



सत्यमेव जयते

Ministry of AYUSH

Government of India



# The Research Impact of International Day of Yoga

A Scientometric Analysis of  
Yoga's Global Influence



June 2025

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PAHLÉ INDIA FOUNDATION

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## A Scientometric Analysis of Yoga's Global Influence

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राज्य मंत्री (स्वतंत्र प्रभार)  
आयुष मंत्रालय और  
राज्य मंत्री  
स्वास्थ्य एवं परिवार कल्याण मंत्रालय  
भारत सरकार



सत्यमेव जरजे

Minister of State  
(Independent Charge) of  
Ministry of Ayush and  
Minister of State in  
Ministry of Health and Family Welfare  
Government of India



स्वयं और समाज के लिए योग  
Yoga for self and society

## प्रतापराव जाधव PRATAPRAO JADHAV



### प्रस्तावना

विश्व को भारतीय सभ्यता का अनमोल उपहार, योग, आज वास्तव में एक वैश्विक घटना बन गया है। वर्ष 2015 से 21 जून को प्रतिवर्ष मनाया जाने वाला अंतर्राष्ट्रीय योग दिवस (IDY) इस परिवर्तनकारी यात्रा का प्रतीक है। सामूहिक उत्सव के एक क्षण के रूप में शुरू हुआ यह दिन अब एक जीवंत आंदोलन में बदल गया है, जिसने संस्कृतियों, भौगोलिक क्षेत्रों और पीढ़ियों के करोड़ों लोगों को व्यक्तिगत और सामाजिक कल्याण के मार्ग के रूप में योग को अपनाने के लिए प्रेरित किया है। इस वर्ष की थीम "Yoga for One Earth, One Health" योग की उस शक्ति को प्रतिध्वनित करती है जो सम्पूर्ण मानवता के समग्र स्वास्थ्य और संतुलन के लिए आवश्यक है।

'सुदृढ़ वैज्ञानिक विश्लेषण पर आधारित यह रिपोर्ट इस बात का एक सम्मोहक दृष्टिकोण प्रस्तुत करती है कि कैसे अंतर्राष्ट्रीय योग दिवस ने योग के प्रति रुचि, शोध और अभ्यास में विश्वव्यापी छलांग को उत्प्रेरित किया है। ये निष्कर्ष इस बात की पुष्टि करते हैं कि हमारी प्राचीन परंपराएँ आधुनिक युग में भी स्थायी रूप से प्रासंगिक बनी हुई हैं। योग केवल एक कल्याणकारी दिनचर्या नहीं है बल्कि यह एक समग्र दर्शन है जो संतुलन और लचीलेपन के साथ तन, मन और आत्मा की एकता को बढ़ावा देता है।

आयुष मंत्री के रूप में मुझे इस बात पर बहुत गर्व है कि माननीय प्रधानमंत्री श्री नरेंद्र मोदीजी के दूरदर्शी और गतिशील नेतृत्व में योग को बढ़ावा देने के भारत के प्रयास आज वैश्विक स्वास्थ्य और सॉफ्ट पावर कूटनीति की आधारशिला बन गए हैं। कॉमन योग प्रोटोकॉल, संस्थागत क्षमता निर्माण और वैश्विक पहुँच के माध्यम से हमारे सामूहिक प्रयासों ने दुनिया भर में 25 करोड़ से अधिक लोगों के जीवन में योग को शामिल किया है।

मैं इस सामयिक और व्यावहारिक रिपोर्ट के पीछे 'पहले इंडिया' और केन्द्रीय योग एवं प्राकृतिक चिकित्सा अनुसंधान परिषद (CCRYN) के शोधकर्ताओं की सराहना करता हूँ। यह योग न केवल व्यक्तिगत परिवर्तन के एक साधन के रूप में हर नागरिक तक पहुँचाने के हमारे संकल्प को मजबूत करता है, बल्कि दुनिया भर में स्वस्थ और अधिक सामंजस्यपूर्ण समुदायों के निर्माण के लिए मार्ग प्रशस्त करता है।

(प्रतापराव जाधव)

१२ जून, 2025  
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## FOREWORD

In the past decade, Government of India has taken significant strides to institutionalize Yoga within national health, education, and research systems. Ministry of Ayush has been at the forefront of this journey, mainstreaming Yoga through structured policies, programs, and partnerships that ensure quality, accessibility, and global credibility.

This report is a valuable contribution to evidence-based policy making. It offers a scientometric lens to assess the impact of key initiatives such as the International Day of Yoga (IDY), the Common Yoga Protocol (CYP) and the Yoga Certification Board (YCB). The data validates what many of us in the policy ecosystem have long observed. Yoga is steadily transitioning from a cultural practice to a science-backed tool for preventive and therapeutic healthcare.

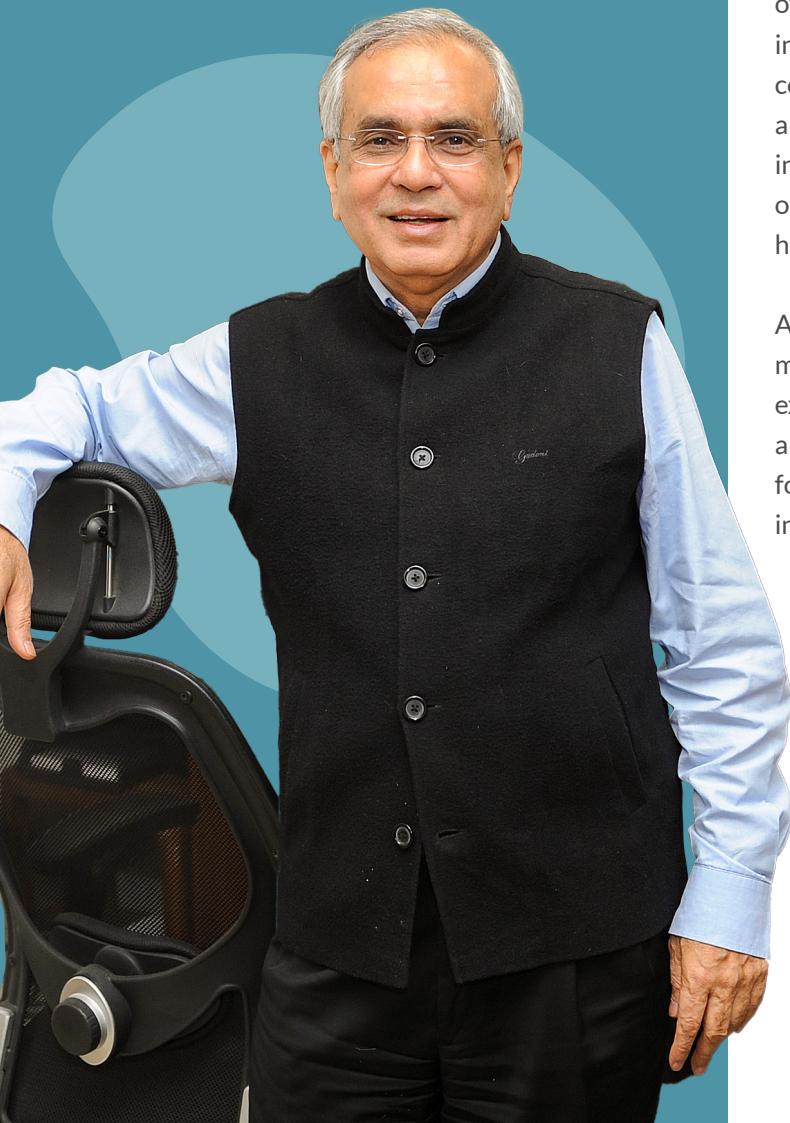
The Ministry remains committed to deepening this integration. As we build national frameworks for research, education, and community outreach, we must also preserve the ethical and philosophical core of Yoga. Policy must therefore balance the imperatives of scale with the need for authenticity.

I congratulate Pahlé India Foundation and Central Council for Research in Yoga and Naturopathy (CCRYN) for this scholarly and timely effort. Let this serve as a blueprint for the future where Yoga is seamlessly woven into the public health fabric of both India and the world.

(Rajesh Kotecha)

12<sup>th</sup> June, 2025.

# From the Chairman's Desk



Yoga's integration into mainstream research is not just a matter of cultural pride, it is of vital scientific and public health importance. This report, undertaken in collaboration with the Ministry of AYUSH, analyses ten years of data that traces how yoga has moved from the margins of empirical science to become a robust subject of clinical and interdisciplinary inquiry.

The International Day of Yoga (IDY), celebrated globally each year since 2015, has been a watershed moment in this journey. With mass participation across more than 190 countries and unprecedented digital engagement, IDY has not only amplified awareness but also created measurable behavioural shifts in wellness practices worldwide. Given its apparent phenomenal impact, it became essential to assess how IDY has influenced scientific thinking, research trends, and institutional engagement with yoga. This report answers that need.

By conducting a comprehensive scientometric analysis of yoga-related research, this study provides insights into evolving trends, publication patterns, and global collaborations in the yoga ecosystem. It will serve as a ready reckoner for researchers, policymakers, and institutions alike, helping them identify gaps, spot opportunities, and align future efforts with global health imperatives.

At Pahlé India Foundation, we believe that research must inform both action and aspiration. This report exemplifies that ideal. It is my hope that it will inspire a new wave of academic inquiry and policy innovation for promoting the Indian traditional knowledge system in the important field of providing holistic health care.

**Dr. Rajiv Kumar**  
**Chairman, Pahlé India**  
**Foundation**

A handwritten signature in black ink, appearing to read "Rajiv Kumar".

# Acknowledgement

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We also acknowledge the invaluable contributions of the broader ecosystem of yoga practitioners, educators, policymakers, and health professionals whose ongoing work continues to shape the global narrative around yoga. This report stands as a tribute to their efforts, reinforcing the mission of making yoga accessible, evidence-based, and transformative for all.

Finally, we extend our deepest gratitude to Dr. Rajiv Kumar, Chairman, and Mr. Ravi Pokharna, Executive Director, PIF, for their leadership and support.

Any errors or omissions remain solely the responsibility of the authors.





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## List of Experts Consulted

Sr. No	Names and Affiliations
1	Prof BR Sharma, Former Vice Chancellor of Sri Sri University in Cuttack, Odisha
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5	Dr BN Gangadhar, President MARB, National Medical Commission Former Senior Professor of Psychiatry & Director, NIMHANS
6	Dr Chinmay Pandya, Chairperson, South Asian Institute of Peace and Reconciliation, Dev Sanskriti University, Haridwar
7	Shri Subodh Tiwari, CEO, Kaivalyadhama
8	Dr Shivarama Varambally, Professor, Department of Psychiatry, NIMHANS

# List of Abbreviations

<b>Fig No</b>	<b>Description</b>
CCRYN	Central Council for Research in Yoga & Naturopathy
IIYSAR	Indian Institute of Yogic Science and Research
SVYASA	Swami Vivekananda Yoga Anusandhana Samsthana
AIIMS	All India Institute of Medical Sciences
JIPMER	Jawaharlal Institute of Postgraduate Medical Education & Research
NIMHANS	National Institute of Mental Health and Neuro Sciences
USA	United States of America
RCTs	Randomised Controlled Trials
TM	Transcendental Meditation
MBSR	Mindfulness-Based Stress Reduction
AYUSH	Ayurveda, Yoga, Naturopathy, Unani, Siddha, and Homoeopathy
NCCIH	National Centre for Complementary and Integrative Health
WHO	World Health Organisation
IDY	International Day of Yoga
UNGA	United Nations General Assembly
CYP	Common Yoga Protocol
YCB	Yoga Certification Board
MDNIY	Morarji Desai National Institute of Yoga
LNIPE	Lakshimbai National Institute of Physical Education
MoHFW	Ministry of Health and Family Welfare
PCOS	Polycystic Ovary Syndrome
RYE	Research on Yoga in Education
NCERT	National Council of Educational Research and Training
NDHM	National Digital Health Mission
NSS	National Service Scheme
NYKS	Nehru Yuva Kendra Sangathan
IAYT	International Association of Yoga Therapists
NCDs	Non-Communicable Diseases
VR	Virtual Reality

# Executive Summary

India is recognised as the birthplace of yoga and is well-positioned to leverage its vast wealth of knowledge and traditions as both a tool of soft power and a public health resource. At the heart of yoga's global ascendance, India shapes its contours through its promotion, dissemination, and evolving scientific inquiry. Since the launch of the International Day of Yoga (IDY), observed every year on the 21st of June, yoga has found renewed vitality. IDY has become far more than a ceremony, it has successfully managed to amplify wellness narratives, encourage mass participation, and provide visibility to yoga's enduring and universal relevance. In this context, this report undertakes a scientometric analysis of the global research footprint of yoga. It is a measure of yoga's institutional frameworks, research capacities, skill development systems, as well as equitable access challenges in India's landscape.



## Chapter 1

Sets the context and gives an overview of its history and evolution,

## Chapter 2

Dives into the data. It highlights a surge in research publication trends post 2015, following the inception of IDY. Publications increased by 120%, validating its role in managing chronic diseases, stress, and mental health. Additionally, clinical trial registrations also rose significantly. However, gaps in longitudinal studies and India's visibility in high-impact international journals and networks remain.

## Chapter 3

Details India's institutional and policy frameworks aimed at coordinated programs, capacity building and international diplomacy. Initiatives such as the Common Yoga Protocol, the Yoga Certification Board, Skill India partnerships, and the Yoga Sangam Portal have successfully engaged large numbers of participants while also standardising practices. These efforts are further complemented by the economic growth in the wellness sector and innovations in digital health technologies that support yoga teaching and practice.



## Chapter 4

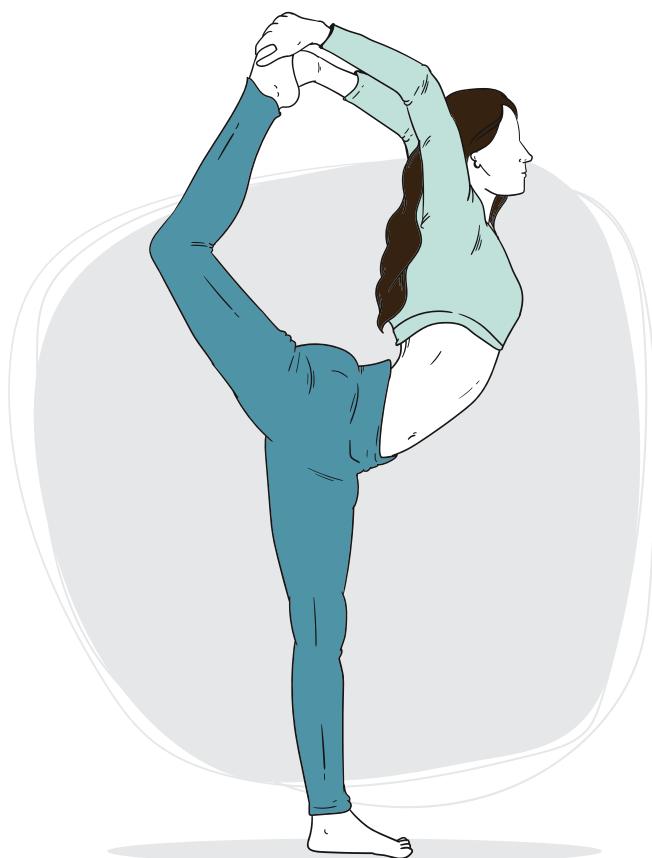
Explores the real-world application of yoga in India's health systems, education, and workforce productivity. Yoga has been systematically embedded in school curricula, medical education, workplace programs, and public health interventions. The benefits of yoga in rehabilitation, mental health, women's health, and stress management have been widely documented in the literature. Certain educational reforms have broadened yoga's inclusion across levels of schooling, while corporate and professional sectors progressively adopt yoga practices to boost employee well-being.

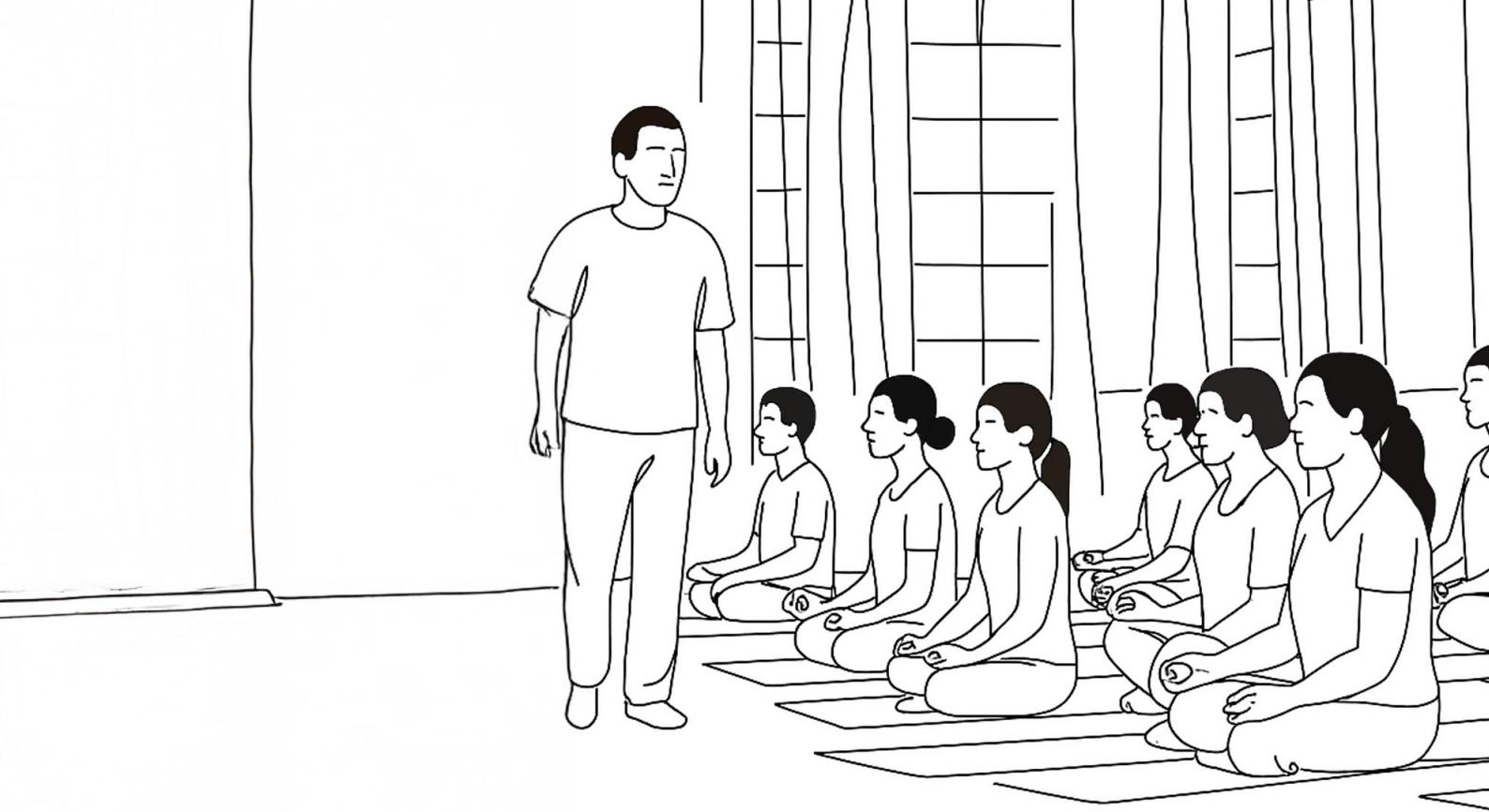
## Chapter 5

Makes it clear that the upward trajectory of yoga is not without obstacles. India's research landscape remains fragmented. Access to quality training is uneven. Commodification threatens to strip yoga of its philosophical core, while global leadership is constrained by limited international collaborations and qualitative depth.

## Chapter 6

Presents opportunities to consolidate India's research capabilities. It calls for the preservation of its spiritual essence while aligning with modern health imperatives. It also advocates for youth leadership and culturally sensitive programming. Finally, the report addresses if India's growth in research and practice is going to continue to grow; what is needed now is stronger coordination across institutions, sharper policy alignment, and more rigorous, evidence-based research.





## CHAPTER 01

# Introduction

On June 21, 2014, the United Nations designated this day as the International Day of Yoga (IDY), marking a watershed moment in recognizing yoga as a holistic health and wellness practice rooted in Indian tradition. Since its inaugural celebration in 2015, IDY has evolved from a symbolic event into a dynamic platform for health promotion, policy convergence, and institutional engagement.

This transformative journey is evident in the participation numbers and ripple effects that have followed.

In India alone, the very first IDY in 2015 drew

**8.5 million participants,**

and over 35% of them continued their yoga practice thereafter (Manjunath, 2023).





Building on this early momentum, global participation has since soared to approximately 245.2 million people (Ministry of AYUSH, 2024). Beyond these striking figures, the event sparks a significant surge in digital engagement in terms of search engine queries and social media activity related to yoga, jumping by more than 200% in the days around IDY, as reflected by the widespread use of hashtags like #InternationalYogaDay. On the economic front, the yoga and wellness industry, including apparel, equipment, training, and tourism, has experienced consistent growth since 2015, with global market projections now exceeding USD 100 billion (Manjunath, 2023). These insights, drawn from Ministry reports and international partner organisations, underscore IDY's profound global impact.

Within this context, our report undertakes a rigorous scientometric analysis of yoga-related health research from 2014 to 2024. We trace the evolution of yoga in scientific discourse and its integration into health, education, and policy frameworks, drawing on peer-reviewed literature from PubMed to present a comprehensive global perspective.

# 1.1 Historical Evolution of Yoga from Traditional to Scientific Discourse

The term yoga originates from the Sanskrit root 'yuj', meaning 'to unite' or 'to join', a fitting definition for a practice designed to merge individual consciousness with universal awareness. Rooted in ancient Indian wisdom, yoga has evolved into a globally respected discipline that addresses physical, mental, emotional, moral, and spiritual dimensions of human development. Archaeological evidence from the Indus-Saraswati civilization (circa 2700 BCE),

including depictions of yogic postures, along with the earliest textual references in the Rig Veda, reveal a tradition steeped in meditation and self-discipline (CCRYN, 2022; IIYSAR, n.d.).

Over the centuries, yoga absorbed diverse cultural influences, eventually coalescing into a structured practice with the formulation of Patanjali's Yoga Sutras around the 2nd century BCE.

**YAMA** (ethical restraints) and **NIYAMA** (personal observances) for cultivating moral discipline and graceful living,



**ASANA** (postures) and **PRANAYAMA** (breath control) for refining physical form and energy flow,



**PRATYAHARA** (sense withdrawal), **DHARANA** (concentration), **DHYANA** (meditation), and **SAMADHI** (absorption) for achieving profound states of self-transcendence and surrender to Isvara (Singh & Saras, 2022)



Seminal texts such as the Bhagavad Gita further broadened the yogic landscape by outlining three distinct paths: Bhakti (devotion), Jnana (knowledge), and Karma (action). These diverse approaches have enriched yoga's evolution, positioning it as a multidimensional discipline that fosters inner growth, ethical conduct, and spiritual insight, adaptable to varied sociocultural and psychological contexts (Kumar & Kumar, 2023).

The modern transformation of yoga from a spiritual practice and repository of traditional knowledge into a subject of empirical inquiry began in the early 20th century. Visionaries like Paramahansa Madhavdasji played pivotal roles in reviving yoga, traveling extensively across India and mentoring disciples such as Swami Yogaendra and Swami Kuvalayananda. Notably, Swami Kuvalayananda founded the Kaivalyadhamma Yoga Institute in 1924 and pioneered the use

of scientific instruments like kymographs, spirometers, and biochemical assays to measure the physiological impacts of pranayama and asanas. His findings, published in the *Yoga Mimamsa* journal, laid the groundwork for the scientific validation of yoga and underscored its potential for enhancing physical and mental health (*Yoga Mimamsa*, 2017).

In the decades that followed, prominent Indian yogis, including Maharishi Mahesh Yogi and Swami Rama catalyzed the spread of yogic practices to the West, igniting global interest in meditation and the siddhis (extraordinary abilities) of advanced practitioners. Early research in the 1960s and 70s documented phenomena such as voluntary regulation of heart rate, skin temperature, and metabolic rate. For example, experiments conducted at the Menninger Foundation with Swami Rama and studies by researchers like Bagchi and Wenger (1961) provided early scientific evidence of yoga's influence on the autonomic nervous system. Controversial accounts, such as Yogi Satyamurthy's five-day samadhi in an airtight chamber (Kothari et al., 1973), further spurred scientific curiosity. Studies also showed that even non-expert practitioners of Transcendental Meditation (TM) experienced significant physiological changes (Wallace, 1970; Jevning, Wallace, & Beidebach, 1992), bridging ancient practices with modern scientific understanding.

A turning point in integrating yoga into mainstream medicine came with early randomized controlled trials. A notable example is the study on yoga for hypertension published by Chandra Patel in *The Lancet*, followed by research on bronchial asthma by Nagarathna and

Nagendra in the *British Medical Journal* (1985). These pioneering studies encouraged medical practitioners to view yoga as a complementary therapy. Subsequent experimental work by scholars such as Padoux (2006) reinforced the promising mind-body connections inherent in yoga. However, challenges remain such as variations in yoga practice, inconsistent definitions, and small sample sizes complicate the generalization of findings (Cramer et al., 2013; Büsing et al., 2012).

Despite its global popularity, much of the existing literature has focused primarily on the physical elements of yoga, especially asanas and pranayama at the expense of its rich philosophical and ethical traditions. Western adaptations like Power Yoga, Bikram Yoga, and Mindfulness-Based Stress Reduction (MBSR) often repackaging yoga for clinical or commercial purposes, losing sight of its holistic origins and transformative potential (Bhogal, 2014). As the field advances, it becomes essential to conduct scientometric analysis that not only charts the evolution of yoga research but also assesses the effectiveness and comprehensiveness of the domains being explored.

In summary, yoga's rich heritage from its origins as a meditative practice embedded in ancient Indian traditions to its modern reconceptualization as a holistic system for health and well-being, underscores its enduring global impact. Recognizing this evolution, contemporary research must continue to honor both the spiritual and empirical dimensions of yoga to fully harness its potential in addressing modern health challenges.

## 1.2 Scope and Significance of Study

This study presents a comprehensive scientometric analysis of yoga-related health research spanning from 2014 to 2024, capturing the notable surge in investigations on yoga and meditation following the establishment of the IDY. By focusing exclusively on peer-reviewed articles indexed in the PubMed database, the research ensures both academic rigor and topical relevance, while emphasizing the need for yoga research that is contextualized, ethically sound, and culturally sensitive.

Using a systematic search strategy, we identified and analyzed articles that specifically examine the interplay between yoga and health. Our analysis tracks trends in publication frequency, thematic focus areas, and citation patterns across all relevant literature published up to December 2024, offering a comprehensive view of yoga's evolving role in contemporary health discourse.

The overarching goal of this study is to deliver a structured analysis of yoga research both in

India and globally that can inform institutional collaboration, shape policy decisions, and promote deeper integration of yoga into clinical practice, research paradigms, and health education. To bridge the gap between policy, science, and practice, the study also incorporates qualitative insights from subject-matter experts, underscoring how India's growing engagement with scientific inquiry into yoga is celebrated and supported worldwide.

Adopting a mixed-methods approach, the study combines quantitative scientometric techniques, such as bibliometric and citation analyses, with qualitative expert validation. We examine key parameters including publication frequency, documented health outcomes, institutional affiliations, and geographical trends to assess the field's expansion and orientation. The significance of this research lies in its ability to provide a robust evidence base that clarifies how yoga has been integrated into contemporary health science in the years following the initiation of the IDY.

## 1.3 India's Unique Positioning in the Global Yoga Ecosystem

India occupies a distinctive and influential position in the global yoga arena. As the birthplace of yoga and the guardian of its rich philosophical heritage, India has evolved into a vibrant hub for the intellectual, scientific, and diplomatic dimensions of yoga practice and dissemination. This evolution is not merely a testament to its

cultural strength; it is a dynamic fusion of age-old traditions with modern governance, innovative research, and strategic soft power diplomacy (Gautam, 2024). Today, India supports over 100 AYUSH information cells and yoga centers worldwide.

In 2014, India established the Ministry of AYUSH, formally recognizing yoga as a cornerstone of public health and wellness policy.



Since then, the nation has emerged as a major contributor to yoga-related scientific research, both in volume and thematic diversity. Scientometric trends reveal that Indian researchers are at the forefront of investigating yoga's effectiveness in combating lifestyle disorders, mental health conditions, and broader public health challenges. The publication of yoga studies in high-impact journals and India's growing role in international collaborations since the advent of the IDY underscore its emerging potential for scientific leadership (Dutta et al., 2022).

Yoga has also become a vital instrument of India's soft power, featuring prominently in its diplomatic initiatives and cultural outreach. Celebrated in over 60 countries, the IDY demonstrates the universal allure and adaptability of the practice. Indian missions across the globe organize large-scale events to commemorate the day, showcasing yoga as a practice that transcends borders and unites diverse cultures, thereby enhancing India's image as a repository of cultural heritage and spiritual wisdom (Ministry of AYUSH, 2024).

The Indian Council for Cultural Relations (ICCR) has played a pivotal role in internationalizing yoga through its extensive network of cultural centers. Since 2015, ICCR has organized IDY programs and annual international seminars in key global cities such as New York, London, and Seoul. These seminars have brought together policymakers, researchers, yoga practitioners, and enthusiasts, fostering a vibrant exchange of ideas and collaborative inquiry. Notably, the seminar held in Seoul served as a critical bridge between discussions in Asia, Europe, and North

America, further amplifying India's stature in global yoga diplomacy.

Economically, yoga is a key driver in India's burgeoning wellness sector. The AYUSH industry, which includes Ayurveda, Yoga, Naturopathy, Unani, Siddha, and Homoeopathy, was collectively projected to exceed USD 23 billion in 2023 (PIB, 2022). India's excellence in training yoga teachers and practitioners, delivering therapeutic services, and offering high-quality wellness products has established it as a significant exporter of yoga-related goods and services. Destinations like Rishikesh and Mysore have become epicenters of yoga tourism, attracting millions of international visitors each year, stimulating local economies, and reinforcing India's role as the global capital of traditional wellness (Gautam, 2024).

Looking to the future, India is taking bold steps to promote yoga as a competitive sport on the global stage. Yogasanas have been introduced as events in national competitions such as the Khelo India Games and the National Games. Subsequently, the formation of the National Yogasana Sports Federation and the World Yogasana Sports Federation aims to codify and standardize yoga competitions, positioning yogasana as a globally recognized discipline with aspirations for inclusion in events like the Olympics (PIB, 2021). This progressive initiative has garnered significant interest from universities, colleges, and youth-centric programs across the country, underscoring that India's approach to yoga is both deeply rooted in its traditions and actively forward-looking.

In essence, India's multifaceted engagement with yoga as a scientific endeavor, a health policy pillar, a cultural export, and an economic catalyst, demonstrates its unique and robust position in the global yoga landscape.

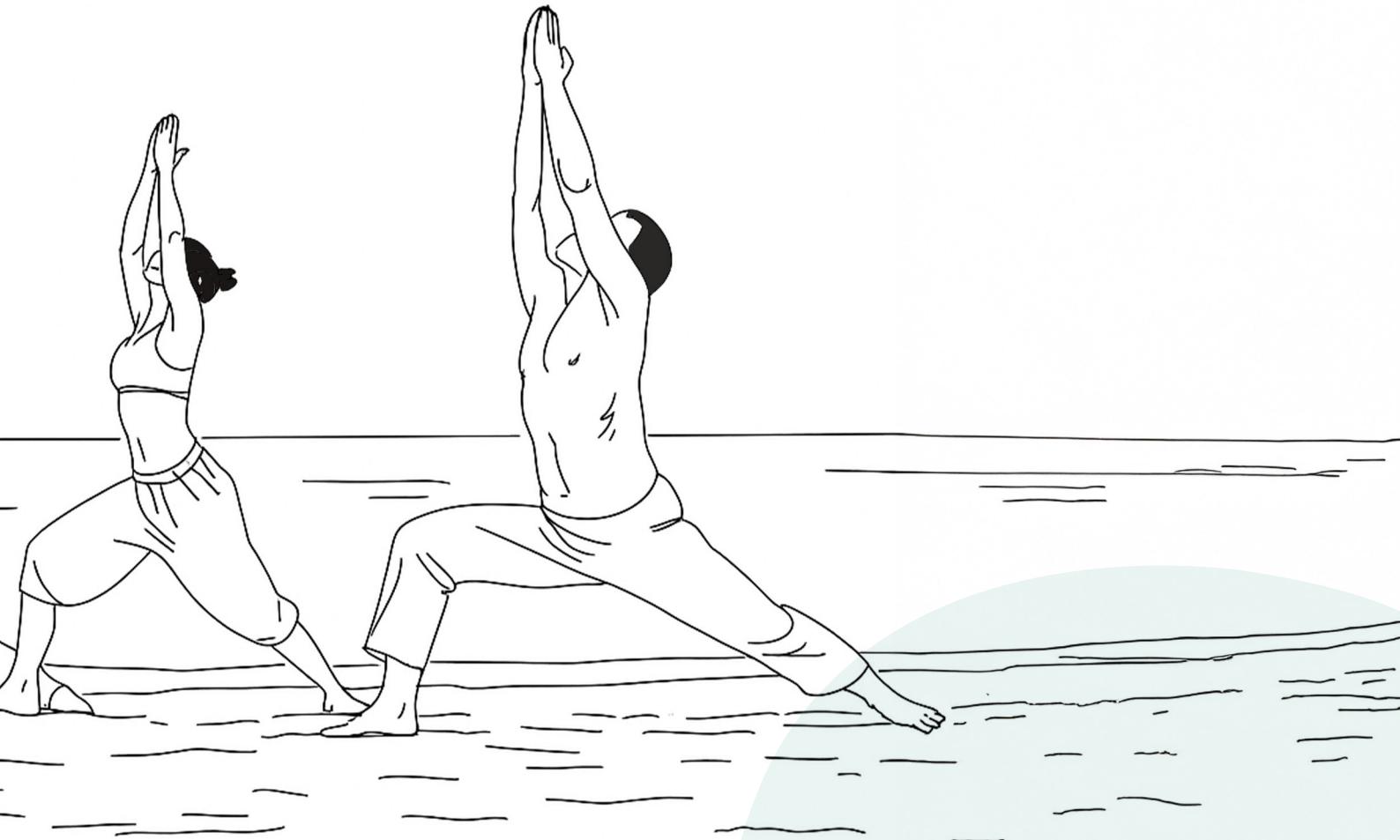


## CHAPTER 02

# Research Publication Trends

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A robust body of quantitative research has primarily focused on yoga's effects on the autonomic nervous system, cardiorespiratory function, stress response, and chronic disease management.



## 2.1 Global Trends

Since the inception of the IDY in 2015, global enthusiasm for yoga has surged, with numerous studies substantiating its physiological and psychological benefits (Ministry of AYUSH, n.d.). This growing evidence base supports yoga's proven role in stress reduction, autonomic regulation, chronic disease management, and the enhancement of emotional resilience.

In the United States, esteemed institutions such as the Osher Centre for Integrative Medicine at Harvard (Osher Centre, n.d.), the Mayo Clinic (Mayo Clinic, n.d.), and Johns Hopkins University (Johns Hopkins Medicine, n.d.) have established dedicated integrative medicine departments. Similarly, the National Centre for Complementary and Integrative Health (NCCIH) endorses evidence-based complementary practices, including yoga. Across Europe and Asia, research on yoga variations such as Mindfulness-Based Stress Reduction (MBSR) and restorative yoga has gained significant traction, emphasizing a global shift toward an empirical understanding of the mind-body connection and long-term wellness (Telles, Gerbarg, & Kozasa, 2015).

A robust body of quantitative research has primarily focused on yoga's effects on the autonomic nervous system, cardiorespiratory function, stress response, and chronic disease management. Pioneering work by Swami Rama and Dr. Herbert Benson demonstrated that yoga can intentionally influence physiological responses (Green, Green, & Walters, 1979), while randomized controlled trials have verified its efficacy in treating hypertension (Patel, 1973), depression, and musculoskeletal disorders. However, a notable gap exists in qualitative research. Few studies have explored the lived experiences of yoga practitioners, leaving cultural context, personal meaning, and long-term

perceptions, particularly in India, where yoga has deep historical roots under-examined.

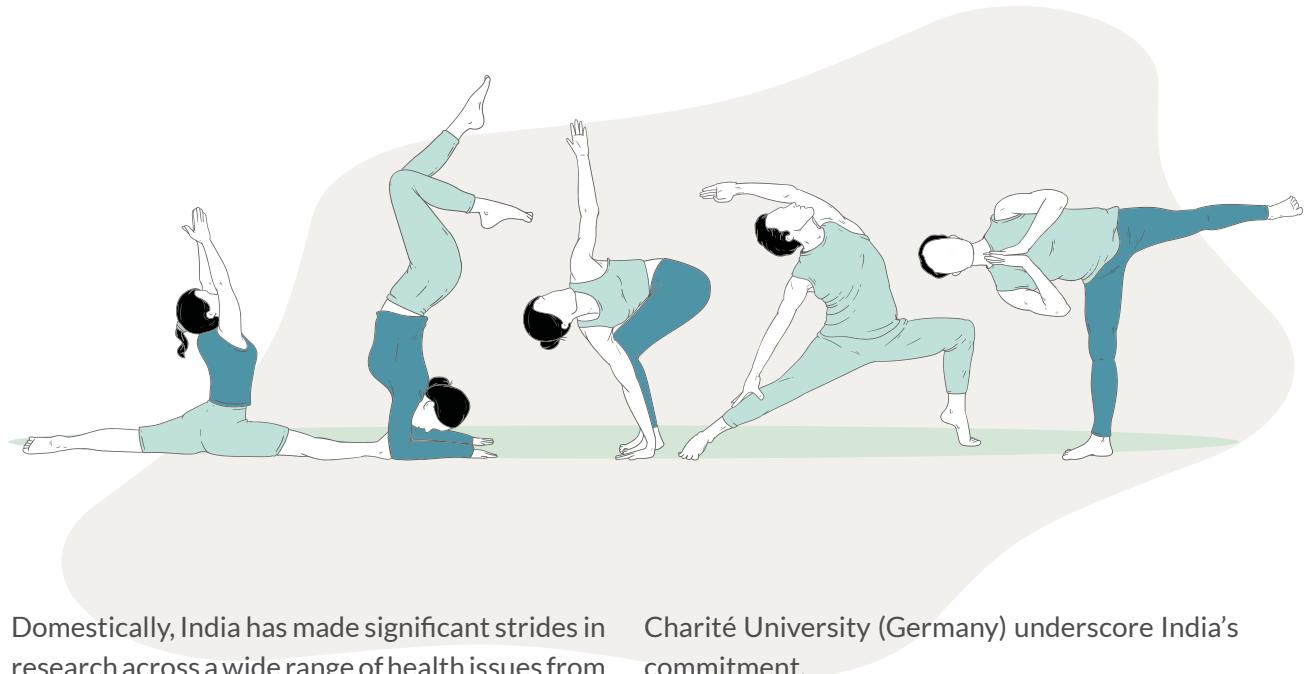
While Western institutions often dominate global yoga scholarship, it is essential to reaffirm India's foundational and enduring contributions to the field. This paper, though primarily focused on scientometric analysis, acknowledges this methodological imbalance and calls for a more multidimensional research approach, one that integrates compelling quantitative data with rich qualitative narratives to fully capture the transformative impact of yoga on individuals and communities worldwide.

## 2.2 Indian Trends

**India boasts a profound philosophical and historical foundation anchored in the Vedas, Upanishads, and classical yogic literature.**



While this ancient wisdom informs a rich tradition of scriptural and theoretical research, Western institutions have frequently taken the lead by conducting large-scale clinical trials and fostering interdisciplinary collaborations with neuroscience, psychology, and public health. Bridging this millennia-old knowledge with modern scientific rigor remains a critical priority, as India has yet to match the scale of clinical trials typical in the pharmaceutical and biomedical sectors.



Domestically, India has made significant strides in research across a wide range of health issues from mental health and non-communicable diseases to geriatric and women's care. Pioneers such as Swami Kuvalayananda and Swami Yogendra, along with institutions like Kaivalyadhama, S-VYASA, and leading departments at AIIMS, NIMHANS, JIPMER, and Dev Sanskriti University, have built a robust ecosystem that has studied pranayama and asana since the early 20th century. With over 50,000 scientific publications on AYUSH systems, including yoga, India's research momentum is undeniable (NIMHANS, 2017). This progress is further supported by national frameworks such as the National Health Policy 2017, which advocates for integrating traditional knowledge with modern healthcare: initiatives like the Ministry of AYUSH, Centres for Integrative Medicine and Research (CIMR) at AIIMS, and international partnerships with institutions such as the National Cancer Institute (USA) and

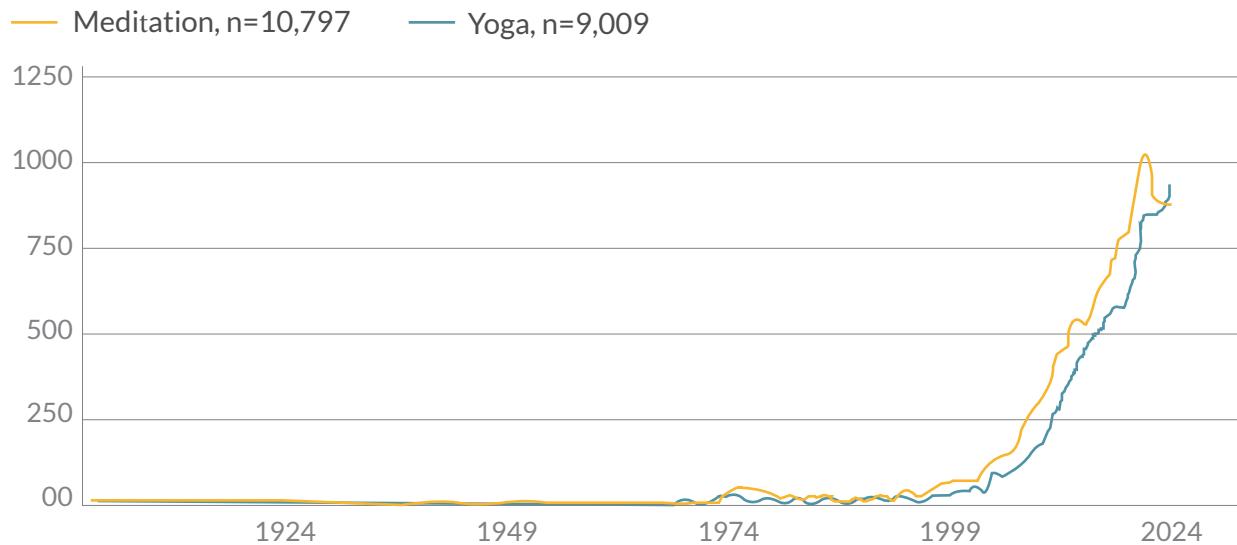
Charité University (Germany) underscore India's commitment.

Yet, on the global stage, India's leadership in yoga research remains underrepresented. Challenges persist in achieving international visibility, with limited cross-referencing in global journals and fragmented research spanning various disciplines. A significant divide exists between allopathic medicine and traditional AYUSH systems, as medical education rarely integrates yoga in a structured or meaningful way. Moreover, there is a noticeable gap in translational research linking scientific findings to real-world applications. Despite many commendable initiatives, disparities between policy and practice—and between modern science and traditional knowledge—continue to hinder India's full potential as a global leader in yoga research.

## 2.3 Disease-specific Trends

### **Yoga Research Scenario - Global**

Since the early 2000s, a consistent upward trend has been observed in the number of academic publications related to yoga and meditation. This growth has notably accelerated in the past decade. As of December 2024, a PubMed search yielded 9,009 articles on 'yoga' and 10,797 articles on 'meditation' (See Fig. 1)

**Fig.1: Timeline of the number of publications on ‘yoga’ and ‘meditation’ in PubMed**

According to PubMed data, about 54.51% of articles relate to meditation, while 45.49% focus on yoga. Notably, India contributes 25.83% of yoga publications but only 6.93% of meditation articles, highlighting the Western dominance in meditation research. It should be noted that systematic reviews make up 51.88% of yoga articles and 48.12% account for meditation.

Additionally, meta-analyses account for 61.16% of yoga research compared to 38.84% for meditation. In India, publications on yoga have surged by 165.26% (from 639 to 1695) and those on meditation by 191.15% (from 192 to 559) over the same period. This significant decadal growth is largely attributed to the rising popularity of yoga following the United Nations' declaration of June 21st as IDY.

**Table 1: Articles on PubMed related to keywords ‘yoga’ and ‘meditation’ available globally and in India**

Article Type	Meditation		Yoga	
	Global n(%)	India n(%)	Global n(%)	India n(%)
Total Published Articles in yoga and Meditation in PubMed (n=19806)	10797 (54.51%)	748 (6.93%)	9009 (45.49%)	2537 (25.83%)
Systematic Review & Reviews (n=3940)	1896 (48.12%)	153 (8.07%)	2044 (51.88%)	353 (17.27%)
Meta-analysis (n=672)	261 (38.84%)	8 (3.07%)	411 (61.16%)	35 (8.52%)
Articles before 2014 (including 2014) (n=6985)	4051 (58%)	192 (4.74%)	2934 (42%)	639 (21.78%)
Articles after 2014 (n=12821)	6746 (52.62%)	559 (8.29%)	6075 (47.38%)	1695 (27.90%)

Number of Published RCTs on Meditation from 2004 onwards (n=1395)

## Trend of Publications After 2014:

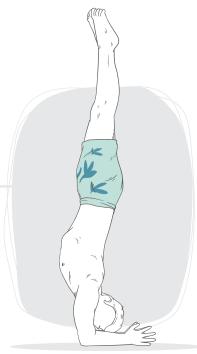
Since 2014, publications in both yoga and meditation research have surged dramatically,

**with yoga studies increasing by**

**107.06%**

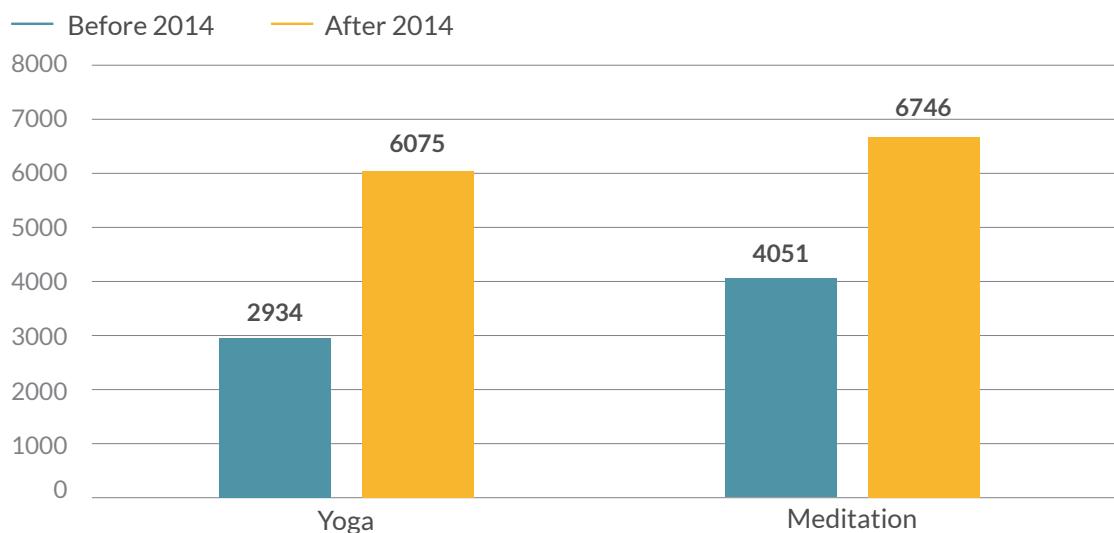
**meditation studies by**

**66.53%**

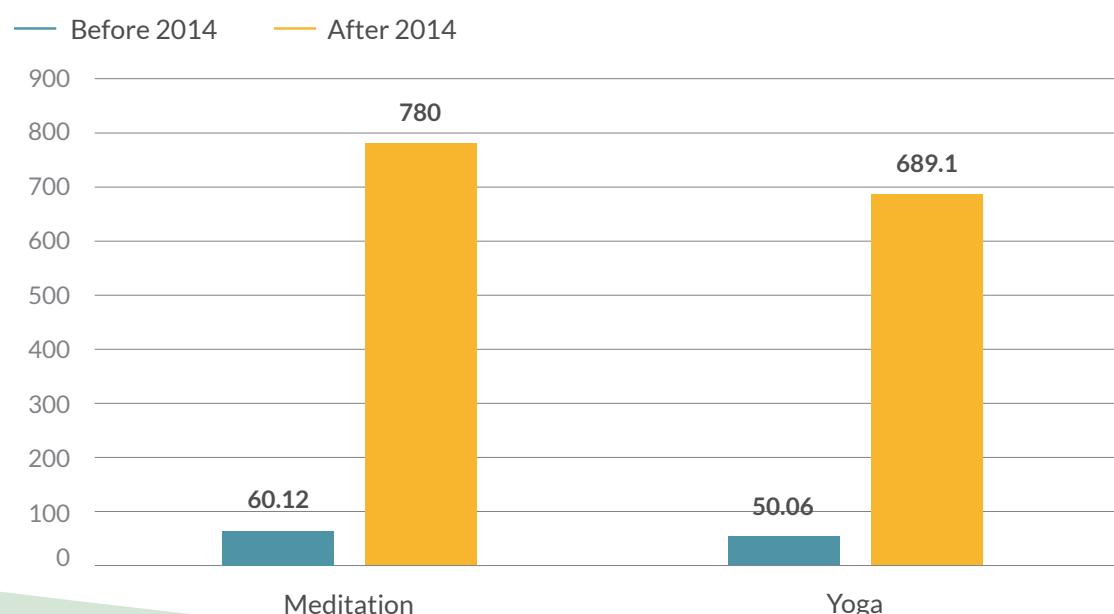


This marked uptick, as reflected in PubMed data (accessed on 14 April 2025), likely signals a strategic shift from exploratory work to confirmatory trials, particularly in the areas of psychosomatic research and chronic disease management.

**Fig 3. Global Trends for an increase in research publications on ‘yoga’ and ‘meditation’ before and after 2014**



**Figure 4: Yearly publications on yoga and meditation before and after 2014.**



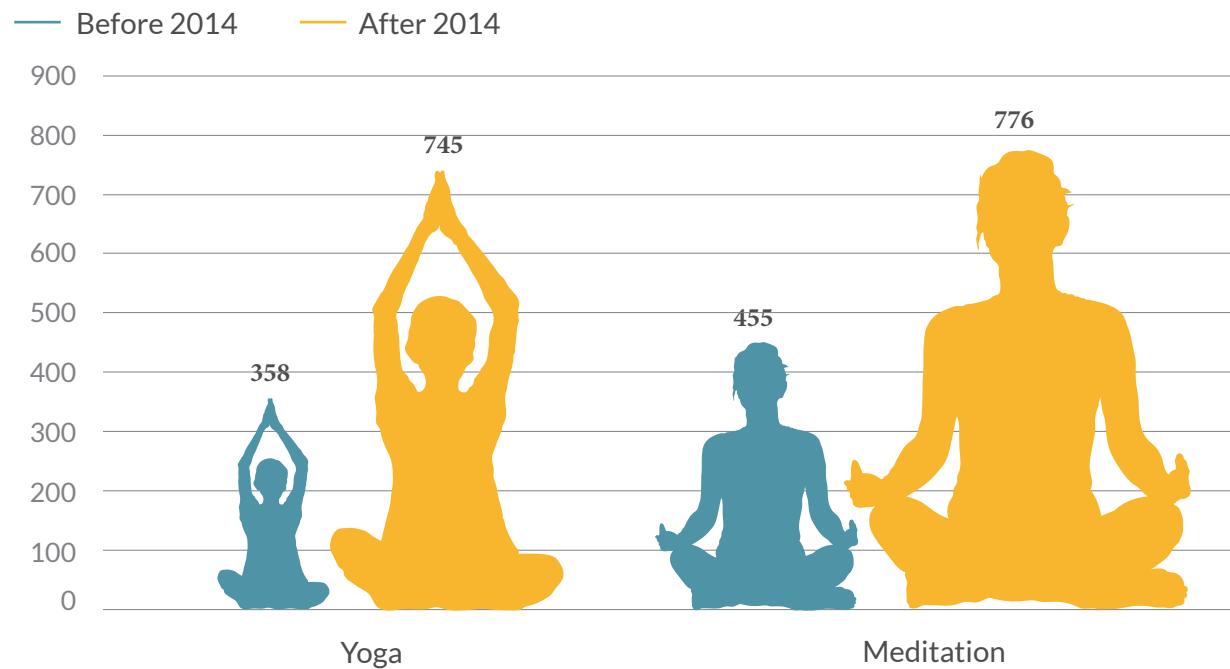
## RCT Publications on yoga

After 2014, the proportion of RCT publications on yoga witnessed a marked rise, from 12.2% pre-2014 to 12.26 % post-2014, compared to a shift from 11.23% to 11.5% for meditation.

**Table 3. Proportion of RCT publications on yoga and meditation before and after 2014**

	Before 2014		After 2014 (2015- December 2024)	
	Total Articles	RCT	Total Articles	RCT
<b>Yoga</b>	2934	358 (12.2%)	6075	745 (12.26%)
<b>Meditation</b>	4051	455 (11.23%)	6746	776 (11.5%)

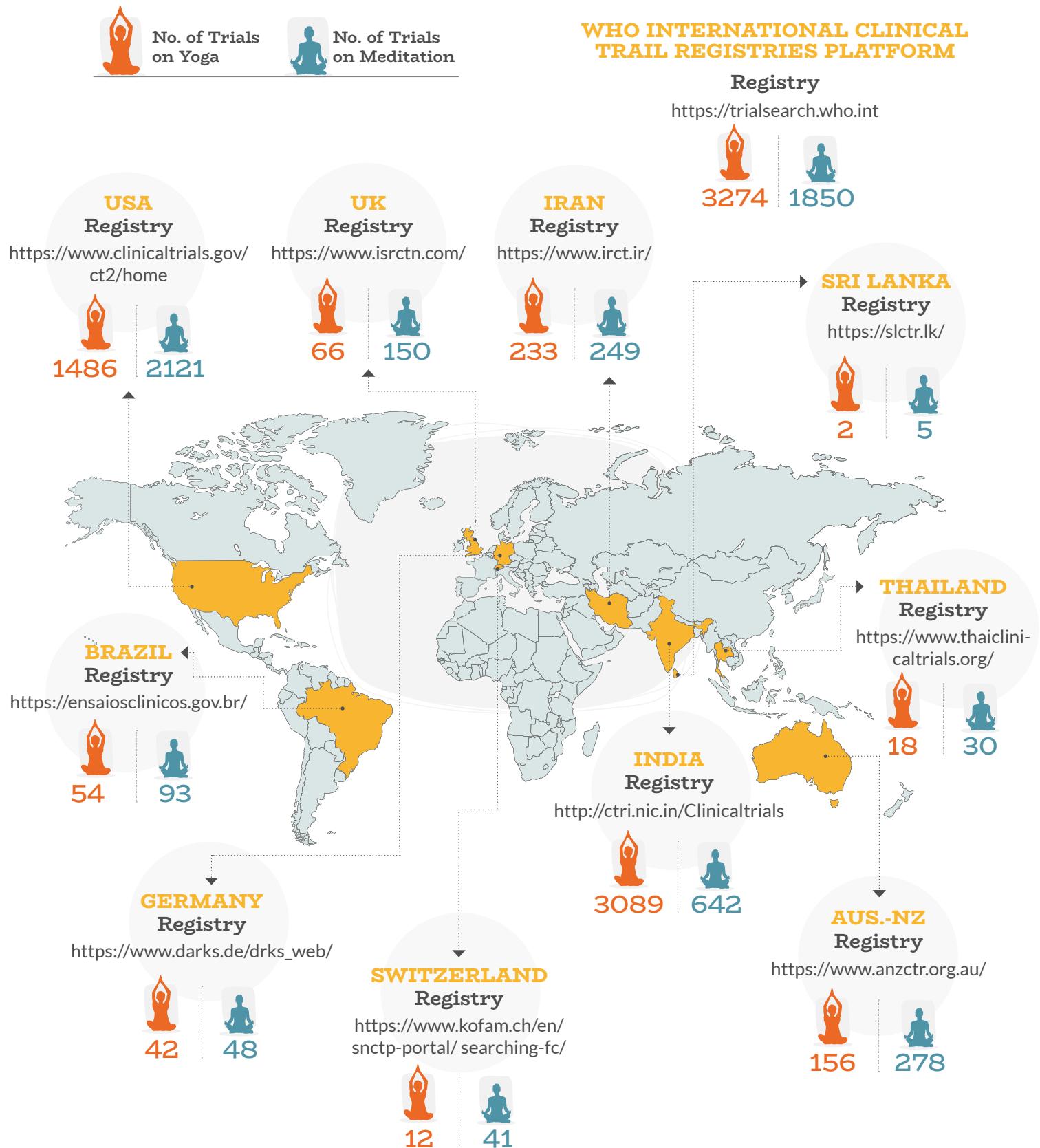
**Fig. 5. Publications on randomised controlled trials on yoga and meditation before and after 2014.**

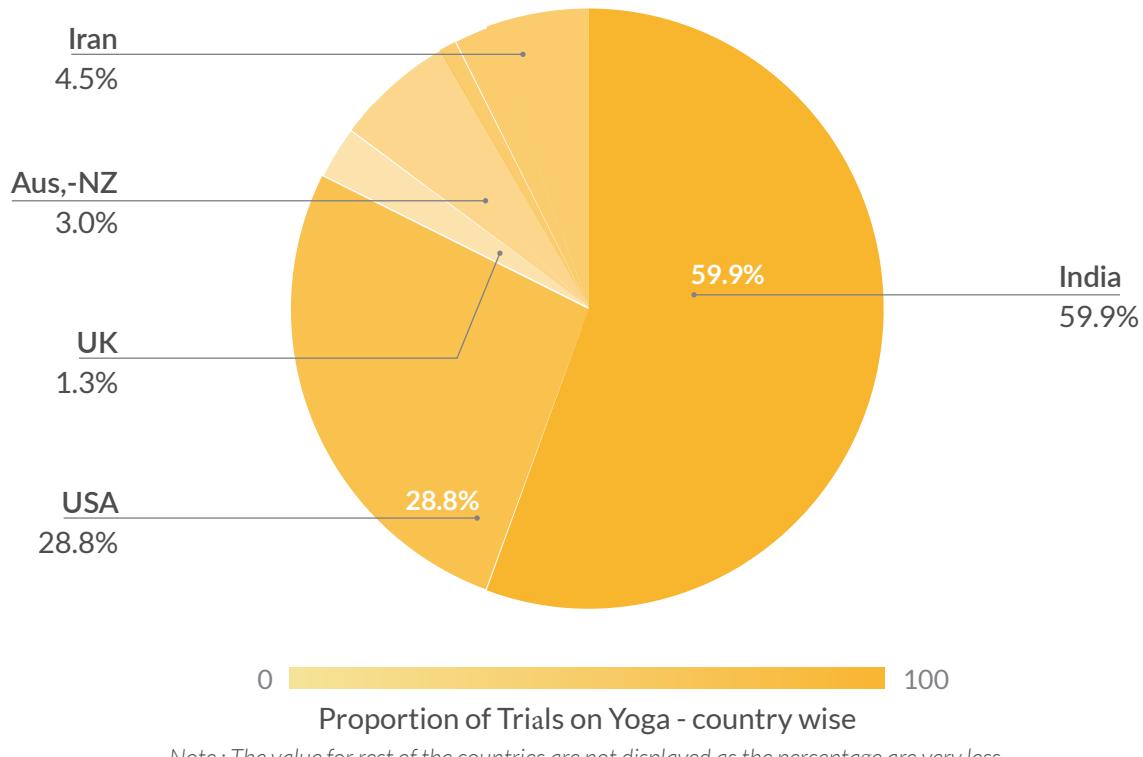
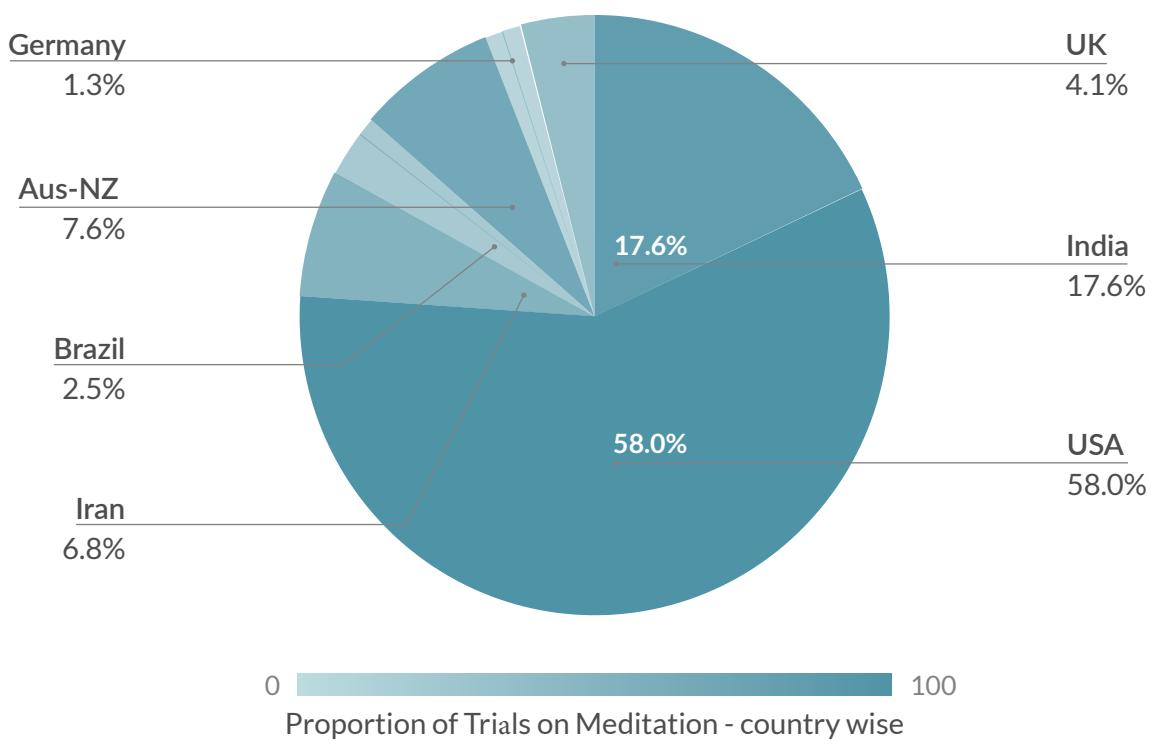


## Clinical trials registered in the clinical trial registry, country-wise

Between January 2001 and December 2024, a total of 3,274 yoga trials and 1,850 meditation trials were registered on WHO clinical trials registry platforms. India led the global ranking in yoga trials, with the USA, Australia-New Zealand, Iran, the UK, and Japan following in that order

(refer to Table 4). Specifically, India accounted for 59.9% of the yoga trials compared to the USA's 28.8%. For meditation, however, the USA dominated with 58% of the trials, followed by Iran at 6.8%, the UK at 4.1%, and India at 17.6%.

**Table 4. Clinical trials registered on WHO listed clinical trial registries**

**Fig. 6. Distribution of Trials on yoga Country-wise.****Figure 7: Distribution of trials on Meditation country-wise (www.ISRCTNregistry.com).**

## Quality of Evidence

Robust Level I evidence for yoga interventions is currently confined to two areas: cancer-related fatigue and meditation for anxiety and depression in oncology patients, applications now embedded in select clinical guidelines. Beyond these, Cochrane reviews suggest generally mild-to-moderate benefits for yoga across a variety of conditions. In total, 58 systematic reviews of yoga (encompassing 6,281 primary studies) and 29 reviews of meditation (5,302 studies) have been published, alongside 7 yoga review protocols and 1 on meditation.

Safety reporting remains sparse: adverse events were documented in only three yoga trials, half of the reviews explicitly noted no harm, and the remainder did not address safety. Methodological

quality is mixed: 32 percent of studies were rated low risk of bias, 18 percent moderate, 22 percent high, 12 percent inconclusive, and 16 percent unassessed.

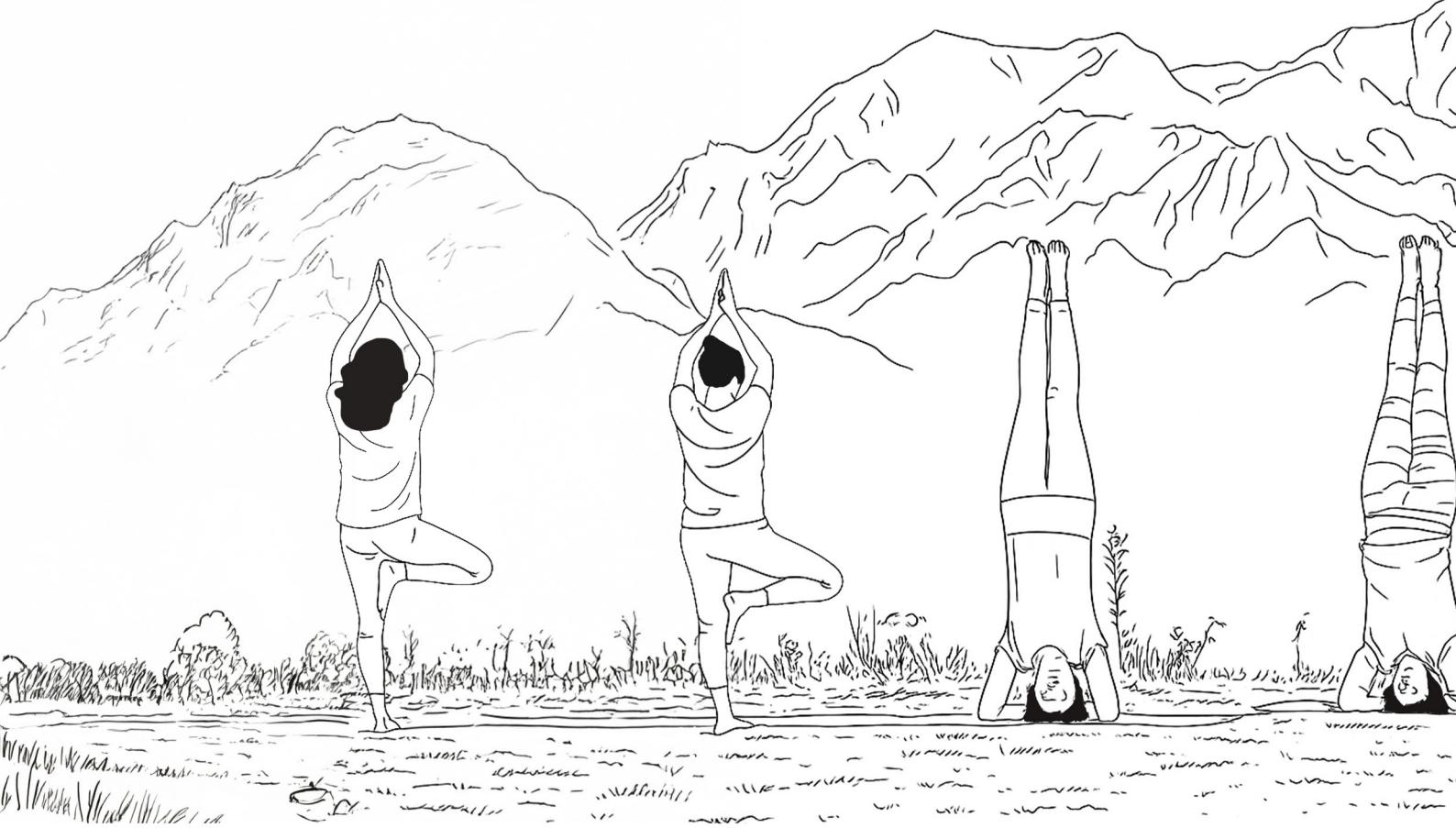
Efficacy outcomes vary: 34 percent of reviews identified mild benefits, 32 percent moderate benefits, 14 percent no benefit, and 20 percent were inconclusive. These findings underscore an urgent need for large-scale, high-quality randomised controlled trials with standardised intervention protocols and systematic safety monitoring. Strengthening the evidence base will be critical to fully integrating yoga and meditation as credible, evidence-based options within mainstream clinical care.

**Table 5. Number of articles and reviews on yoga and meditation on the Cochrane database**

S. No	Category	Cochrane Reviews	Cochrane Protocols	Trails Cochrane
1	Yoga	58	8	6281
2	Meditation	29	0	5302

Since the launch of the IDY research momentum has shifted dramatically. Compared to pre-2014 baselines, yoga-related clinical trials have risen by about 119.4%, and the average annual number of yoga publications has jumped roughly 12.5-fold. These two indicators, surging trial registrations and exponential publication growth, signal a deepening commitment from medical professionals and yoga scholars to rigorously

explore and validate yoga's applications. The uptick in peer-reviewed studies also reflects greater research investment, driven by public grants and private endowments. As this expanding evidence base solidifies yoga's credibility and health benefits, it paves the way for its seamless integration into mainstream healthcare alongside conventional Western medicine.

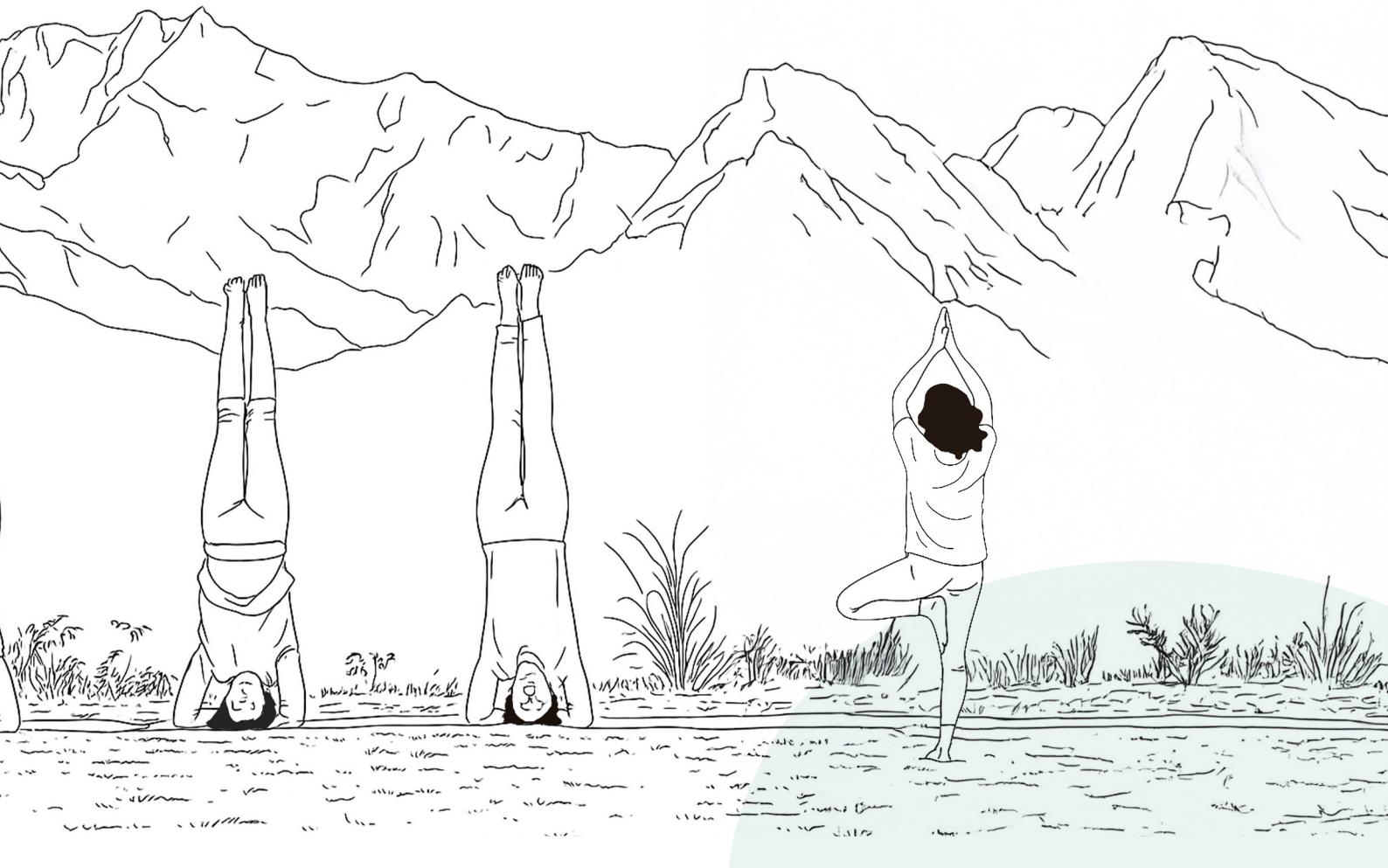


## CHAPTER 03

# Yoga Policies, Programs, Initiatives

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Under the banner “Yoga for Self and Society,” the celebration brought together more than 7,000 participants, including Prime Minister Narendra Modi and was broadcast worldwide on Doordarshan



## 3.1 International Day of Yoga

In 2024, the 10<sup>th</sup> annual celebration of IDY set a new standard for reach and resonance. Under the banner “Yoga for Self and Society,” the celebration brought together more than 7,000 participants, including Prime Minister Narendra Modi and was broadcast worldwide on Doordarshan. Beyond its symbolic value, IDY has matured into a vehicle for policy alignment, inter-ministerial collaboration, and broad-based outreach. At the United Nations Headquarters in New York, India showcased yoga not merely as a fitness regimen but as a universal ethos echoing key SDGs Good Health and Well-being (SDG 3), Quality Education (SDG 4), and Responsible Consumption and Production (SDG 12).

Since its inaugural 2015 celebration, which garnered participation in 192 countries, secured 177 UN co-sponsors (a record for any resolution of its kind), and set Guinness World Records for both the largest yoga class and widest nationality representation, IDY’s impact has only deepened. By 2024, smaller nations across Europe, Asia, and Africa reported annual upticks of 2-7% in regular practitioners. Landmark achievements that year included 2.593 million online pledges from Uttar Pradesh (Asia Book of Records) and 1,946 healthcare professionals practicing yoga at PGIMER, Chandigarh.

Building on this momentum, the Yoga Sangam Portal was introduced in 2025 to coordinate synchronized mass demonstrations across 100,000 Indian locales and launch ten "Signature Events" from global flagship performances (Yoga Bandhan) to eco-wellness drives (Harit Yoga) and healthcare integrations (SamYogam).

Early countdown festivities in Delhi, Bhubaneswar, and Nashik underscore a decentralized yet unified campaign, reaffirming India's commitment to making IDY a force for social harmony and environmental stewardship. As IDY evolves into a living dataset tracking demographics, institutional partnerships, and health outcomes, it offers a powerful platform for research, collaboration, and the further embedding of yoga within global well-being frameworks.



## 3.2 Common Yoga Protocol

On December 11, 2014, the United Nations General Assembly (UNGA) made history by unanimously adopting a resolution to establish June 21 as IDY. This landmark decision, co-sponsored by a record-breaking 177 countries, signified global recognition of yoga's profound contributions to health, well-being, and harmony.

The resolution underscored yoga's holistic approach to physical, mental, and spiritual wellness. As global interest in yoga expanded, the need for a standardized, accessible practice format became essential, particularly for beginners and large-scale public events.

To meet this demand, the Government of India's Ministry of AYUSH developed the Common Yoga Protocol (CYP), a structured 45-minute sequence incorporating asanas, pranayama, meditation, and chanting. Designed with input from leading yoga

institutions and experts, the CYP ensures safe, inclusive, and beginner-friendly participation. It serves as a universal guide that enables people of all ages and backgrounds to experience yoga's transformative benefits.

### Key Features of the CYP:



#### Inclusivity:

Adaptable for all age groups and physical capabilities



#### Scientific Foundation:

Rooted in both classical yogic wisdom and modern clinical research



#### Standardization:

Provides a consistent framework for community programs and academic research

**The CYP offers a structured sequence of 12 yoga asanas, a warm-up, pranayama techniques, and concluding meditation.** This approach makes yoga simple and accessible, allowing even beginners to practice safely.

It emphasizes health benefits such as increased flexibility, stress relief, and improved mental clarity while fostering global outreach, serving as the core practice for IDY events worldwide.

Grounded in scientific validation, the CYP has been integrated into government initiatives, schools, and institutional wellness programs. It is used extensively in mass yoga demonstrations, particularly on IDY, enabling millions across the globe to practice yoga synchronously. By unifying diverse yoga styles, it ensures clarity, consistency, and ease of participation.



Beyond being a practical guide, the CYP plays a crucial role in preserving the authenticity of India's traditional yoga teachings while making them globally accessible. Distributed in multiple languages through booklets, videos, and mobile apps, it extends yoga's reach across diverse communities. Encouraging daily practice, the CYP fosters yoga as a lifelong habit, standing as more than just a routine—it is a symbol of unity in diversity, reinforcing yoga's global relevance and profound impact on human well-being.

## 3. Capacity Building in Yoga

The Yoga Certification Board (YCB), established by India's Ministry of AYUSH, sets and enforces national standards for yoga professionals offering tiered certifications for Yoga Protocol Instructors, Wellness Instructors, Teachers, and Therapists. By June 2024, YCB had accredited over 100 training institutions in India and abroad, ensuring consistent quality and credibility.

In parallel, the Ministry of Skill Development and Entrepreneurship's Skill India Mission has trained more than

**135,000** professionals, embedding yoga into the nation's broader human-resource and preventive-healthcare strategies (Ministry of AYUSH, 2024).

Several institutions exemplify this capacity-building ecosystem:



**KAIVALYADHAMA**  
Where Yoga tradition and Science meet

### Kaivalyadhama Yoga Institute & Research Centre, Lonavala

A pioneer since 1956, Kaivalyadhama integrates traditional yoga with modern medicine through initiatives like PROJECT ANAND (a yoga-based cancer-care program) and rigorous scientific research. Offering diplomas through doctoral programs, its case studies on fibromyalgia, insomnia, and post-COVID recovery highlight yoga's preventive and therapeutic potential.



LAKSHMIBAI NATIONAL INSTITUTE  
OF PHYSICAL EDUCATION  
North East Regional Centre, Guwahati

### Lakshmibai National Institute of Physical Education (LNIPE), Gwalior

Through its Department of Yogic Science, LNIPE delivers grassroots camps, webinars, and school-based yoga curricular.



### Morarji Desai National Institute of Yoga (MDNIY), New Delhi

Under AYUSH, MDNIY provides undergraduate, postgraduate, diploma, and certificate courses in yoga science and therapy, training instructors for both public and private sectors.



### Swami Vivekananda Yoga Anusandhana Samsthana (S-VYASA), Bengaluru

A deemed university renowned for evidence-based research, integration of yoga into modern medicine, and global collaborations.



### Central Council for Research in Yoga and Naturopathy (CCRYN)

The apex research body that coordinates training dissemination, partners with state-level institutes, and organizes large-scale public programs.



### Dev Sanskriti Vishwavidyalaya, Haridwar

A leader in yogic academia, it has awarded 99 Ph.D. degrees and numerous master's dissertations since IDY's inception, employing diverse methodologies to study stress management, chronic disease prevention, and the psychosomatic benefits of yoga.

Embracing innovation, the Government of India and Startup India co-launched the YogaTech Challenge 2024, spurring AI-powered posture-correction systems, VR-enabled meditation tools, and biometric monitors. CCRYN has prototyped eco-friendly, high-grip yoga mats.

Digital platforms like the Namaste Yoga App and the Bhuvan Yoga Application, used by 1.39 million participants across 15 countries during IDY 2024 deliver certified modules, track performance data, and facilitate feedback, thereby globalizing India's yoga pedagogy (Ministry of AYUSH, 2024).





## CHAPTER 04

# Yoga in Practice

## ■ Health Systems

In the wake of IDY 2015, India's Government rolled out 150 Swami Vivekananda District Yoga Health Centres alongside more than 12,500 AYUSH Health and Wellness Centres nationwide.

Even amid the COVID-19 pandemic, the launch of tele-yoga catalyzed a 300% surge in yoga participation both domestically and abroad, and yoga therapy emerged as a cornerstone of post-COVID rehabilitation (Manjunath, 2023).

The Ministry of AYUSH and its affiliates now regularly host workshops, mahotsavas, and seminars in schools, government offices, and hospitals to tackle stress, boost workplace



wellness, and advance public health literacy. Signature initiatives include the “Meditation for a Healthy and Happy Life” series with the Brahma Kumaris, multi-day free meditation camps and yoga clinics at LNIPE Gwalior, and CYP sessions tailored for railways, armed forces, and educators. These programs seamlessly blend yoga’s spiritual roots with its clinical benefits, driving a shift toward community-centric healthcare delivery.

On the innovation front, India has integrated yoga with cutting-edge tech-wearables that track posture, heart rate, and respiration, and ISRO’s “Yoga for Space” project under Gaganyaan, which explores yoga’s role in astronaut health. The Ministry of Health and Family Welfare, in partnership with AIIMS, has formally recognized yoga as a public health intervention, deploying certified yoga therapists across AYUSH and state health schemes to integrate preventive and therapeutic practices with conventional medicine.

A new wave of research and interventions is focusing on palliative care, mental health, and women’s health issues like PCOS and prenatal anxiety, underscoring yoga’s growing inclusivity and its expanding role in holistic therapy (Ministry of AYUSH, 2024).

## 4.2 Education

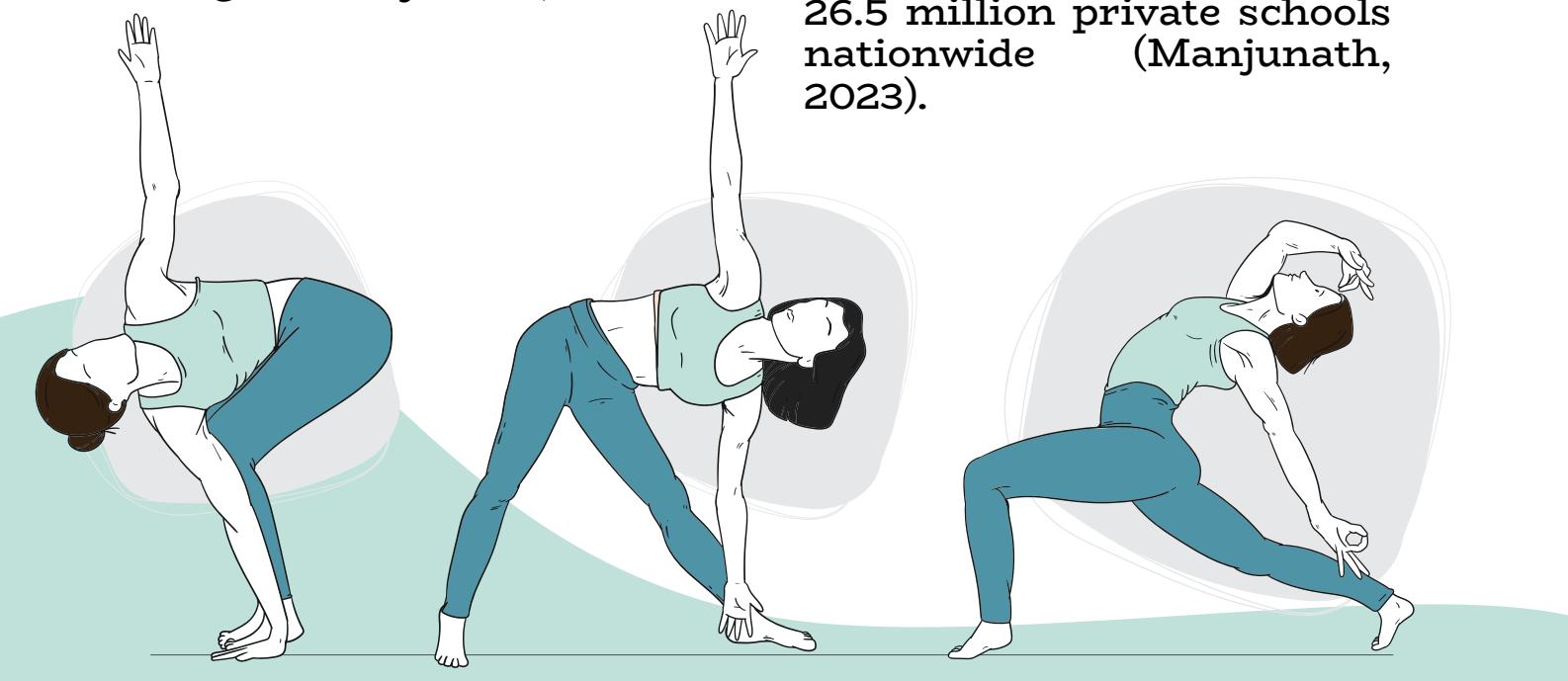
Rooted in ancient Indian wisdom, yoga education nurtures students' holistic growth bolstering physical fitness, mental hygiene, emotional balance, moral integrity, and higher consciousness. When introduced systematically from grades II through IX, it fosters self-awareness, discipline, and resilience. Schools that integrate yoga report sharper concentration, greater stamina, and improved well-being, positively impacting academic performance, athletic prowess, and social engagement. Through hands-on learning, students embody yoga's principles under the guidance of skilled instructors, mentors who deliver progressive, age-appropriate curricula focused on real-world behavioral outcomes.

**Since the first IDY in 2015, India has seen a surge in yoga higher-education enrolments, launched the world's first integrated undergraduate program in Naturopathy and Yogic Sciences, and recorded a 40% increase in yoga and naturopathy colleges (Manjunath, 2023).**

As an educational tool, yoga instills discipline, focus, ethical conduct, and self-awareness - cornerstones of responsible citizenship. Globally, 9,000 US schools now offer yoga with over 5,400 certified instructors, while European initiatives such as the RYE program and the Yoga in Daily Life system extend yoga's reach across France, the UK, Italy, Belgium, and Croatia.

Empirical research underscores yoga's impact: younger students gain stress-management skills; adolescents report heightened self-awareness and calm; and children with ADHD exhibit sustained gains in attention, organizational ability, sleep quality, and EEG markers (Daniela et al., 2021). Reflecting these benefits, NCERT's *Yoga: A Healthy Way of Living* has made yoga a compulsory component of India's secondary 'Health and Physical Education' curriculum, offering illustrated units on asanas, pranayama, kriyas, and meditation to encourage daily practice.

**Post-IDY, yoga education has been adopted by 1,252 Kendriya Vidyalayas, over 10.2 million state schools, and 26.5 million private schools nationwide (Manjunath, 2023).**



By complementing traditional physical education and competitive sports training with mental discipline and lifelong well-being, yoga enriches the entire educational experience. To realize its full potential, curriculum developers, educators,

trainers, and students must collaborate to overcome practical implementation challenges—transforming yoga from an extracurricular add-on into a core, transformative force that prepares young people not just for exams, but for life.

## 4.3 Yoga and Productivity

Extensive research confirms that yoga powerfully reduces everyday stress, strengthens coping skills, and counteracts stress's harmful effects (CCRYN, 2024). It regulates mood, alleviates anxiety, and cultivates positive emotions and resilience in the face of stressors (Pasco et al., 2015). In professional settings, these benefits translate into sharper focus, sustained attention, and higher performance under pressure (Higgins et al., 2005). Yoga's emphasis on self-compassion also nurtures healthier workplace relationships and team cohesion (CCRYN, 2024).

For desk-bound workers, targeted yoga practices relieve repetitive-strain injuries neck and back pain, headaches, and carpal tunnel syndrome and ease computer-vision symptoms, notably improving software professionals' comfort and quality of life (Garfinkel et al., 2005; Telles et al., 2006). Moreover, yoga sharpens executive functions—working memory, visuospatial skills, and mental alertness—benefits especially evident among military personnel (CCRYN, 2024).

Empirical studies underscore yoga's impact on organizational health. Over six months, employees who practiced yoga missed only two workdays for musculoskeletal issues versus 43 days under standard care (Hartfiel et al., 2017). A randomized trial at Indian Telephone Industries in Rae Bareli found significant gains in health, morale, motivation, and productivity at both individual and corporate levels (Strijk et al., 2013).

By holistically addressing stress, physical discomfort, cognitive demands, and interpersonal well-being, workplace yoga programs emerge as a strategic imperative—boosting employee health while driving organizational performance.

**Over six months, employees who practiced yoga missed only two workdays for musculoskeletal issues versus 43 days under standard care (Hartfiel et al., 2017).**



## CHAPTER 05

# Challenges in the Current Landscape

India faces multiple structural, scientific, and systemic barriers to realizing yoga's full potential as a health-promoting, research-driven discipline:



## High-Priority Challenges



### Research Rigor & Translation

- Indian yoga studies are underrepresented in high-impact journals and often suffer from methodological weaknesses.
- There's an urgent need for robust clinical trials, longitudinal cohorts, open-access data repositories, and stronger translational pipelines that move findings into real-world practice.



### Urban–Rural Disparities

- Certified instructors and infrastructure concentrate in cities, leaving rural and remote regions underserved despite government outreach.

## Siloed Medical Systems

- Allopathic and AYUSH systems operate under separate regulators with minimal clinical integration.
- Patients face conflicting advice and fragmented care pathways, underscoring the need for unified accreditation standards and shared integration principles.

# Medium-Priority Challenges

## Uneven Training & Clinical Skills Gap

- While YCB and MDNIY have standardized certifications, many informal centers lack consistent pedagogy.
- Core clinical competencies are only covered by BNYS and MD (Yoga) programs, and there's no centralized registry of certified practitioners.

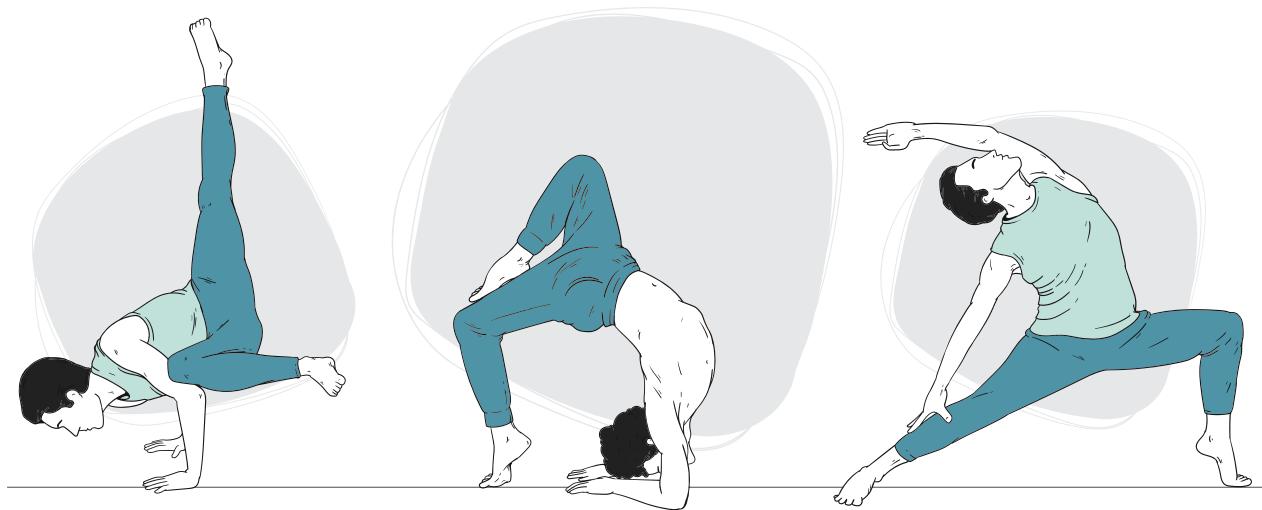
## Policy Fragmentation & Funding Shortfalls

- Yoga features in wellness and education policies, but inter-ministerial coordination is weak.
- Dedicated research and community-program funding remains a negligible portion of the health budget.

## Commodification

- Digital trends, fitness studios, and influencer marketing have reduced yoga to a pose-centric, aesthetic exercise, diluting its philosophical foundations.





## Low-Priority Challenges

### Limited Global Collaboration

- Indian institutions are peripheral in international integrative-health networks.
- Structured partnerships, co-authored studies, and a centralized digital repository would boost India's research visibility and leadership.

### Neglected Qualitative & Contextual Research

- The focus on quantitative outputs overlooks practitioners' lived experiences, cultural insights, and long-term perceptions.
- Rigorous, independent qualitative evaluations are needed to guide future outreach and policy.



## CHAPTER 06

# Opportunities and Suggested Way Forward

Although yoga's immediate physical and mental benefits are well documented, its broader promise—in public health, rigorous research, education, and global diplomacy—remains largely untapped. This strategic roadmap proposes ten action areas to institutionalize yoga as a sustainable public good:



### Strengthen Scientific Rigor with Longitudinal and Comparative Studies

- Invest in decade-long cohorts tracking yoga's effects on chronic disease, aging, and mental health.
- Compare different traditions (Iyengar, Hatha, Ashtanga), modern adaptations, and international variants.
- Benchmark yogic therapies against other systems (Ayurveda, physiotherapy, psychotherapy) to inform integrative health models.



### Balance Metrics with Meaning through Qualitative Research

- Document practitioners' emotional, social, and spiritual journeys—urban vs. rural, youth vs. elderly, secular vs. spiritual.
- Include insights from long-term sadhakas, gurus, and traditional lineages to enrich clinical data.



## Build a Centralized Digital Yoga Repository

- Under CCRYN and AYUSH, launch an Ayush-Grid/NDHM-linked platform hosting peer-reviewed studies, manuscripts, trial data, and practice guidelines.
- Ensure open access, multilingual translation, and ongoing peer review.



## Standardize Without Diluting Authenticity

- Partner with WHO, International Yoga Federation, and IAYT to craft a Global Yoga Research Framework.
- Define core protocols that respect traditional lineages and allow adaptations for vulnerable groups (elderly, children, women, NCD patients).



## Drive Institutional Convergence and Multidisciplinary Collaboration

- Unite AIIMS, IITs, NIMHANS, S-VYASA, MDNLY, and private partners.
- Integrate neuroscience, endocrinology, psychology, data science, and sociology using biomarkers, fMRI, and AI/ML analytics.



## Accelerate Digital Transformation and Ed-Tech Innovation

- Leverage AI/ML to mine global datasets, predict outcomes, and tailor yoga regimens.

- Use VR, gamification, and mobile apps (e.g., Namaste Yoga) to engage youth, preserving philosophical depth.



## Embed Yoga in Education and Certification Frameworks

- Expand NCERT and NEP 2020 initiatives across schools, universities, and corporate training with age- and group-specific modules:
  - Children:** Playful, story-driven sessions for motor and emotional skills
  - Women:** Prenatal/postnatal practices
  - Elderly:** Gentle routines for mobility and mental clarity
  - Workforce:** Stress-management and leadership tools
- Establish a national accreditation board for curricula, training hours, and licensure.



## Design Inclusive, Culturally Sensitive Programs

- Frame yoga in secular settings as mindfulness and well-being; emphasize Ahimsa, Satya, and Dharma in spiritual contexts.
- Honor lineage while adapting to modern needs to prevent appropriation.



## Integrate Yoga into Preventive and Community Health

- Deploy yoga in primary health centers, schools, workplaces, and public parks to manage hypertension, obesity, diabetes, and mental health.
- Train community instructors to bridge urban-rural healthcare gaps.



## Preserve Yoga's Spiritual Essence

- Safeguard self-realization practices—detachment, discipline, contentment, and Seva—within public health models.
- Embed ethical values and lifestyle guidance to deliver measurable outcomes without commercializing or diluting yoga's transformative core.



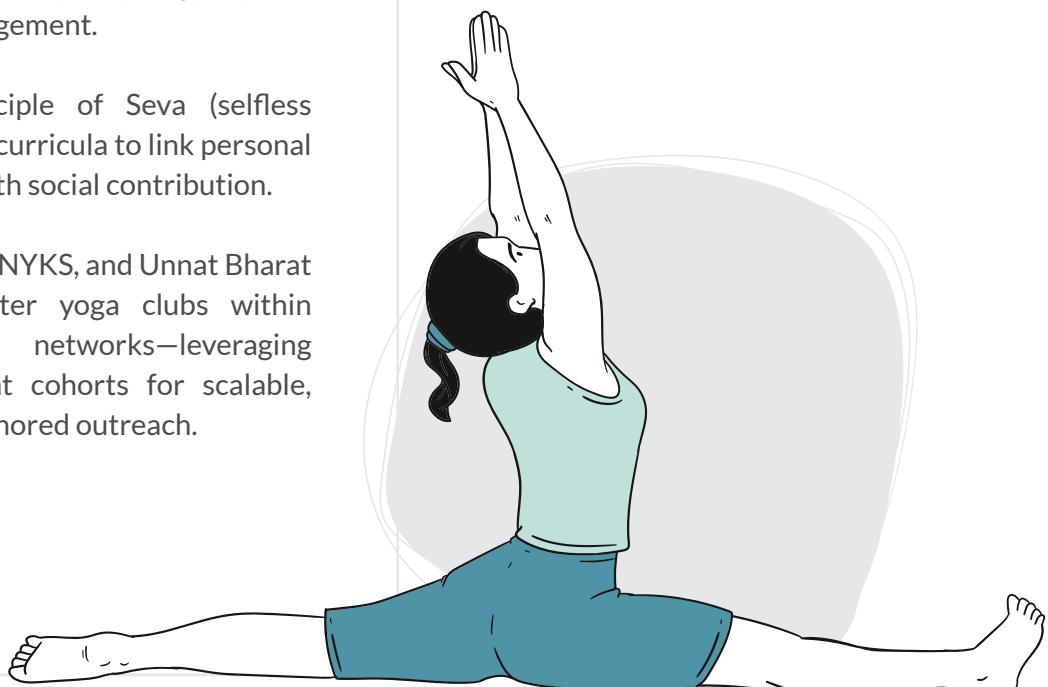
## Empower Youth Leadership and Service

- Position yoga as a vehicle for community service, environmental stewardship, and mental-health advocacy, inspiring purpose-driven youth engagement.
- Embed the principle of Seva (selfless service) into yoga curricula to link personal transformation with social contribution.
- Partner with NSS, NYKS, and Unnat Bharat Abhiyan to charter yoga clubs within existing service networks—leveraging motivated student cohorts for scalable, institutionally anchored outreach.



## Establish India as the Global Epicenter for Yoga Research and Education

- Host annual International Yoga Research Summits to convene leading scholars, practitioners, and policymakers.
- Fund global PhD and postdoctoral fellowships in yoga science, plus multilingual, cross-cultural training programs to spread India's methodological rigor and philosophical depth.
- Propose a UNESCO-endorsed "Yoga Knowledge Heritage Platform"—a multilingual digital archive of research, protocols, and classical texts.
- Form an International Yoga Research Council, backed by the Ministries of External Affairs and AYUSH and UNESCO partners, to steer global standards, collaborations, and innovation in integrative health.



# CHAPTER 07

# Conclusion

Since the UN proclaimed June 21 as the IDY in 2015, yoga has burst beyond its traditional roots to become a truly interdisciplinary science. Over the past decade, rigorous randomised controlled trials, longitudinal cohorts, and detailed case studies have validated yoga's efficacy in respiratory disorders (COPD, asthma), mental-health conditions (anxiety, depression, PTSD), and chronic disease management. This scientific awakening has propelled yoga from cultural heritage into mainstream clinical practice—driving policy attention, institutional investment, and grassroots adoption.

**Our scientometric analysis underscores this seismic shift: post-2014 yoga publications have surged by over 120% globally, with India alone achieving a nearly 195% rise in research output.**

Initiatives like the CYP have standardized practice worldwide, amplifying yoga's reach in schools, hospitals, and communities. Yet despite these gains, research remains fragmented—trapped in thematic silos, with limited interdisciplinary or international collaboration and an uneven dialogue between ancient wisdom and modern methodology.

To elevate yoga as an evidence-based public good, we must boldly diversify study areas, incentivize multicentric trials and high-impact publications, and weave traditional yogic principles into contemporary research frameworks. Strengthening institutional capacities, launching open-access data repositories, and aligning investigation with national health priorities will sharpen our evidence base and deepen yoga's global impact.

As India positions itself as the cradle of yoga and a global hub for integrative medicine, now is the moment to craft—and fund—a National Yoga Research Strategy. By uniting public-health goals, international partnerships, and a robust educational and clinical ecosystem, we can secure yoga's next chapter: a universally accessible, scientifically validated pathway to lifelong health and harmony.



# References

- AIIMS. (n.d.). Center of Integrative Medicine. [https://www.aiims.edu/en/news/259-cimr\\_19.html](https://www.aiims.edu/en/news/259-cimr_19.html)
- Bhogal, R. (2014). Ninety-year-old yoga research legacy on the web. *Yoga Mimamsa*, 46(1), 1.
- Burton, A. (2014). Should your patient be doing yoga? *The Lancet Neurology*, 13(3), 241–242.
- Büssing, A., Michalsen, A., Khalsa, S. B. S., Telles, S., & Sherman, K. J. (2012). Effects of yoga on mental and physical health: A short summary of reviews. *Evidence-Based Complementary and Alternative Medicine*, 2012, Article ID 165410. <https://doi.org/10.1155/2012/165410>
- Central Council for Research in Yoga & Naturopathy. (2022). White Paper on systematic literature review of yoga research till 2022.
- Chakraborty, S. (2021). Effect of yogic intervention in psychological wellbeing (parental guilt, psychological distress, anxiety, and self-esteem) of working mothers [Master's dissertation, Swami Vivekananda Yoga Anusandhana Samsthana].
- Cramer, H., Lauche, R., Langhorst, J., & Dobos, G. (2013). Yoga for depression: A systematic review and meta-analysis. *Depression and Anxiety*, 30(11), 1068–1083. <https://doi.org/10.1002/da.22166>
- Daniela, C., et al. (2021). The role of yoga in education. *Metodički Obzori*. <https://www.researchgate.net/publication/356147572>
- Dutta, A., Aruchunan, M., Mukherjee, A., Metri, K. G., Ghosh, K., & Basu-Ray, I. (2022). A comprehensive review of yoga research in 2020. *Journal of Integrative and Complementary Medicine*, 28(2). <https://doi.org/10.1089/jicm.2021.0420>
- Gautam, V. (2024, December 29). Meditation and yoga: India's growing soft power on the global stage. Chanakya Policy & Research Foundation. <https://chanakyapolicyresearch.com/meditation-and-yoga-indias-growing-soft-power-on-the-global-stage/>
- Green, E. E., Green, A. M., & Walters, E. D. (1979). Biofeedback for mind/body self-regulation: Healing and creativity. In *Mind/Body Integration* (pp. 125–139).
- Indian Institute of Yogic Science & Research. (n.d.). Newsletter. Foreword by Sanyasi Yogeshwar.
- Jevning, R., Wallace, R. K., & Beidebach, M. (1992). The physiology of meditation: A review. *Neuroscience & Biobehavioral Reviews*, 16(3), 415–424.
- Johns Hopkins Medicine. (n.d.). Integrative Medicine and Digestive Center. [https://www.hopkinsmedicine.org/integrative\\_medicine\\_digestive\\_center/index.htm](https://www.hopkinsmedicine.org/integrative_medicine_digestive_center/index.htm)
- Kumar, S. G. P., & Kumar, A. (2023). The history and origin of the yoga system. *International Journal for Multidisciplinary Research*, 5(3). <https://www.ijfmr.com/papers/IJFMR23032908>
- Kothari L K, Bardia A, Gupta OP. The yogic claim of voluntary control over the heart beat: an unusual demonstration. *American Heart Journal*. 1973 Aug;86(2):282-4. <https://www.sciencedirect.com/science/article/pii/0002870373902603?via%3Dihub>
- Mayo Clinic. (n.d.). Integrative Medicine and Health. <https://www.mayoclinic.org/departments-centers/integrative-medicine>
- Manjunath, N. K. (2023). The transformative impact of the International Day of Yoga. *Journal of Ayurveda and Integrative Medicine*, 14(3), 100752. <https://doi.org/10.1016/j.jaim.2023.100752>
- Ministry of AYUSH. (2024). International Day of Yoga 2024 report.
- Ministry of AYUSH. (n.d.-a). Concept note on National Centre for Ayurveda, Yoga and Integrative Medicine.
- Ministry of AYUSH. (n.d.-b). Common Yoga Protocol. <https://www.mea.gov.in/images/pdf/common-yoga-protocol.pdf>
- National Council of Educational Research and Training. (2025). *Yoga: A healthy way of living – Secondary stage*. <https://ncert.nic.in/dess/pdf/tiyhwls1.pdf>

- NIMHANS. (2017). Samatvam – Yoga and mental health. <https://nimhansyoga.in/wp-content/uploads/2017/11/Samatvam-January-2017.pdf>
- Osher Center for Integrative Medicine – Harvard Medical School. (n.d.). <https://oshercenter.org/>
- Padoux, A. (2006). Joseph S. Alter, Yoga in modern India: The body between science and philosophy. *Archives de Sciences Sociales des Religions*, (136), 115–283.
- Patala, N. K. (2019). Importance of yoga & meditation in education. *International Journal of Research in All Subjects in Multi Languages*, 7(1). [https://www.raiijmr.com/ijrsml/wp-content/uploads/2020/01/IJRSML\\_2019\\_vol07\\_issue\\_1\\_Eng\\_18.pdf](https://www.raiijmr.com/ijrsml/wp-content/uploads/2020/01/IJRSML_2019_vol07_issue_1_Eng_18.pdf)
- Patel, C. H. (1973). Yoga and biofeedback in the management of hypertension. *The Lancet*, 302(7837), 1053–1055.
- Press Information Bureau. (2022, November 12). India's Ayush sector to increase its market share to USD 23 billion globally by 2023: Sarbananda Sonowal. <https://pib.gov.in/PressReleasePage.aspx?PRID=1875479>
- Press Information Bureau. (2021). International Day of Yoga: Background, global outreach, and national participation. Government of India. <https://static.pib.gov.in/WriteReadData/specificdocs/documents/2021/sep/YogaDayEng-05.pdf>
- Press Information Bureau. (2025, May 2). Yoga Sangam embodies global solidarity for health: a powerful movement uniting humanity through Yoga and beyond: Shri Prataprao Jadhav. Government of India. <https://www.pib.gov.in/PressReleseDetailm.aspx?PRID=2126073>
- Singh, B., & Saras, Y. (2022). Yoga and health. *International Journal of Advanced Research in Science, Communication and Technology*, 2(1).
- Sinha, A., et al. (2021). Integrating yoga with education in the modern schooling system: A theoretical model based on ancient knowledge and modern research. *Yoga Mimamsa*, 53(1). [https://journals.lww.com/yomi/fulltext/2021/53010/integrating\\_yoga\\_with\\_education\\_in\\_the\\_modern.9.aspx](https://journals.lww.com/yomi/fulltext/2021/53010/integrating_yoga_with_education_in_the_modern.9.aspx)
- Telles, S., Gerbarg, P. L., & Kozasa, E. H. (2015). Physiological effects of mind and body practices. *BioMed Research International*, 2015, Article ID 497961. <https://doi.org/10.1155/2015/497961>
- The Yoga Institute. (2025). Aims and objectives of yoga education. <https://theyogainstitute.org/aims-and-objectives-of-yoga-education>
- Wenger, M. A., & Bagchi, B. K. (1961). Studies of autonomic functions in practitioners of yoga in India. *Behavioral Science*, 6, 312–323.
- Wenger, M. A., Bagchi, B. K., & Anand, B. K. (1961). Experiments in India on 'voluntary' control of the heart and pulse. *Circulation*, 24, 1319–1325.
- Wallace, R. K. (1970). Physiological effects of transcendental meditation. *Science*, 167(3926), 1751–1754.
- Wallace, R. K., Dillbeck, M., Harrington, B., et al. (1982). The effects of transcendental meditation and TM-Sidhi program on the aging process. *International Journal of Neuroscience*, 16(1), 53–58.
- Yoga Mimamsa. (2017). A perspective on yoga research: Past to present. <https://ym-kdham.in>



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