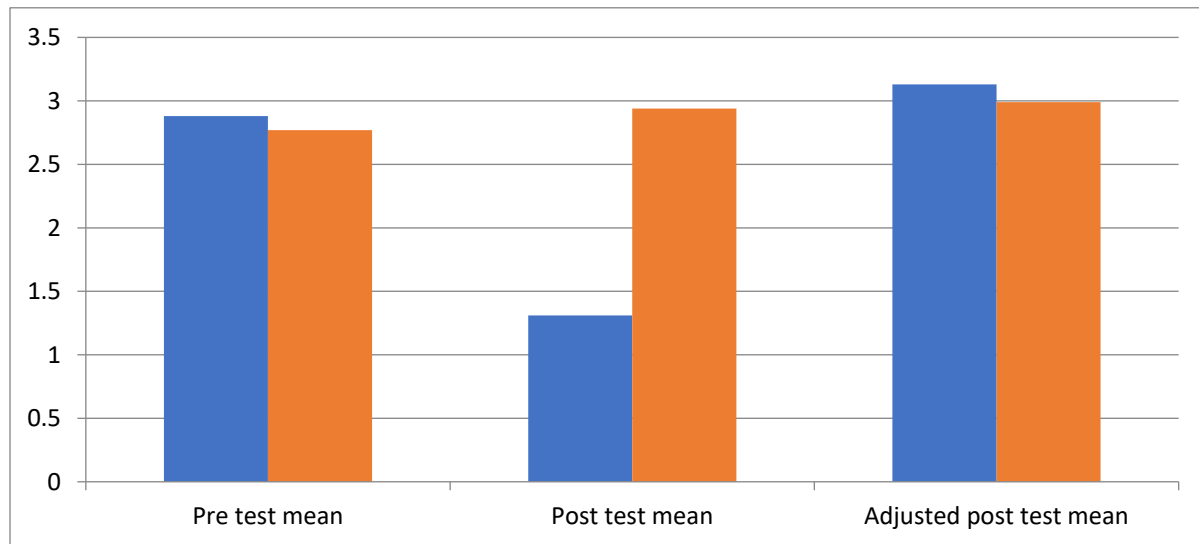
Test	Yoga Practices Group	Control Group	SV	SS	Df	MS	F
Pre test mean	2.88	2.77	B	0.11	1	0.11	0.69
			W	6.14	28	0.16	
Post Test mean	2.94	1.31	B	0.54	1	0.54	4.36*
			W	6.15	28	0.16	
Adjusted Post Test mean	3.13	2.99	B	0.19	1	0.19	6.02*
			W	1.42	27	0.03	

Table F-ration at 0.05 level of confidence for 1 and 28 (df)=4.20, 1 and 27 (df)=4.21.

*significant

As shown in Table I obtained F value on the scores of the pre-test means 0.69 was lesser than the required F value of 4.20 which proved that the random assignment of the subject were successful and their scores in Forced Expiratory Volume in first second before the training were equal and there was no significant differences. The analysis of post test means proved that the obtained F value 4.36 was greater than the required F value of 4.20 to be significant at 0.05 levels. Taking in to consideration of the pre test and post test means the adjusted post test means were done and the obtained F value of 6.06 was greater than the required F value of 4.21 hence it was accepted that the yoga practices significantly increased the Forced Expiratory Volume in first second.

Figure – 1: Bar Diagram Showing The Mean Difference of Pre and Post Score in Forced Expiratory Volume in First Second



The result of the study on Forced Expiratory Volume in first second indicates that all the yoga practices group brought about significant improvement after the training. The results of the study indicate that there was a significant difference on Forced Expiratory Volume in first second between the yoga practices group and control group. However, yoga practices group was found to be better increasing the Forced Expiratory Volume in first second level in lung than control group.

**Table II: Computations of Analysis of Covariance of
Vital Capacity**

Test	Yoga practices Group	Control group	SV	SS	Df	MS	F
Pre Test mean	2.95	2.88	B	0.04	1	0.04	0.20
			W	7.34	28	0.19	
Post test Mean	3.22	2.98	B	0.59	1	0.59	4.56*
			W	7.65	28	0.20	
Adjusted post mean	3.20	3.01	B	0.34	1	0.34	10.63*
			W	1.18	27	0.03	

Table F-ration at 0.05 level of confidence for 1 and 28 (df)=4.20, 1 and 27 (df)=4.21

*Significant

As shown in table II the obtained F value on the scores of the pre-test means 0.20 was lesser than the required F value of 4.20 which proved that the random assignment of the subject were successful and their scores in Vital Capacity before the training were equal and there was no significant differences. The analysis of post test means proved that the obtained F value 4.56 was greater than the required F value of 4.20 to be significant at 0.05 levels. Taking in to consideration of the pre test and post test means the adjusted post test means were done and the obtained F value of 10.63 was greater than the required F value of 4.21 hence it was accepted that the yoga practices significantly increased the Vital Capacity.

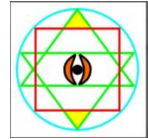
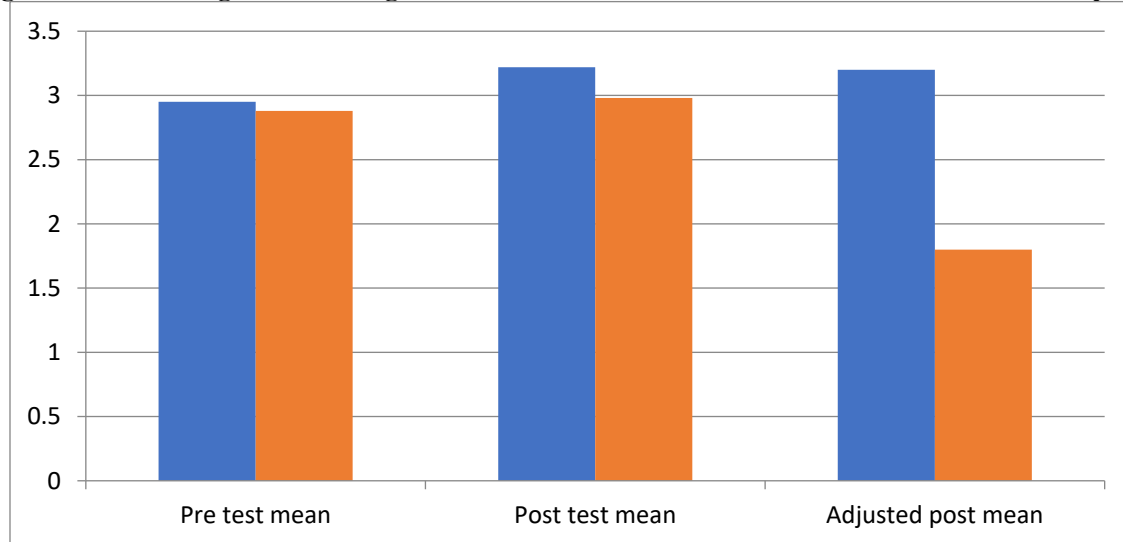


Figure – 2: Bar Diagram Showing The Mean Difference of Pre and Post Score in Vital Capacity



The result of the study on Vital Capacity indicates that all the yoga therapy group brought about significant improvement after the training. The results of the study indicate that there was a significant difference on Vital Capacity between the yoga practices group and control group. However, yoga practices group was found to be better increasing the Vital Capacity level in lung than control group.

6. Conclusion:

There was a significant improvement in selected physiological variable namely Forced Expiratory Volume in first second, and Vital Capacity among yoga practices group than the control group.

7. Reference:

- [1] Joshi, L.N. et al. (1992), “Effect of Short Term 'Pranayam' Practice on Breathing Rate and Ventilatory Functions of Lung”, India Journal of Physiology Pharmacology, 36(2),105-08
- [2] Bhargava, R. et al. (1988), “Autonomic Responses to Breath Holding and its Variations Following Pranayama”, Indian Journal of Physiology Pharmacology, 32(4), 257-64.