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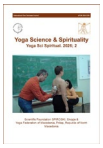

Scientific Yoga, Historical Legacy, and the Future of Yoga Therapy in North Macedonia: Reflections from the Editorial of Yoga Science & Spirituality

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Abstract

BACKGROUND: The second issue of Yoga Science & Spirituality continues the journal's mission of promoting Scientific Yoga and Yoga Therapy through historical reflection, scholarly discussion, and contemporary perspectives.

AIM: To highlight influential personalities, institutions, publications, and contributions that have shaped the development of Scientific Yoga and Yoga Therapy.

METHODS: This issue features an editorial, an interview, scientific articles, a journal analysis, and a profile of a yoga institution, providing historical, educational, and professional perspectives on Scientific Yoga and Yoga Therapy.

RESULTS: The contributions featured in this issue reflect the continuing development of Scientific Yoga and highlight its relevance to health promotion, education, and integrative healthcare.

CONCLUSION: By reflecting on the past, recognizing those who have contributed to the field, and encouraging ongoing dialogue, this issue aims to support the ongoing advancement of Scientific Yoga and Yoga Therapy while bringing together scientific understanding and traditional yogic wisdom.

Introduction

With the release of the second issue, the magazine Yoga Science & Spirituality has now became a reality.

I would like to believe that through this publication we are contributing to the development of a culture that values Scientific Yoga, as well as other fields of integrative and complementary medicine that have long sought recognition within the broader scientific and healthcare communities [1], [2], [3], [4].

In this issue

In this issue, we begin with an exploration of the history of Scientific Yoga. I believe we are at an important moment when it is essential to document the key milestones in its development, along with the individuals whose dedication and vision helped shape this field. Special recognition should be given to those who are no longer with us. Honoring their memory and acknowledging their contributions is an important part of the yogic tradition and culture.

I would also like to take this opportunity to express my deepest condolences on the passing of my dear friend, Dr. Vasilije Tomanoski, who left us unexpectedly in March. Among the many memories we shared, our journey to the Fifth World Congress, "Yoga and Holistic Medicine ", held in Annecy, France, in May 1994, remains unforgettable.

The Portraits section of this issue is dedicated to Dr. M. V. Bhole, one of the most distinguished figures in the history of Scientific Yoga. We were privileged to enjoy a long-standing friendship with him and also we had the opportunity to meet him at three World

Congresses, experiences that greatly enriched our understanding of yoga research and practice [5].

The interview is dedicated to a remarkable individual, Dr. Amalia Parousi, from Athens, Greece—a physician and yoga teacher since the mid-1970s. Her name is closely associated with the scientific approach to yoga in the Republic of North Macedonia, and she has played a pivotal role in its development and recognition.

Dr. Parousi has been my first assistant and long-time collaborator. Over the years, her contribution has been invaluable, particularly in the education and training of yoga instructors, the integration of medical knowledge into yoga teaching, and the unwavering moral support she has selflessly provided since 1978.

The interview was conducted by Vancho Taseski, Senior Professor at the School for Teacher Training. His professional collaboration with Dr. Parousi began in 1980 and has continued ever since.

I am particularly pleased that this issue of the journal features a highly interesting study by Dr. Mukesh Jain from India, a long-standing friend and respected colleague whom I have known for more than three decades.

Over the years, our friendship has been strengthened through numerous meetings at World Congresses on Yoga and Ayurveda, and we have also had the privilege of hosting him in Ohrid, Skopje, and Athens. One memory stands out in particular: it was Dr. Jain who invited me to participate in a yoga workshop held at the auditorium of the University of Calicut during the VI World Congress on Yoga and Ayurveda in 1996, in Kozhikode, India. The workshop brought together several distinguished experts in the field, including Dr. Bhole, Dr. Gharote from India, Prof. Micheline Flak from France, Dr. Giorgio Barabino from Italy and many other prominent participants. It remains a memorable event and an important milestone in my professional journey.

In the section dedicated to notable publications in the field of scientific yoga, Tanja Dimova Abrasheva presents an analysis of *The Yoga Science*, a book by Divyansh Sharma published in 2025.

This important work is expected to make a valuable contribution to the continued development of knowledge, education, and professional practice in the fields of scientific yoga and yoga therapy. By offering contemporary insights and a research-based perspective, the book has the potential to further strengthen the understanding and application of yoga as a scientific discipline [1], [2], [3], [4].

The issue concludes with two insightful contributions by Anastasia A. Dojchinovska and Dr. Elena Petrushevska. Their articles highlight a distinguished journal and a renowned yoga center that have made a significant impact on the development of yoga in recent decades.

The first focuses on the *International Journal of Yoga Therapy*, a respected publication that has played an important role in advancing research and professional practice in the field [6], [7]. The second presents *Vivekananda Yoga Kendra* in Bangalore, an institution that has earned recognition for its longstanding contribution to yoga education, research, and community outreach [2], [3], [4]..

I would also like to mention that in December 1995 we had the opportunity to participate in the International Yoga Congress in Bangalore. Together with Dr. Blagoja Gjorgieski and Vancho Taseski, we visited the center and met our hosts: Dr. Nagendra, Dr. Nagaratna, and Prof. N. V. Raghuram.

During our stay, we had the opportunity to exchange views on the development of yoga in India as well as in the West. I especially remember the meeting and conversations with the spiritual guide of the center at that time, Prof. Shri Shastri, a man who deeply appreciated efforts to develop traditional yoga and to connect science with yoga in the Western context. As a representative of ancient Indian wisdom, he embodied a rare continuity between tradition and modern understanding.

It was precisely these meetings and conversations with Prof. Shri Shastri that inspired me to write *The History of Scientific Yoga*.

Perspective and development of yoga in North Macedonia

In the following discussion, I would like to present my perspective on certain developments that have had an impact on the field of yoga. One recent initiative is especially noteworthy.

The Ministry of Health of the Republic of North Macedonia is in the process of drafting amendments to the Law on Alternative Medicine. The proposed amendments seek to broaden the scope of recognized alternative practices by adding Reiki, Bach Flower Remedies, and Crystal Therapy to the areas already covered by the legislation.

Promoting yoga therapy

As strange as it may sound, yoga, which, although included in the old law, never found its rightful place both within alternative medicine and within the framework of official, classical medicine [1], [1], [2], [3], [4], [8]. Here, I am especially thinking of yoga therapy, although the level of scientific yoga and yoga therapy in North Macedonia has been present for 55 years. Top world-class scientists who have personal experience in yoga, who have participated in a series of research in state medical institutions in cooperation with a small number of yoga therapists, have come to significant results presented both at world medical congresses and at scientific yoga conferences. Among those

doctors who have distinguished themselves by promoting yoga, the following stand out: Dr. Josif Naumovski - cardiologist, Dr. Ilija Prangoski - cardiologist, Dr. Pavica Bogdanov – internist-phthysiologist, Prof. Dr. Zdravko Trojachanec – sports medicine, Prof. Dr. Mirko Spiroski - imunology, Dr. Vasilije Tomanoski- internist-nephrologist, Dr. Marjan Kotlar – cardiologist, Dr. Milena Ilieva Arsova – gastroenterologist, Dr. Stojan Kovaceski– nephrologist, Dr. Tode Klisheski – cardiologist, Slavica Ristanoska – psychologist, Dr.Ana Derebanova – internist-nephrologist, Julka Zdravkova - psychologist.

The list of individuals who have contributed to the development of yoga is extensive, and it is important to acknowledge them, at least from a historical perspective. As time passes, there is a risk that credit may be given to people who have made little or no positive contribution to the advancement of scientific yoga—or, in some cases, whose influence may even have been counterproductive.

I sincerely welcome the proposed expansion of the list of recognized alternative practices and hope that the time will soon come when scientific yoga and yoga therapy are also included. Such recognition would enable us to contribute not only to the wider application of yoga therapy but also to the development of qualified and competent professionals with appropriate education and training in scientific yoga [1], [2], [3], [4], [8].

This is particularly important when it comes to the formation of future regulatory bodies and expert committees. It is essential that key decisions regarding yoga and yoga therapy are made by individuals with relevant knowledge, expertise, and professional experience. Too often, influential positions are assigned to people who have limited understanding of yoga and even less familiarity with yoga therapy yet feel entitled to make decisions on matters of great significance.

Conclusion

Finally, I would like to emphasize that, as part of our editorial policy, we have adopted the principle that scientific papers and articles should be submitted directly to the Editorial Board by the authors themselves, provided that the work has not been previously published in another journal.

In closing, I wish you all a peaceful and pleasant summer.

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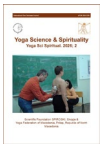

The Influence of Yoga on the Normal Psychophysical Growth of School-Age Children

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Abstract

BACKGROUND: Poor body posture reduced spinal mobility, and spinal deformities such as scoliosis are common among school-age children and may negatively affect physical development, breathing efficiency, and overall well-being. Yoga, through its integrated system of physical exercises, breathing techniques, relaxation, and body postures, has been proposed as a non-invasive method for improving musculoskeletal health and preventing postural abnormalities.

AIM: To evaluate the influence of a specialized yoga program on body posture, spinal mobility, spinal elasticity, and scoliosis in school-age children.

METHODS: A three-month specialized yoga course was conducted within the project "Application of Yoga in Improving the Psychophysical Development of Children in Primary Education." Thirty-two children aged 7–14 years participated in the initial assessment, while 22 completed the follow-up evaluation. The program included relaxation techniques, Vyayama exercises, Asanas, and Pranayama. Anthropometric measurements, postural assessments, and telemetric spinal evaluations using the Spinal Mouse device were performed before and after the intervention. Parameters assessed included spinal and pelvic mobility, body posture, spinal elasticity, and scoliosis severity.

RESULTS: Initial measurements revealed reduced spinal and pelvic mobility in a substantial proportion of participants, with 68.7% demonstrating incorrect posture and 84.4% showing signs of scoliosis. Following the yoga intervention, significant improvements were observed in spinal mobility and elasticity. The proportion of children with correct body posture increased from 31.3% to 68.2%, while good spinal flexion improved from 43.7% to 59.1% and good spinal extension from 50.0% to 54.5%. Improvements were also observed in thoracic, lumbar, pelvic, and whole-spine mobility. Children with mild scoliosis demonstrated notable improvement, whereas moderate and severe scoliosis showed limited response to the general yoga program.

CONCLUSION: The specialized yoga program significantly improved spinal mobility, elasticity, and body posture in school-age children. Regular practice of yoga techniques contributed to better musculoskeletal function, enhanced flexibility, improved breathing patterns, and positive effects on psychophysical development. Yoga appears to be an effective preventive and supportive therapeutic approach for postural disorders and mild scoliosis in children, although more targeted interventions may be required for moderate and severe spinal deformities.

Introduction

Proper growth and development during childhood depend largely on adequate physical activity, correct body posture, and the harmonious development of the musculoskeletal system. Modern lifestyles characterized by prolonged sitting, reduced physical activity, and improper ergonomic habits have contributed to an increasing prevalence of postural abnormalities, reduced spinal mobility, and spinal deformities among school-age children [1]. Impaired spinal flexibility and poor posture may lead to functional disturbances of the musculoskeletal and respiratory systems, increased fatigue, discomfort, and a reduced quality of life during growth and development [2].

The vertebral column plays a central role in maintaining body posture, balance, and movement. Adequate mobility of the thoracic, lumbar, and lumbosacral segments is essential for normal biomechanical function and for the prevention of postural disorders such as scoliosis, kyphosis, and lordosis. Early identification of reduced spinal mobility and the implementation of corrective physical activities

are therefore important components of preventive health care in childhood [3].

Yoga is a comprehensive system of psychophysical exercises that combines body positions (asanas), breathing techniques (pranayama), relaxation methods, and conscious movement practices. These techniques have been shown to improve flexibility, muscular balance, body awareness, respiratory function, and overall physical and mental well-being [1–3]. Regular practice of yoga exercises contributes to the balanced development of the musculoskeletal system, enhances spinal mobility, and promotes correct body posture through the strengthening and stretching of postural muscles [1], [2].

Specialized yoga programs designed for children emphasize age-appropriate movements and exercises that stimulate proper growth, increase joint mobility, and improve neuromuscular coordination. Through systematic practice, yoga may serve both as a preventive measure against postural deformities and as a supportive therapeutic approach for children who already exhibit postural irregularities [2], [3].

Therefore, the aim of this study was to evaluate the influence of a specialized yoga program on body posture and spinal mobility in school-age children using telemetric measurements obtained with the Spinal Mouse system. The study sought to determine whether regular practice of yoga techniques could contribute to improved spinal flexibility, enhanced postural alignment, and the prevention or reduction of spinal deformities.

Material and Methods

Within the framework of the project **“Application of Yoga in Improving the Psychophysical Development of Children in Primary Education,”** implemented by Yoga Society Shtip and supported by the Foundation for Local Community Development – Shtip, a specialized yoga course for children was organized over a period of three months.

The yoga course program was adapted to the age of the children and consisted of the following content:

RELAXATION TECHNIQUES – enable the release and relaxation of the body within a relatively short period of time, better mental organization and relaxation, as well as reduction of physical fatigue;

VYAYAMA – psychophysical exercises for conscious movement and stretching of all parts of the body, especially the spinal column, thereby improving elasticity, physical endurance, and stimulation for proper growth and development of the musculoskeletal system;

ASANAS – body positions that enable increased body elasticity as well as improved function of the internal organs;

PRANAYAMA – breathing techniques that increase respiratory capacity, improve the elasticity of lung tissue, as well as the musculature involved in respiration.

In order to verify the positive effects of practicing various yoga techniques, the following measurements were performed: Anthropometric measurements: body height and weight; Professional measurements for detecting deformities and irregularities in body posture; and Specialized measurements of the spinal column using a specialized device called “Spinal Mouse,” which telemetrically presents the measurement results in electronic form.

The Spinal Mouse device provides the following parameters through telemetric measurements: Information about body posture; Information about spinal mobility in all directions: anteflexion, retroflexion, and lateroflexion; Information about the individual mobility of the thoracic, lumbar, and lumbosacral parts of the spinal column; and Information about pelvic mobility in relation to the spinal column.

Results

The study included 32 children aged 7 to 14 years, of whom: 7 children were aged 6 to 8 years; 17 children were aged 9 to 11 years; and 8 children were aged 12 to 14 years (Figure 1).

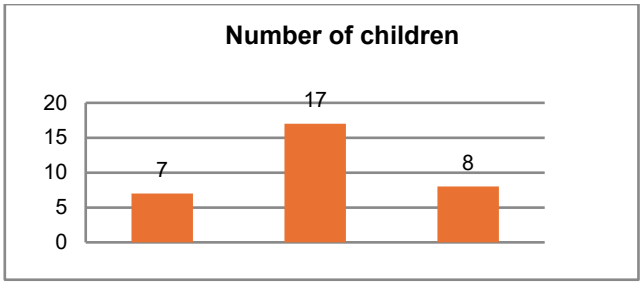

Figure 1: Number of children at the first measurements

First part of the measurements

The first part of the measurements refers to the results regarding the mobility of the spinal column as a whole, as well as the individual segments of the spinal column.

The initial measurements included: Measurement of the mobility of the thoracic part of the spinal column from an upright position to flexion; Measurement of the mobility of the lumbar part of the spinal column from an upright position to flexion; Measurement of the mobility of the lumbar part of the spinal column from an upright position to extension; Measurement of the mobility of the spinal column from

an upright position into lateroflexion; Measurement of pelvic mobility from an upright position to flexion; Measurement of pelvic mobility from an upright position to extension; Measurement of the mobility of the spinal column as a whole from an upright position to flexion; Measurement of the mobility of the spinal column as a whole from an upright position to extension (Table 1).

1. Results of the measurements of thoracic spinal mobility to flexion: 16 children, or 50%, showed good mobility of the thoracic region to flexion; 14 children, or 43.7%, showed increased mobility of the thoracic region to flexion; and 2 children, or 6.3%, showed reduced mobility of the thoracic region to flexion.

2. Results of the measurements of lumbar spinal mobility to flexion: 15 children, or 46.9%, showed good mobility of the lumbar region to flexion; 8 children, or 25%, showed increased mobility of the lumbar region to flexion; and 9 children, or 28.1%, showed reduced mobility of the lumbar region to flexion.

3. Results of the measurements of lumbar spinal mobility to extension: 11 children, or 34.4%, showed good mobility of the lumbar region to extension; 2 children, or 6.3%, showed increased mobility of the lumbar region to extension; and 19 children, or 59.3%, showed reduced mobility of the lumbar region to extension.

4. Results of the measurements of pelvic mobility to flexion: 9 children, or 28.1%, showed good pelvic mobility to flexion; 3 children, or 9.4%, showed increased pelvic mobility to flexion; and 20 children, or 62.5%, showed reduced pelvic mobility to flexion.

Table 1: Measurements of elasticity of the spine and pelvis

Measured parameter	Normal / good mobility	Increased mobility	Reduced mobility
Flexion of the thoracic spine	50%	43.7%	6.3%
Flexion of the lumbar spine	46.9%	25%	28.1%
Extension of the lumbar spine	34.4%	6.3%	59.3%
Pelvic flexion	28.1%	9.4%	62.5%
Pelvic extension	18.8%	78.1%	3.1%
Flexion of the whole spine	37.5%	6.2%	56.3%
Extension of the whole spine	56.3%	43.7%	0%

5. Results of the measurements of pelvic mobility to extension: 9 children, or 28.1%, showed good pelvic mobility to extension; 3 children, or 9.4%, showed increased pelvic mobility to extension; and 20 children, or 62.5%, showed reduced pelvic mobility to extension.

6. Results of the measurements of the mobility of the spinal column as a whole to flexion: 12 children, or 37.5%, showed good mobility of the spinal column as a whole to flexion; 2 children, or 6.2%, showed increased mobility of the spinal column as a whole to flexion; and 18 children, or 56.3%, showed reduced mobility of the spinal column as a whole to flexion.

7. Results of the measurements of the mobility of the spinal column as a whole to extension: 18 children, or 56.3%, showed normal mobility of the spinal column as a whole to extension; and 14 children, or 43.7%, showed increased mobility of the spinal column as a whole to extension.

Second Part of the Measurements

The second part of the measurements refers to the range of spinal movements expressed in degrees.

The following parameters were measured: Measurement of correct body posture in comparison with the vertical line as a norm; Measurement of spinal mobility in flexion; Measurement of spinal mobility in extension; and Measurement of lateral spinal mobility to the left and right, where the difference between them indicates the presence of scoliosis to the left or to the right.

1. Results of the measurements of correct body posture: The deviation of the spinal column from the vertical line was measured and expressed in degrees (10 children, or 31.3%, showed correct body posture in relation to the vertical line; and 22 children, or 68.7%, showed deviation from the vertical line, indicating incorrect body posture).

2. Results of the measurements of spinal mobility to flexion, expressed in degrees: 14 children, or 43.7%, showed forward flexion greater than 90 degrees, indicating good spinal elasticity in flexion; and 18 children, or 56.3%, showed forward flexion below 90 degrees, indicating reduced elasticity in flexion (Table 2).

Table 2: Measurements of flexion and extension of the spine

Measured parameter	Good elasticity / correct posture	Reduced elasticity / incorrect posture
Correct body posture	31.3%	68.7%
Forward spinal flexion	43.7%	56.3%
Backward spinal extension	50%	50%

3. Results of the measurements of spinal mobility to extension expressed in degrees: 16 children, or 50%, showed backward extension greater than 30 degrees, indicating good spinal elasticity in extension; and 18 children, or 56.3%, showed backward extension below 30 degrees, indicating reduced elasticity in extension.

4. Results of spinal measurements in lateroflexion, to the left and right, and the presence of scoliosis: 27 children, or 84.4%, showed a difference in lateroflexion to the left and right, indicating the presence of scoliosis; 5 children, or 15.6%, showed equal lateroflexion to both sides.

Table 3: Presence of scoliosis at the school children

Finding	Percentage
No spinal curvature / scoliosis	15.6%
Spinal curvature / scoliosis present	84.4%

Of those with scoliosis, 17 children, or 62.9%, had left-sided scoliosis, while 10 children, or 37.1%, had right-sided scoliosis; Among the children with

scoliosis, 13 children, or 48.1%, had a mild form of scoliosis with a curvature of 1–5 degrees; 10 children, or 37.1%, had a moderate form of scoliosis with a curvature of 6–10 degrees; and 4 children, or 14.8%, had a severe form of scoliosis (Table 3 and Table 4).

Table 4: Degree of the scoliotic curvature

Degree of curvature	Severity of curvature	Percentage
1–5 degrees	Mild form	48.1%
6–10 degrees	Moderate form	37.1%
Over 11 degrees	Severe form	14.8%

Results of the Second Telemetric Measurements of the Children Attending the Specialized Yoga Course

A total of 22 children completed the second measurements. For better clarity, the results of the second measurements are presented in tabular form in order to make a comparison with the first measurements of the participants (Table 5).

The measurement results showed that, in individuals with normal elasticity, there was a significant improvement in mobility in all possible directions.

Table 5: Results of the telemetric measurements with the "spinal mouse"

Measured parameter	Normal		Increased		Reduced	
	First measurement	Second measurement	First measurement	Second measurement	First measurement	Second measurement
Flexion of the thoracic spine	50%	59.1%	43.7%	36.4%	6.3%	4.5%
Flexion of the lumbar spine	46.9%	45.5%	25%	31.8%	28.1%	22.7%
Extension of the lumbar spine	34.4%	45.5%	6.3%	13.6%	59.3%	40.9%
Pelvic flexion	28.1%	36.4%	9.4%	18.1%	62.5%	45.5%
Pelvic extension	18.8%	45.5%	78.1%	54.5%	3.1%	0%
Flexion of the whole spine	37.5%	45.5%	6.2%	18.1%	56.3%	36.4%
Extension of the whole spine	56.3%	50%	43.7%	45.5%	0%	4.5%

In participants with reduced and increased elasticity, the practice of yoga techniques contributed to a redistribution of the elasticity of the spinal column, thereby improving overall mobility in all directions (Table 6).

Table 6: Measurements of spinal elasticity

Measured parameter	With good spinal elasticity		With reduced spinal elasticity	
	First measurement	Second measurement	First measurement	Second measurement
Correct body posture	31.3%	68.2%	68.7%	31.8%
Spinal flexion	43.7%	59.1%	56.3%	40.9%
Spinal extension	50%	54.5%	50%	45.5%

The results of the measurements of body posture, as well as spinal mobility in flexion and extension, showed that there was a significant improvement in the mobility of the spinal column, resulting in better posture and greater flexibility of the spinal column as a whole (Table 7).

Table 7: Comparison of scoliotic curvature before and after yogic exercises

Degree of scoliosis	Severity of scoliosis	First measurement	Second measurement
1–5 degrees	Mild form	48.1%	57.1%
6–10 degrees	Moderate form	37.1%	28.6%
Over 11 degrees	Severe form	14.8%	14.3%

The measurements showed that individuals with a mild form of scoliosis demonstrated considerable improvement in their condition, whereas individuals with moderate and severe forms of scoliosis did not show improvement. In persons with more serious scoliosis, the application of specialized spinal movements is necessary in order to achieve correction of the scoliotic curvature.

Discussion

Based on the telemetric measurements performed on school-age children using the specialized Spinal Mouse device, it was concluded that a large number of participants showed partial or greater stiffness in the movements of the spinal column and pelvis. This, among other things, contributes to reduced elasticity, a tendency toward spinal deformities, breathing difficulties, rapid fatigue, and poor body posture [1], [2], [5].

Some measurements showed increased mobility of certain parts of the spinal column, which is a sign of uneven distribution of elasticity across all segments. This is a result of poor body posture, shallow breathing, and reduced physical activity [2], [4], [5].

The specialized yoga program intended for school-age children contributed to:

• Improvement of spinal column elasticity [1], [2], [3], [4], [5];

• Improvement of pelvic elasticity through increased mobility of the sacroiliac and coxofemoral joints [1], [2], [3];

• Even distribution of elasticity along the spinal column, which contributes to greater mobility of the spinal column as a whole [1], [3], [5];

• Improvement in individuals with a mild degree of scoliosis through increased mobility and elasticity of the spinal column and pelvis [3], [4];

• In individuals with more severe forms of scoliosis, the application of selective exercises and appropriate breathing techniques is necessary in order to achieve greater correction of scoliosis [3], [4], [5].

Conclusion

The results obtained from the telemetric measurements using the Spinal Mouse showed that the specialized yoga program contributed to increased mobility of the spinal column — thoracic, lumbar, and lumbosacral regions — in all directions.

The examined individuals are at an age when stimulation is necessary for proper growth and development of the body. This is largely enabled through the application of yoga techniques, which contribute to the movement of the entire body and to increasing the range of motion of all joints. Breathing techniques help improve the quality of breathing, which is essential for proper growth. Relaxation techniques and specific body positions — asanas — also contribute to the psychomental maturation of school-age children.

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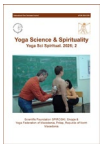

Respiratory Re-Education Through Yoga Techniques as Prevention of Asthma and Other Lung Diseases

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Abstract

BACKGROUND: Asthma and other chronic respiratory diseases represent major global public health challenges due to their increasing prevalence, morbidity, and socioeconomic burden. Breathing, although a fundamental physiological process, receives limited attention in health promotion and disease prevention. Yoga incorporates a comprehensive system of breathing re-education techniques that may improve respiratory function and contribute to the prevention of respiratory disorders.

AIM: To evaluate the effects of a structured yoga-based respiratory re-education program on respiratory health and function, and to assess its potential role in the primary prevention of asthma and other lung diseases.

METHODS: The study was conducted in two phases. In the first phase, 341 yoga practitioners completed questionnaires before and after participation in yoga courses, reporting respiratory symptoms and perceived improvements. In the second phase, objective respiratory function was assessed through spirometry in healthy adults who participated in specialized yoga breathing re-education programs for either one month (n=15) or three months (n=20). The intervention included psychophysical exercises, asanas, pranayama, bandhas, kriyas, and relaxation techniques. Sessions were held twice weekly under professional supervision, with daily home practice recommended.

RESULTS: Among the 341 participants, 124 reported respiratory problems at baseline, and 80 (64.5%) reported subjective improvement following the yoga program. Spirometric evaluation demonstrated trends toward improved respiratory parameters after both one and three months of practice. In the one-month group, significant improvements were observed in selected expiratory flow measures (FEF75 and FEF50; $p<0.05$), while other respiratory parameters showed non-significant positive changes. In the three-month group, improvements were observed in forced vital capacity (FVC), forced expiratory volume in one second (FEV1), and other dynamic respiratory capacities, although these changes did not reach statistical significance.

CONCLUSION: Yoga-based respiratory re-education appears to improve subjective respiratory well-being and may positively influence objective measures of pulmonary function. The program enhances breathing awareness, respiratory muscle function, airway hygiene, and overall respiratory efficiency. These findings support the potential role of yoga as a complementary strategy for primary prevention and respiratory health promotion. Further studies involving larger samples, longer intervention periods, and patients with asthma or chronic obstructive pulmonary diseases are warranted.

Introduction

Asthma and other lung diseases are among the most common socio-medical problems of the contemporary world. It is assumed with high certainty that asthma is going to be the disease of the 21st century. High morbidity, invalidity and mortality with obvious prevalence and progressive incidence make these diseases a difficult medical, economic, social and humanitarian problem for any society.

This paper aims to show the positive influence of the system of yoga techniques over the overall respiratory function and to present it as a way of primary prevention of asthma and other lung diseases. It is a fact that only negligible attention is given to breathing as one of the basic factors for maintenance of natural and healthy way of living [1], [2].

Materials and Methods

The first phase of this research has been based on the data derived from the answers of 341 yoga practitioners attending common yoga classes who filled questionnaires before they started and after they completed the course. The questionnaire referred to various aspects of respiratory diseases (frequent colds, breathing difficulties, coughs, bronchitis and other respiratory diseases) and the practitioners had an opportunity to report the subjective improvements they noticed (Table 1).

Table 1: Reported subjective respiratory problems at the practitioners (250 females and 91 males, average age 29.88)

Number of reported problems With the lungs	Improvement	Percentage %	Total number of practitioners
124	80	64.5%	341

The subjective improvements described in the first phase of the research necessitated objective spirometry measurements before and after the completion of the courses for basic breathing re-education. This phase was based upon a healthy population of 20 practitioners who practiced for three months and 15 practitioners who practiced one month. They all took part in a specialized yoga program for respiratory re-education developed according to classical Haṭha Yoga methodology [1], [2].

This program concentrates on an integral re-education of all elements connected with breathing, which further enables:

- increased awareness and control of breathing;
- rational and quality hygiene of the respiratory passages;
- better passableness of the respiratory passages;
- revitalization and better use of the respiratory muscles (diaphragm, costovertebral and abdominal muscles); the better use of lungs depends on the ability to activate these muscles;
- improvement of the body posture as a prerogative for unobstructed respiratory movements;
- enhanced elasticity of the lung tissue, which enables its more rational use.

The course went on for a period of three months. Most of the practiotioners wer attending classes at joga society of Skopje, Ohrid, Struga and Prilep. The classes lasted between 60 and 75 minutes and were held twice a week under the professional guidance of a yoga instructor. The practitioners were asked to repeat the same program daily.

Contents and characteristics of the yoga program

The program was especially designed for basic re-education of breathing. It consisted of the following techniques:

1. PREPARATORY PSYCHOPHYSICAL EXERCISES- basic dynamic exercises for re-education of the locomotive system performed with slow and relaxed movements of the various parts of the body. The exercises are performed in coordination with inhaling and exhaling and establish control over the breathing process.

2. ASANAS- specific body postures performed in a slow and controlled manner in order to attain psychophysical stability and breathing awareness. The choice of the asanas was made with an aim to enable maximum stretching and strengthening of the chest.

3. PRANAYAMA- breathing techniques that re-teach the right way of breathing and enhance lung capacity, better exchange of gases and physical and mental calmness. Yoga distinguishes:

- Lower, abdominal or diaphragmatic breathing, which is the best and the deepest way of breathing. It stretches the lower parts of the lungs towards the abdomen. It activates the diaphragm and the abdominal muscles, which enhances their elasticity and results in better control over them;
- Middle, chest or thoracic breathing, which activates the muscles of the chest and improves their elasticity, as well as the mobility of the costovertebral joints;
- Upper or sternoclavicular breathing, which is the shallowest of the three. It activates only the upper parts of the lungs and moves the clavicles only slightly;
- Having gained control over these three different ways of breathing, the participants were taught complete yoga breathing. It incorporates all of the above-mentioned ways of breathing following one another.

4. BANDHAS - neuromuscular contractions practiced because of their positive influence over the whole body. In our case uddiyana bandha was practiced because it enables:

- maximum exhalation of the air from the lungs;
- decreasing the amount of residual air;
- better blood circulation of the lungs;
- strengthening of the diaphragmatic muscle;
- better elasticity of the lung tissue;
- better elasticity of the smooth muscles of the respiratory tract.

5. KRIYAS- techniques for clearing breathing passages. They ensure better passableness of these passages, make breathing easier and are beneficial for the whole body. Kapalbhati is a technique for clearing lower breathing passages. The inhaling is natural, but

the exhaling is forced and quick and clears mechanically all obstacles (mucous, small particles and similar). Jala neti is a technique for clearing the upper breathing passages, the nose and the sinuses. It uses the process of osmosis to clear all impurities, mucous and edematous liquids from the nasal mucous membrane and makes breathing easier and more pleasant.

6. RELAXATION TECHNIQUES - enable the body to relax and rest in a short time. They decrease the physical and mental strain, balance the activity of the nervous system and remove any spasms of the muscles of the breathing system. As a result, the breathing becomes slow, calm and balanced and enables rational exchange of gases on the alveolar-capillary level.

Results

The first stage of the study shows the subjective improvements achieved by the practitioners at the common yoga courses. They mentioned various problems regarding the respiratory system, such as frequent colds, breathing difficulties, coughs, bronchitis and other lung diseases at the beginning of the courses and their subjective improvements after the finishing of the courses (Table 2-4).

The second stage of the research shows the results of spirometry done at the practitioners before and after the yoga course (Table 2-4).

Table 2: Mean values and standard deviations of some dynamic respiratory capacities before and after 3 months of yoga exercises in 14 female adults (age - 30.57 ± 9.61, height – 166.71 ± 5.09). n.s., no significance

3 Months	FVC 1	FVC %	FEV1 1	FEV1 %	FEV1/ FVC	FEV1/ FVC%	FEF1/s 25-75	FEF 25-75%	FEF1/s 75	FEF 75%	FEF1/s 50	FEF 50%	FEF1/s 25	FEF 25%
Before	4072.71 ± 722.25	97.93 ± 20.1	3399.29 ± 655.39	96.29 ± 22.55	83.42 ± 7.29	102.36 ± 8.35	3.84 ± 0.95	87.5 ± 23.86	5.52 ± 1.90	76.14 ± 34.03	4.33 ± 1.06	81.79 ± 25.67	2.23 ± 0.63	83.21 ± 29.98
After	4182.5 ± 670.36	101.2 ± 24.2	3566.21 ± 623.41	101.5 ± 24.56	85.30 ± 7.77	104.64 ± 8.78	4.01 ± 1.06	91.57 ± 26.87	5.74 ±1.43	78.29 ± 25.04	4.71 ± 1.28	89.36 ± 32.82	2.34 ± 0.76	86.86 ± 33.15
P < 0.05	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.

Table 3: Mean values and standard deviation of some dynamic respiratory capacities before and after 3 months of yoga exercises in 6 male adults (age 30.33 ± 9.42; height-177.83 ± 8.47). n.s., no significance

3 Months	FVC 1	FVC %	FEV1 1	FEV1 %	FEV1/ FVC	FEV1/ FVC%	FEF1/s 25-75	FEF 25-75%	FEF1/s 75	FEF 75%	FEF1/s 50	FEF 50%	FEF1/s 25	FEF 25%
Before	5543.83 ± 901.65	110.8 ± 20.1	4770.17 ± 824.61	113.83 ± 19.16	86.08 ± 6.51	104.17 ± 7.73	5.35 ± 1.43	113.33 ± 32.31	8.85 ± 2.19	105.67 ± 23.18	6.39 ± 1.94	110.67 ± 39.97	3.14 ± 0.92	110.5 ± 47.20
After	5908.33 ± 457.47	118.5 ± 12.8	4838.33 ± 531.04	115.83 ± 9.62	81.95 ± 7.96	100 ± 9.25	5.37 ± 1.41	114.67 ±33.07	9.26 ± 1.20	111.17 ± 13.82	5.87 ± 1.88	101.17 ± 35.95	2.75 ± 1.10	94.67 ± 42.86
P < 0.05	n.s..	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.

Table 4: Mean values and standard deviation of some dynamic respiratory capacities before and after 1 month of yoga exercises in 15 female adults (age-31.44 ± 7.40; height-167±7.85). n.s., no significance

1 Month	FVC 1	FVC %	FEV1 1	FEV1 %	FEV1/ FVC	FEV1/ FVC%	FEF1/s 25-75	FEF 25-75%	FEF1/s 75	FEF 75%	FEF1/s 50	FEF 50%	FEF1/s 25	FEF 25%
Before	3985.06 ± 799.31	90.56 ± 16.2	3186.12 ± 576.19	85.5 ± 13.04	80.96 ± 12.03	100.69 ± 15.46	3.84 ± 0.89	83.44 ± 18.11	5.1 ± 1.69	63.56 ± 1.69	4.25 ± 21.18	73.12 ± 1.16	2.38 ± 18.40	79 ± 0.53
After	3983.19 ± 580.62	91.25 ± 14.3	5638.75 ± 911.51	92 ± 15.07	85.77 ± 8.62	106.5 ± 11.49	3.78 ± 0.76	82.44 ± 16.43	5.64 ± 1.33	70.5 ± 16.13	4.21 ± 0.88	72.81 ± 15.59	2.22 ± 0.67	72.87 ± 21.56
P < 0.05	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	P < 0.05	P < 0.05	n.s.	n.s.	n.s.	n.s.

We found that only FEF1/s 75 (increased from 5.1 ± 1.69 to 5.64 ± 1.33) and FEF 75% (increased from 63.56 ± 1.69 to 70.5 ± 16.13) were significantly increased before and after 1 month of yoga exercises (P < 0.05) in 15 female adults (Table 4, Figure 1).

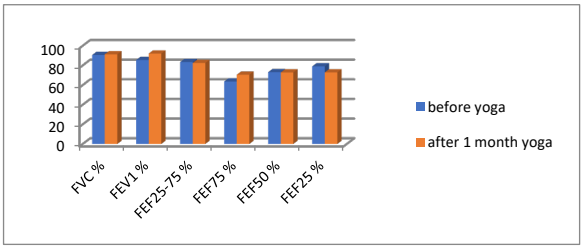

Figure 1: Dynamic respiratory capacities of female adults before and after 1 month of yoga exercises

Discussion

The positive results of this research emphasize the significance and the importance of breathing as a physiological process. The process of prevention is mostly justified if it is applied to a healthy population, and the application of the yoga techniques enables complete primary prevention [1], [2] because:

- It presents an already approved, well-designed and gradual method of breathing education;
- It re-educates because people are taught to become aware of their breathing potential and thus improves the quality of their breathing;

- It transforms automatic breathing into a conscious. deep and controlled inhaling and exhaling according to the needs of the individual;
- It enhances the function and the elasticity of the diaphragmatic muscle that takes an important part in respiration. It strengthens the chest muscles and leads towards a growing amplitude of inhaling and exhaling. It improves one's awareness and control of the work of the abdominal muscles;
- Active breathing has beneficial influence on the function of the other organs abdominal breathing gives a gentle massage to the abdominal organs and improves peristalsis; chest breathing massages the organs of the mediastinum the heart, the large blood vessels and the esophagus;
- If improves one's awareness about his/her way of living and working and increases the responsibility for one's health and life.

That is the reason why the subjective improvements gained after following a yoga program and the positive experiences from the respiratory re-education of healthy population should make us consider for a wider secondary and tertiary prevention of patients suffering from asthma [5] and another patient with lung fibrosis [6] show that there were significant subjective improvements in both cases. The significance and the importance of yoga is due to the fact that:

- It is a complex system of psychophysical and respiratory techniques that embraces all aspects and functions of the human organism;
- It involves a detailed and methodologically designed approach that gradually leads the practitioner into these techniques;
- It has a complex insight of physiological mechanisms based on an accumulated knowledge and experience gained through an empirical approach more than 4000 years ago.

Conclusion

We observe our research as contribution of yoga to modern science, which at this moment is mature enough to open up and accept contemporary holistic treatment in everyday health protection.

We would like to emphasize that this was only preliminary pilot research based on the former experiences of several yoga centers, which shows objective improvements with the application of respiratory re-education. The period of three months in practicing yoga is relatively short to attain better objective results with healthy population, although subjective results were noticed immediately after the first month of yoga practice. We will continue our research to investigate the influence of respiratory re-education after a longer period of yoga practice. The second phase of this research would involve practitioners with asthma and chronic obstructive diseases and investigate the influence of the breathing techniques, as well as the whole complex of other yoga techniques on the complementary therapy and rehabilitation of these diseases.

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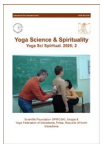

Integrative Medicine and Complementary Practices for Cancer Care: Emphasizing Yoga and Spiritual Dimensions

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Abstract

BACKGROUND: Cancer care has increasingly adopted an integrative medicine approach that combines evidence-based conventional oncology treatments with complementary therapies to address the physical, psychological, emotional, and spiritual needs of patients. Among complementary interventions, yoga and meditation have gained substantial scientific support for improving quality of life, reducing treatment-related symptoms, and enhancing spiritual well-being.

AIM: To review the role of integrative medicine in cancer care, with particular emphasis on yoga, meditation, and spirituality as complementary approaches for improving symptom management, psychological resilience, and overall quality of life in oncology patients.

METHODS: A narrative review of published literature, clinical practice guidelines, and evidence-based resources was conducted to examine the principles of integrative medicine and the scientific evidence supporting yoga, meditation, and other complementary therapies in cancer care. The review also explored the spiritual dimensions of these interventions and their integration into comprehensive oncology practice.

RESULTS: Current evidence indicates that yoga and meditation significantly reduce stress, anxiety, fatigue, insomnia, pain, and depressive symptoms while improving health-related quality of life among cancer patients. Clinical guidelines from integrative oncology organizations support the incorporation of these interventions as adjuncts to standard cancer treatment. Yoga combines physical postures, breathing techniques, and meditation to promote physical recovery, emotional resilience, and spiritual growth. Meditation and mindfulness-based interventions enhance psychological well-being, reduce emotional distress, and foster acceptance and inner peace. Additional complementary therapies, including acupuncture, massage, energy healing, and nutrition counselling, may further contribute to holistic patient care. Spiritual care strengthens patients' ability to cope with existential challenges, improves resilience, and supports adherence to conventional treatment when safely integrated under medical supervision.

CONCLUSION: Integrative medicine provides a comprehensive framework for cancer care by combining conventional oncology with evidence-based complementary therapies that address the whole person. Yoga and meditation are among the most effective complementary interventions, offering measurable physical, psychological, and spiritual benefits that enhance quality of life. Continued research and culturally appropriate implementation of integrative approaches may further establish these therapies as standard components of comprehensive oncology care.

Introduction

Emerging clinical and scientific evidence demonstrates that complementary practices for cancer care can effectively mitigate stress, anxiety, pain, and fatigue, leading to meaningful improvements in quality of life [1], [2], [3]. Furthermore, the integration of spirituality into cancer care may help patients develop greater resilience, emotional balance, and overall well-being [4], [5].

Cancer care has evolved beyond purely biomedical interventions to encompass a more comprehensive model known as integrative medicine [6], [7]. This approach combines evidence-based conventional therapies—such as surgery, chemotherapy, radiation, and biological treatments—with complementary practices to support the whole person. Integrative medicine addresses not only

physical symptoms but also emotional, mental, and spiritual aspects, recognizing that cancer affects every dimension of life. In the context of yoga and spirituality, practices like yoga and meditation offer profound tools for healing, drawing from ancient Eastern philosophies that emphasize mind-body harmony [5], [8].

The use of complementary and alternative medicine (CAM) in oncology is widespread, with surveys indicating that many patients incorporate therapies such as acupuncture, herbal medicine, mind-body practices, and energy healing into their regimens. This article highlights yoga and meditation as core complementary practices, supported by growing scientific evidence, and explores their spiritual underpinnings to provide a framework for their application in cancer care [6], [7].

What is Integrative Medicine?

Integrative medicine is defined as a patient-centred approach that integrates conventional medical treatments with complementary therapies to optimize health and healing. [9], [10] Unlike alternative medicine, which may replace standard care, integrative practices are used alongside it to enhance outcomes and manage side effects [6]. Key principles include:

Holistic Focus: Treating the physical, emotional, social, and spiritual needs of the patient.

Evidence-Based Integration: Selecting therapies backed by research, such as those investigated in clinical trials.

Personalization: Tailoring interventions to individual patient preferences and cultural backgrounds, including spiritual beliefs.

In cancer care, integrative medicine has gained traction at major centers, where programs offer services like yoga, meditation, and nutrition counselling to improve post-treatment wellness. This model mends the historical divide between Western medicine and Eastern traditions, putting patient well-being first [7], [11].

Complementary Practices in Cancer Care

Complementary practices encompass a range of therapies that support conventional treatment. While diverse, they often share a foundation in promoting balance and self-healing. Below, we focus on those with strong ties to yoga and spirituality.

Yoga: A Mind-Body Practice for Physical and Emotional Resilience

Yoga, originating from ancient Indian spiritual traditions, integrates physical postures (asanas), breathing techniques (pranayama), and meditation to foster unity between body, mind, and spirit [5], [8]. In cancer care, yoga is recommended for its ability to reduce stress, improve sleep, decrease fatigue, and alleviate treatment side effects [1], [2], [3]. Studies show that regular yoga practice can enhance quality of life, with growing evidence supporting its benefits in managing anxiety and depression [2].

For instance, yoga helps mitigate chemotherapy-induced nausea and pain, while promoting physical strength and flexibility during recovery. Spiritually, yoga encourages mindfulness and self-awareness, aligning with yogic philosophy's emphasis on inner peace and transcendence of suffering. Patients often report a deeper sense of purpose and connection, which can be transformative in facing cancer's existential challenges [4], [5].

Meditation and Mindfulness: Cultivating Spiritual Well-Being

Meditation, including mindfulness-based stress reduction (MBSR), is a cornerstone of spiritual practice in many traditions, including yoga. It involves focused attention, breath awareness, or guided imagery to calm the mind and reduce emotional distress. In oncology, meditation has been shown to ease anxiety, fatigue, insomnia, and depression, with evidence indicating improvements in overall mental health [3].

Spiritually, meditation fosters a connection to the inner self or a higher power, helping patients navigate the fear and uncertainty of cancer. Programs incorporating guided imagery and relaxation techniques have demonstrated efficacy in reducing pain and enhancing emotional resilience [3], [4]. When combined with yoga, these practices amplify their effects, creating a synergistic approach to holistic healing.

Other Complementary Therapies with Spiritual Elements

Beyond yoga and meditation, therapies like acupuncture, massage, and energy healing (e.g., Reiki) often incorporate spiritual dimensions. Acupuncture, rooted in traditional Chinese medicine, may relieve nausea and hot flashes, while massage aids in stress reduction and lymphatic drainage. Energy therapies, such as Healing Touch, emphasize heart-centred intention, aligning with spiritual concepts of universal energy. Nutrition counselling and herbal approaches also support spiritual wellness by promoting mindful eating and harmony with nature.

Evidence and Research

Research supports the integration of these practices into cancer care [6]. National surveys reveal that mind-body therapies like yoga and meditation are among the most utilized CAM approaches, with usage rates around 17.7% among adults. Clinical guidelines from organizations like the Society for Integrative

Oncology recommend yoga and meditation for improving quality of life, with moderate to strong evidence supporting symptom management [6], [7].

However, potential risks exist, such as interactions with treatments or over-reliance on unproven methods. Patients should consult healthcare providers to ensure safe integration. Ongoing studies, including those at centers like City of Hope, continue to further evaluate these therapies through rigorous research [9].

Spiritual Dimensions in Cancer Care

Spirituality plays a pivotal role in integrative medicine, offering a framework for meaning-making amid illness [4]. Yoga and meditation, as spiritual practices, help patients transcend physical suffering, fostering acceptance and inner strength. This aligns with yogic teachings on the interconnectedness of body, mind, and spirit (atman) [5], [8]. In diverse cultural contexts, including Indian traditions prevalent in regions like Chhattisgarh, these practices resonate deeply, enhancing cultural relevance in care.

By addressing spiritual needs, integrative approaches can reduce existential distress, leading to better adherence to treatment and improved outcomes.

Conclusion

Integrative medicine, with its emphasis on complementary practices like yoga and meditation, offers a promising path for enhancing cancer care. By incorporating spiritual elements, it empowers patients to achieve holistic well-being. As research advances, these practices may increasingly become a standard component of oncology care, bridging science and spirituality for optimal healing. Future studies should explore culturally tailored interventions to broaden accessibility.

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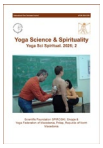

Scientific Contributions of Dr. Mukund Vinayak Bhole to Yoga Research, Pranayama, and Yoga Therapy

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Abstract

BACKGROUND: The scientific development of yoga during the twentieth century was shaped by several pioneering researchers who successfully integrated traditional yogic knowledge with modern medical science. Among the most influential was Dr. Mukund Vinayak Bhole (1935–2021), physician, physiologist, yoga researcher, and former Research Director of Kaivalyadhama, the world's first yoga research institute. His investigations into pranayama, yoga physiology, and yoga therapy contributed substantially to the establishment of evidence-based yoga and the development of modern therapeutic applications.

AIM: To review the life, scientific achievements, research contributions, and educational legacy of Dr. Mukund V. Bhole, with particular emphasis on his work in pranayama, yoga therapy, and the integration of traditional yogic principles with modern biomedical science.

METHODS: A narrative historical review was conducted using published books, scientific articles, institutional documents, online archives, and selected publications authored by Dr. Bhole. The review examined his academic career, laboratory and clinical research, therapeutic concepts, educational programs, and selected scientific papers on pranayama and yoga therapy. Personal observations from scientific meetings and professional interactions with Dr. Bhole were also incorporated to provide historical context.

RESULTS: Dr. Bhole made outstanding contributions to modern yoga research through physiological investigations of yogic practices, development of the Bhole Approach (Anubhava) to yoga therapy, and integration of classical yogic concepts with contemporary anatomy and physiology. His research explored the physiological effects of asanas, pranayama, kriyas, bandhas, meditation, and mantra practices using modern clinical and laboratory methods. He developed educational programs and therapeutic protocols for conditions including bronchial asthma, hypertension, diabetes, chronic low back pain, anxiety disorders, cardiac rehabilitation, and stress-related illnesses. His publications, editorial work, and international teaching activities significantly advanced scientific understanding of yoga and promoted its acceptance within rehabilitation medicine and integrative healthcare. His work further demonstrated how traditional concepts such as prāṇa, vāyus, chakras, and Pancha Kosha could be interpreted within a modern biomedical framework while preserving their experiential significance.

CONCLUSION: Dr. Mukund V. Bhole was one of the foremost pioneers of scientific yoga and yoga therapy. His interdisciplinary approach successfully bridged ancient yogic wisdom with modern medical science, establishing a foundation for contemporary research on pranayama, mind–body medicine, and therapeutic yoga. His scientific, educational, and clinical legacy continues to influence yoga researchers, healthcare professionals, and yoga therapists worldwide and remains an important milestone in the evolution of evidence-based integrative medicine.

Introduction

Dr. Mukund Vinayak Bhole was known for developing a distinctive therapeutic system known as the Bhole Approach [1]. He served as a Research Director of Kaivalyadhama SMYM Samiti in Lonavla, India, the world's first yoga research institute. He held an M.D. in Physiology and D. Sc. in Yoga and was granted a number of distinctions for his tireless work in yoga. From the early 1970s onward, he taught in numerous Asian and European countries. His main area of interest was research into pranayama. The purpose of this review is to present the scientific and educational contributions of Dr. Bhole to modern yoga research, with particular emphasis on pranayama and yoga therapy.

Background, Career, Achievements and Publications

Dr. Mukund V. Bhole (1935–2021) was a distinguished Indian physician, physiologist, and internationally respected yoga researcher. Born on June 1, 1935, Dr. Bohle was an Indian yoga teacher and qualified medical doctor (MBBS) who dedicated his

life to studying and practising yoga. He was raised in a family that valued education and spirituality, and he showed an early interest in both fields. Dr. Bhole earned his medical degree in 1959 before specializing in physiology at the All India Institute of Medical Sciences (AIIMS), New Delhi. During 1962–1963, he completed his M.D. in Physiology, conducting research on the yogic cleansing technique known as Kapalabhati.



Figure 1: Dr. Mukund V. Bhole (1935–2021)

Following his return to the Kaivalyadhama Yoga Research Institute in Lonavla, Maharashtra, India—recognized as the world's first yoga research institute—Dr. Bhole served in several research and administrative positions over the years. His dedication and contributions to yoga research led to his appointment as Joint Director of Research, a position he held until his retirement in May 1995.

In 1972–1973, the Government of India deputed Dr. Bhole to the former Czechoslovakia, where he introduced yoga using the principles of modern medical science. His work played a significant role in the recognition of yoga as part of rehabilitation medicine in the country. As a result, specialized yoga training programs were developed for rehabilitation professionals.

Due to the success of his contributions, the Czechoslovak Academy of Sciences regularly invited him until 1984 to collaborate with medical researchers in advancing yoga therapy and yoga education.

Dr. Bhole also represented India in Iran through the Indian Council for Cultural Relations (ICCR), where he delivered lectures on yoga at medical colleges and worked with visually impaired individuals, demonstrating the therapeutic applications of yoga.

In addition, the Indian Council of Medical Research (ICMR) deputed him to Russia shortly before the period of Perestroika to participate in collaborative research on the management of labile arterial hypertension.

Throughout his career, Dr. Bhole was invited by numerous organizations across Europe, Brazil, and Argentina to deliver lectures and share his expertise on yoga, its scientific foundations, and its therapeutic applications. He authored numerous scientific publications and served as editor of the renowned journal Yoga Mimamsa [1], [2], contributing significantly to the scientific understanding of yoga.

Dr. Bhole also collaborated with Indian government agencies in developing yoga-related projects requested by the World Health Organization (WHO). In 2003, the World Health Organization began collecting information on Traditional, Complementary, and Alternative Medicine, including traditional yoga, to promote its safe and proper use. In collaboration with India's M.D. National Institute of Yoga and the Ministry of AYUSH, WHO developed and approved technical yoga guidelines at a consultation meeting in New Delhi.

Even during the COVID-19 pandemic, he remained active by conducting online workshops for yoga teachers throughout Europe and Latin America until shortly before his passing on April 13, 2021 [1].

Achievement

His achievements were acknowledged through several prestigious honors, including an Honorary Doctorate in Yoga from SVYASA University in Bengaluru and the title of Yogacharya awarded by the Jindal Nature Cure Institute. In 2006, he received the Maharishi Patanjali Yoga Award from the Central Council for Research in Yoga and Naturopathy under the Government of India.

Publications

Dr. Bhole made significant contributions to yoga literature and medical education. He authored the chapter on the Physiology of Yoga in Professor Bijlani's medical textbook, published by Jaypee Brothers in 1995, marking one of the earliest inclusions of yoga physiology in a medical curriculum.

His research was published extensively in Yoga Mimamsa, the pioneering scientific journal founded by Swami Kuvalayananda in 1924. His work was also featured in publications of the Himalayan Yoga Institute (USA), the *Bibliography of Yoga Articles* edited by Dr. Robin Monro, and the *Abstracts and Bibliography of Yoga Articles* published by Kaivalyadhama.

He authored several influential books, including *Yoga for Health and Happiness*, *Yoga: The Science of Living*, and *Yoga: The Science of Mind and Body*. Among his books are the co-authored *Helping Yourself Towards Zero Backache (2004) and Experiential Yoga: The Bhole Approach,* which

presents his practical and scientific understanding of traditional yoga [2], [3].

Scientific Research

Dr. M. V. Bhole's Contributions to Yoga

Dr. Bhole made significant contributions to yoga through literary, laboratory, therapeutic, and educational research. He helped publish critical editions of *Hathapradipika*, *Gheranda Samhita*, and *Yoga Kosha*. His scientific studies explored the effects of yoga on breathing, heart function, muscle activity, and therapeutic applications, including asthma and back pain. He also developed educational courses on yoga anatomy, yoga therapy, and experiential yoga [2], [6].

Laboratory Research

Dr. Bholecarried out extensive laboratory investigations into the physiological effects of traditional yoga practices. His research investigated the physiological effects of a wide range of yoga practices, including: Yoga postures (Asanas), Breathing practices (Pranayama), Cleansing techniques (Kriyas), Energy locks (Bandhas), Meditation, Chanting of AUM, the Gayatri Mantra, and the Maha Mrityunjaya Mantra.

Drawing upon his deep knowledge of Sanskrit, he carefully studied classical yogic texts and translated ancient concepts into modern scientific and medical terminology [2]. His teaching emphasized the anatomy and physiology of yoga as well as its therapeutic applications [3].

Dr. Bhole's Approach to Yoga Therapy - *Anubhava*

By integrating scientific research, traditional yogic knowledge, and decades of clinical observation, Dr. Bhole developed a distinctive therapeutic system known as the Bhole Approach to Yoga Therapy [5], [6]. *Anubhava* [4] is the Sanskrit term selected by Dr. M. V. Bhole to represent his method of using yoga as an educational and therapeutic practice, as well as a pathway to self-realization. The word anubhava refers to the process of sensing, feeling, and gaining direct experience.

Within this approach, awareness of natural breathing movements in simple postures is used to reduce physical tension, restore functional balance in the body, enhance self-awareness, and support meditation. Students and patients are first guided to understand the mechanics of breathing and identify any irregularities before progressing to more specific yogic techniques.

Yoga Therapy [6] is a holistic approach that helps individuals reconnect with themselves through body, breath, emotions, thoughts, and behavior. Its aim is to restore balance, reduce stress, and improve overall well-being. The main feature of this approach is its yogic assessment method, which incorporates concepts such as chakras, pranic pathways, prana and vayu, the five elements (Mahabhutas), and the Pancha Kosha model. This framework enables practitioners to evaluate breathing patterns and understand their influence on physical and mental health Yoga Therapy in Modern Terms.



Figure 2: Dr. Bhole gives lectures

Yoga Therapy may be viewed as an integrative mind-body approach that combines physical movement, breathwork, relaxation, self-awareness, and emotional well-being to support health and quality of life.

Yoga therapy promotes health through several complementary mechanisms:

1. Working with the Body

* Developing body awareness and relaxation.

* Releasing muscular tension through postures (asanas).

* Improving flexibility, posture, and movement.

* Learning to observe bodily sensations without judgment.

2. Working with Breath

* Becoming aware of natural breathing patterns.

* Improving breathing mechanics and efficiency.

* Using breath to calm the nervous system and support healing.

3. Working with Breath Awareness

* Experiencing the movement of air through the nose and body.

* Practicing breathing techniques (pranayama) to

improve concentration, energy, and relaxation.

* Integrating breath awareness into daily life.

4. Working with Mind and Emotions

* Observing thoughts, emotions, and memories without becoming attached to them.

* Developing healthier responses to stress.

* Cultivating self-awareness, emotional balance, and positive behavior.

5. Experiencing Inner Peace (Shanti)

Through relaxation, meditation, and mindful breathing, Yoga Therapy helps cultivate physical, mental, and emotional peace.

Therapeutic importance of yoga practices

Scope and Limitations

In his article "*Therapeutic importance of yoga practices*" [7] Dr. Bohle highlights the therapeutic value of yoga practices. It begins by explaining that both yoga and Ayurveda take a holistic approach to health, addressing the body, mind, intellect, and soul. Although both primarily focus on preventing and treating diseases, yoga also emphasizes self-awareness. The document further describes how various yogic practices, including asanas, pranayama, and cleansing techniques, can serve as therapeutic methods for managing psychosomatic and functional disorders. These practices work by influencing both the internal and external environment of an individual, as well as their sensory and muscular balance. In particular, it explains that classical asanas help improve posture and overall personality by gently stretching the muscles, unlike conventional exercises that mainly rely on muscle contraction. Yoga Therapy is most effective for stress-related and functional psychosomatic conditions. It encourages active participation and self-care rather than dependence on external treatments.

It is not a replacement for medical care in emergencies, infections, fractures, cancer, or other acute conditions, but can complement conventional healthcare when appropriate.

Educational programs and therapeutic protocols

Dr. Bhole designed educational programs and therapeutic protocols for managing a variety of health conditions, including bronchial asthma, diabetes, chronic low back pain, stress urinary incontinence, high blood pressure, anxiety disorders, cardiac rehabilitation after heart attacks, coronary artery disease, functional disorders associated with chronic stress.

Today, his methods continue to be practiced by yoga therapists and teachers throughout Europe, Italy, and Latin America [8].



Figure 3: Dr. Bhole teaches courses

Research Contributions

During his years at Kaivalyadhama, Dr. Bhole participated in numerous scientific studies involving both healthy participants and individuals with medical conditions. His investigations examined the effects of yoga using modern clinical assessment techniques, including:

- measurement of pressure changes within body cavities,
- pulmonary function testing,
- gastric acidity analysis,
- blood glucose and biochemical testing,
- radiological imaging,
- autonomic nervous system evaluation,
- metabolic assessments,
- psychological testing,
- electromyography (EMG),
- Electrocardiography (ECG),
- electroencephalography (EEG).

He also contributed to specialized research exploring advanced yogic practices, including voluntary slowing of the heartbeat, air swallowing techniques, and traditional yogic burial practices [7].

Yoga Federation of Macedonia

Recollection of Professor Vancho Taseski's travels to Annecy - France and Bangalore and Calicut - India

One of the most significant events of the 1990s was our participation in international scientific gatherings in the fields of yoga, Ayurveda, and holistic medicine. As representatives of the Yoga Federation of Macedonia, we actively participated in the 5th World Congress on Yoga and Holistic Medicine in Annecy,

France (1994), the 3rd International Conference on Frontiers in Yoga Research and Applications in Bangalore, India (1995), as well as the 6th World Congress on Holistic Life and Medicine in Calicut, India (1996).



Figure 4: Pavlos K. Hassanagas, Dr. Ctibor Dostalek, Dr. M.L. Gharote, Dr. M.V. Bhole, Annecy, France 1994

At these international scientific gatherings, we presented several of our research topics on the application of yoga for rehabilitation purposes in patients with cardiovascular diseases and patients with chronic renal failure, alongside topics regarding the application of yoga in children and working people.

This opened up opportunities for direct meetings with leading authorities and experts in the fields of yoga, Ayurveda, and holistic medicine from all over the world. Aside from these events, during our stay in India, we also held such meetings at other centers in Mumbai (Bombay), Pune, and Lonavla.



Figure 5: Pavlos K. Hassanagas, Dr. M.L. Gharote, Dr. M.V Bhole, Vancho Taseski, P.K. Warrier, Giorgo Barabino, and others, Calicut, India 1996

The beginnings of modern physiological research on yoga techniques and their application in medicine and other fields date back to the late 1910s and early 1920s. We had the good fortune and privilege to personally meet some of these world-class authorities and scientists. One of those meetings was our direct contact with Dr. Bhole, who spent most of his scientific and research career at the Kaivalyadhama Yoga Institute in Lonavla. Our first meetings and conversations with him took place in Annecy, France, and later in Calicut and Lonavla in India. Dr. Bhole was an educated physician, a yogi, and a top expert in ancient yoga texts.

These texts describe techniques, their effects on the organism, health benefits, indications, and contraindications for certain diseases using just a few essential words. In fact, in these texts, among other things, the ancient sages wrote about yoga therapy many dozens of centuries ago. Dr. Bhole successfully and skillfully "decoded" this ancient wisdom, often expressed in a hermetic language, and transformed it into knowledge understandable for modern yoga therapists, modern yoga teachers, students, and practitioners. He is one of the founders of the science of yoga therapy and its internal principles and laws of operation. His practical workshops held during the congresses in both France and India were a special story in themselves, dedicated to Pranayama—the science and art of breathing in yoga practice. This science is subtle and complex, touching upon all aspects of a human being: physical, bioenergetic, mental, and spiritual. Dr. Bhole explained to us the importance of understanding every concept and every technical Sanskrit term, revealing the subtle distinctions and the role of the process occurring behind the respective verbal naming.

He did this not only as an erudite in science and yoga philosophy, but also as a yogi with realized experiences in the subject he was conveying. I had the feeling as if we were traveling through an internal time machine of the spirit and mind, carrying us back to the time of Patanjali, Svatmarama, Gheranda, Goraknath, Vasistha, Matsyendra... And yet, at the end of the 20th century, we stood in front of a simple, noble man, a doctor, scientist, and yogi who bridged traditional yoga science into the present, modern age for people who share the same or similar questions and impulses as those from many dozens of centuries ago.

Review and Analysis of Selected Research Articles by Dr. Bhole on Pranayama and Yoga Therapy

In his extensive body of work, Dr. Bhole has written numerous research papers, from which I selected two that I reviewed. I chose these papers because Dr. Bhole's particular interest was focused on the study of pranayama and its significance from the perspectives of yoga and modern science. His work represents an important contribution to the exploration of the connection between breathing, the body, consciousness, and physiological processes.

Review of "Yogic and Biomedical Perspectives on Breathing and Pranayama"

This article presents an interesting comparison between the modern biomedical understanding of breathing and the traditional yogic perspective of prāṇa

and pranayama. It explains how both approaches study the process of breathing but focus on different aspects. While biomedical science examines breathing through measurable physical processes such as gas exchange, lung function, respiratory mechanics, and nervous system regulation, Yoga focuses more on awareness, internal experience, and the connection between the body and mind [8].

The comparison between yogic concepts and prāṇa in Yoga and neural mechanisms in modern physiology especially interesting. The article shows that Yoga views movement and sensory experiences as part of an energetic system, while science explains these processes through biological and neurological functions. These different viewpoints provide a broader understanding of how breathing affects human experience.

The discussion of pranayama was also meaningful because it explains that yogic breathing is not only about controlling the movement of air but also about developing awareness of the body and internal sensations. The concepts of prāṇa, apāna, vāyus, and svāsa-prasvāsa represent a deeper experiential understanding of breathing that cannot be measured in the same way as oxygen levels or lung capacity [9].

The article also connects yogic practices with modern physiology by explaining the role of the diaphragm, respiratory muscles, and nervous system in breathing [11]. This connection suggests that pranayama may help improve body awareness, breathing control, and the relationship between physical and mental states.

Overall, this article provides a valuable perspective on how Yoga and biomedical science approach breathing from two different but complementary viewpoints. Biomedical science helps us understand the physical mechanisms of respiration, while Yoga explores the conscious experience of breathing and its influence on awareness and balance. Together, these perspectives create a more complete understanding of the importance of breath in human health and wellbeing.

Review of "Yoga and Modern Medical Science: A Scientific Perspective"

After reading this article, I found it interesting how it explores the relationship between traditional yoga practices and modern medical science. The article explains that studying yoga scientifically can be challenging because many yogic concepts, such as prāṇa, vāyus, chakras, and kundalini, are based on personal experiences and consciousness rather than physical measurements. This makes it difficult to study using traditional scientific methods.

One of the main points I found valuable is the idea that yoga and modern medicine have different approaches but share a common goal of improving health and wellbeing. Modern medicine focuses on measurable physical processes, such as anatomy, physiology, and medical outcomes, while yoga focuses more on awareness, consciousness, and the connection between the body and mind. The article shows how these two perspectives can work together, especially in areas related to stress, mental health, and mind–body balance.

The section about pranayama was particularly interesting because it compares the yogic and biomedical understanding of breathing. From a medical perspective, breathing is explained through the function of respiratory muscles, nervous system control, and gas exchange [12]. In yoga, breathing is understood through the movement of prāṇa and the balance of internal energy. I found it meaningful that the article suggests these ideas can be explored together through concepts like body awareness, nervous system regulation, and internal sensory experiences.

The article also highlights that modern research can help explain some effects of pranayama by studying breathing patterns, muscle activity, and the body's responses. At the same time, it recognizes that the traditional focus of yoga on personal experience and awareness is an important part of the practice.

Overall, I think this article provides a balanced view of how yoga and modern science can complement each other. It shows that while scientific methods help us understand the physical effects of yoga, the traditional focus on awareness and inner experience also has value. Combining both perspectives can create a deeper understanding of yoga and its possible benefits for human health.

As discussed above it can be seen from the previous discussion Dr. Bhole had a significant impact on the field of yoga research because he helped create a bridge between traditional yogic practices and modern scientific understanding. Through his studies, he encouraged people to look at yoga not only as a spiritual practice but also as a subject that could be explored through physiology, psychology, and medical science.

Conclusion

In conclusion, Dr. Bhole's work has made a significant contribution to the understanding and research of yoga, especially in the area of prāṇāyāma, breathing practices, and yoga therapy. His studies helped create a connection between traditional yogic knowledge and modern scientific approaches by exploring the relationship between breath, body, mind, and consciousness.

Through his research, Dr. Bhole demonstrated that yoga is not only a physical practice but also a method for developing awareness, balance, and self-

regulation. His work provided a deeper understanding of how breathing practices can influence physiological processes, mental states, and overall wellbeing. These insights have also supported the development and application of yoga therapy as an approach that uses yogic practices to promote health and support people in managing different physical and psychological conditions.

His contributions have encouraged yoga practitioners, researchers, and healthcare professionals to view yoga from both traditional and scientific perspectives. By respecting the original principles of yoga while exploring their therapeutic potential, Dr. Bhole helped strengthen the role of yoga as a valuable practice for health, prevention, and holistic wellbeing.

Indian Council for Cultural Relations (ICCR), where he delivered lectures on yoga at medical colleges and worked with visually impaired individuals, demonstrating the therapeutic applications of yoga. In addition, the Indian Council of Medical Research (ICMR) deputed him to Russia shortly before the period of Perestroika to participate in collaborative research on the management of labile arterial hypertension.

Throughout his career, Dr. Bhole was invited by numerous organizations across Europe, Brazil, and Argentina to deliver lectures and share his expertise on yoga, its scientific foundations, and its therapeutic applications. He authored numerous scientific publications and served as editor of the renowned journal Yoga Mimamsa, contributing significantly to the scientific understanding of yoga.

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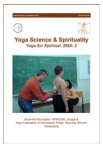

The Vivekananda Yoga Anusandhana Samsthana (VYASA): A Legacy of Integrating Yoga, Science, and Spirituality

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Abstract

BACKGROUND: The Vivekananda Yoga Anusandhana Samsthana (VYASA), founded in 1986 in Bangalore, India, emerged during a period when yoga was increasingly being explored through scientific methods and integrated into healthcare. Guided by the vision of Swami Vivekananda and led by pioneers such as Dr. H.R. Nagendra and Dr. R. Nagarathna, VYASA has played a significant role in bridging traditional yogic knowledge with contemporary scientific research, education, and clinical practice.

AIM: To examine the historical development, philosophical foundations, academic contributions, therapeutic innovations, and global impact of VYASA in establishing yoga as an evidence-based therapeutic and educational discipline.

METHODS: A historical and descriptive review was conducted based on available institutional records, biographical sources, academic information, and published materials related to VYASA and its key contributors. The analysis focused on the institution's founding principles, research activities, educational programs, therapeutic models, and international expansion.

RESULTS: VYASA evolved from a yoga research center into a recognized deemed university offering comprehensive educational and research programs in yoga and related sciences. The institution developed standardized and scientifically validated yoga protocols, contributing substantially to the acceptance of yoga as an evidence-based therapeutic modality. Through the work of Dr. Nagarathna, yoga therapy was successfully applied to chronic diseases, mental health disorders, and lifestyle-related conditions. Dr. Nagendra introduced methodological rigor and reproducible research frameworks, while Dr. N.V. Raghuram expanded research into yoga genomics and molecular mechanisms underlying yoga's health benefits. The Integrated Yoga Therapy (IYT) model, implemented through the Arogyadhama health center, demonstrated the effectiveness of combining traditional yogic practices with modern medical approaches. VYASA's international collaborations, academic programs, and research initiatives have significantly influenced global yoga education and healthcare integration.

CONCLUSION: VYASA represents a landmark institution in modern yoga history, successfully integrating ancient yogic wisdom with contemporary scientific inquiry. Through interdisciplinary research, standardized therapeutic protocols, and comprehensive educational initiatives, the institution has enhanced the scientific credibility of yoga and expanded its application within healthcare and higher education. Its continued contributions to yoga research, therapy, and global collaboration demonstrate the enduring relevance of a holistic, evidence-based approach to health and human well-being.

Introduction

The Vivekananda Yoga Anusandhana Samsthana (VYASA) has pioneered research demonstrating yoga's efficacy in managing chronic diseases, psychological disorders, and lifestyle-related conditions. Dr. Nagarathna's extensive research portfolio includes studies on yoga interventions for cancer, diabetes, cardiovascular diseases, and mental health conditions [1].

In the landscape of modern yoga institutions, the Vivekananda Yoga Anusandhana Samsthana (VYASA) stands as a beacon of scientific inquiry integrated with spiritual wisdom. Established during a period when yoga was transitioning from purely traditional practice to evidence-based healthcare intervention, VYASA has played a crucial role in bridging ancient yogic wisdom with contemporary scientific methodology [2]. Founded in 1986 by Dr. H.R. Nagendra and Dr. R. Nagarathna, VYASA has emerged as a globally recognized center for yoga research, education, and therapy.

Foundational Vision and Early Years

VYASA's establishment was deeply influenced by Swami Vivekananda's vision of harmonizing spiritual knowledge with scientific investigation. The institution's founders sought to actualize Vivekananda's call for rigorous inquiry into yogic practices, moving beyond anecdotal evidence to establish empirical foundations for yoga's therapeutic efficacy [2].

Dr. H.R. Nagendra, a mechanical engineer turned yoga researcher, brought a unique scientific perspective to yoga studies. His engineering background provided methodological rigor to yoga research, enabling the development of standardized protocols and measurable outcomes [3].

Dr. R. Nagarathna, MD, FRCP, D.Sc., complemented this vision with her medical expertise. A distinguished physician and yoga therapist, Dr. Nagarathna has dedicated her career to demonstrating yoga's clinical applications across various medical conditions [1], [4].

Dr. N.V. Raghuram has emerged as a key figure in VYASA's evolution and global expansion. As International Coordinator of Vivekananda Yoga University (VaYU), Dr. Raghuram has been instrumental in expanding VYASA's international presence and academic reach [6], [7]. A molecular biologist by training, Dr. Raghuram brings expertise in yoga genomics and molecular mechanisms underlying yoga's therapeutic effects. He has been actively involved in the Yoga Bharati Movement since 2003, promoting yoga education and research globally [6].

Institutional Development

Founded in 1986 in Bangalore, India, VYASA began as a research institution focused on the scientific study of yoga. The organization's commitment to academic excellence and rigorous research led to its recognition as a Deemed-to-be-University by the University Grants Commission of India, marking a significant milestone in yoga education [2].

Recognizing yoga's universal relevance, VYASA extended its reach internationally. The establishment of VYASA USA and affiliated centers worldwide enabled the dissemination of scientifically validated yoga practices across diverse cultural contexts [2].

Under Dr. Raghuram's international coordination, VYASA has expanded its global footprint significantly, establishing partnerships with universities and research institutions worldwide [6].

Research and Academic Contributions

Dr. Raghuram's contributions to yoga genomics have opened new frontiers in understanding yoga's mechanisms at the molecular level. His research explores how yoga practices influence gene expression, cellular aging, inflammation markers, and metabolic pathways [7].

These programs emphasize both theoretical understanding and practical competence, ensuring graduates can effectively integrate yoga into therapeutic and educational settings. Under Dr. Raghuram's international coordination, these programs have been adapted for global audiences while maintaining rigorous academic standards [6].

Therapeutic Model and Clinical Applications

VYASA's therapeutic model, developed primarily under Dr. Nagarathna's leadership, integrates traditional yogic practices with modern medical understanding. This approach, known as Integrated Yoga Therapy (IYT), combines asanas (postures), pranayama (breathing techniques), meditation, and lifestyle modifications tailored to individual patient needs [1].

Under Dr. Nagarathna's medical directorship, Arogyadhama has served thousands of patients with chronic and lifestyle-related diseases [1].

One of VYASA's most significant contributions has been the standardization of yoga practices for research and clinical application. Dr. Nagendra's engineering background proved invaluable in developing measurable, reproducible yoga protocols that could withstand scientific scrutiny [3].

Dr. Nagarathna's work has particularly emphasized psychoneuroimmunology, exploring how yoga practices influence the complex interactions between psychological processes, nervous system function, and immune responses [4].

In his influential book The Quantum Doctor: A Physicist's Guide to Health and Healing [5], he presents a quantum physics-based framework for understanding mind-body medicine that resonates with VYASA's integrate approach.

Educational Philosophy and Pedagogy

While grounded in scientific methodology, VYASA maintains deep respect for traditional yoga lineages. The curriculum integrates classical texts such as the Yoga Sutras of Patanjali, Bhagavad Gita, and Upanishads with contemporary research findings, creating a comprehensive knowledge base [2].

Notable Achievements and Recognition

Dr. Nagarathna's contributions have earned numerous accolades, including her Doctor of Science (D.Sc.) degree, Fellowship of the Royal College of Physicians (FRCP), and recognition as a pioneering researcher in integrative medicine [1], [4].

VYASA's designation as a deemed university represented official recognition of its academic rigor and contribution to higher education [2].

Legacy and Influence

VYASA's success has inspired similar institutions worldwide, demonstrating the viability of integrating rigorous scientific research with traditional wisdom practices [2].

Conclusion

The Vivekananda Yoga Anusandhana Samsthana represents a pivotal institution in modern yoga history, successfully bridging ancient wisdom and contemporary science. Founded on Swami Vivekananda's vision, VYASA has evolved from a research center into a comprehensive university offering education, clinical services, and scientific investigation.

Under the leadership of Dr. H.R. Nagendra and Dr. R. Nagarathna, VYASA established yoga as a credible, evidence-based therapeutic modality through standardized protocols, interdisciplinary research, and clinical validation. The institution has demonstrated that traditional practices can withstand scientific scrutiny while retaining their transformative potential.

As healthcare systems recognize the limitations of purely biomedical approaches, VYASA's integrated model offers a compelling alternative addressing body, mind, and spirit. Its global expansion has facilitated cross-cultural research collaboration and enriched understanding of yoga's universal applications.

VYASA's legacy extends beyond publications and practitioners, it has fundamentally reshaped how yoga is understood and applied in contemporary contexts. As we face 21st-century health challenges from chronic diseases to mental health crises, VYASA's holistic, evidence-based approach becomes increasingly relevant.

In honoring its past while innovating for the future, VYASA embodies yoga's dynamic tradition: rooted in timeless principles yet continuously evolving to meet contemporary needs. The institution's history testifies to the enduring value of integrating ancient wisdom with modern knowledge in pursuit of health, healing, and human potential.

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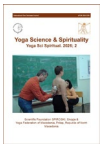

The History of Scientific Yoga

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Abstract

BACKGROUND: The emergence of scientific yoga represents a significant milestone in the transformation of yoga from a traditional spiritual discipline into an evidence-informed approach for health promotion, disease prevention, and rehabilitation. Although the therapeutic potential of yoga has been recognized in classical yogic literature for centuries, the systematic scientific investigation of yoga began only in the nineteenth century. Understanding the historical origins and development of scientific yoga is essential for appreciating its current role in modern medicine and integrative healthcare.

AIM: To examine the historical foundations of scientific yoga by identifying the pioneering individuals, publications, institutions, and milestones that contributed to the emergence and evolution of scientific yoga from the mid-nineteenth century to the establishment of specialized research institutions.

METHODS: A historical narrative review was conducted using published books, historical documents, classical yoga texts, scientific publications, memoirs, and archival sources related to the early development of scientific yoga. Particular attention was given to the contributions of pioneering physicians, yoga scholars, and institutions that promoted scientific investigation of yogic practices.

RESULTS: The review identifies Dr. N. C. Paul's A Treatise on the Yoga Philosophy (1851) as the first known scientific attempt to explain yogic practices using contemporary medical and physiological concepts. His work represented a turning point in introducing yoga into scientific discourse despite considerable skepticism from contemporary medical circles. The historical analysis further highlights the influence of Swami Vivekananda in creating an intellectual environment favorable to scientific inquiry, followed by the establishment of pioneering research institutions, including The Yoga Institute and Kaivalyadhama, which laid the foundations of modern scientific yoga. Additional contributions from Western physicians investigating yogic breathing techniques demonstrated growing scientific interest in the physiological and therapeutic effects of yoga. The gradual progression from isolated observations to organized scientific research culminated in the establishment of specialized yoga research centers and international scientific collaboration, ultimately leading to the rapid expansion of yoga research during the early twenty-first century.

CONCLUSION: Scientific yoga emerged through the convergence of traditional yogic knowledge and modern scientific investigation. The pioneering efforts of early physicians, yoga masters, and research institutions established the foundations for contemporary evidence-based yoga research. Recognition of this historical development provides important insight into the evolution of yoga as a scientifically investigated complementary healthcare discipline and underscores the lasting importance of interdisciplinary collaboration between Eastern yogic traditions and Western medical science.

Introduction

It is essential to appreciate the importance of a historical perspective, not merely for the documentation of historical facts, but more importantly for understanding the civilizational development of a significant cultural phenomenon whose origins are as ancient as civilization itself.

Another important consideration is that, from its very inception, scientific yoga has possessed the capacity to contribute to the improvement of human health, both therapeutically and rehabilitatively.

A further significant point is the fact that the therapeutic dimension of yoga is not the result of recent “modern” developments.

At this stage, it is important to emphasize that this does not represent a new orientation within yoga. On the contrary, the therapeutic potential of yoga has deep historical roots.

Classical Haṭha Yoga texts, such as the *Haṭha Yoga Pradīpikā*, *Gheraṇḍa Saṁhitā*, *Śiva Saṁhitā*, and others, contain clear indications regarding specific yogic techniques that may possess therapeutic properties. In other words, these characteristics have been recognized for centuries.

A more careful and in-depth analysis reveals

that the roots of psychosomatic disorders are already addressed in the earliest systematic treatise on yoga, *Patañjali's Yoga Sūtras*, particularly through concepts such as *yama*, *niyama*, and the *pañca kleśas* (five afflictions).

It is necessary to distinguish a preliminary period in the development of scientific yoga, during which the first attempts emerged to formulate what might be termed a "scientific perspective" aimed at explaining the techniques of Haṭha Yoga through a scientific framework.

The aim of this study is to identify and highlight the events, organizations, and individuals that have played a significant role in the development of scientific yoga. More than 175 years have passed, and as time moves on—as has been observed in the case of other spiritual traditions—it is very easy for everything to inevitably fade into oblivion.

N. C. Paul and the First Scientific Analysis of Yoga (1851)

The first known attempt at a scientific analysis of yoga was made by a Bengali Indian physician in 1851 through the publication of "A Treatise on the Yoga Philosophy" [1].

His name was Nobin Chunder Pal, also frequently referred to as Nabina Chandra Pala, until he later adopted the Anglicized form N. C. Paul.

Regarding his date of birth, some discrepancies exist. Several sources cite the year 1829; however, William C. Broad, in "The Science of Yoga: The Risks and the Rewards" [2], indicates a lifespan of approximately 1820–1880. Based on records showing that Paul graduated from the Bengal Medical College in Calcutta in 1841, the 1829 birth date would imply that he obtained his medical degree at the age of twelve.

During his medical studies at Bengal Medical College in Calcutta, Paul had the opportunity to serve as an assistant surgeon. This experience enabled him to approach yoga from a scientific perspective and to describe the processes of this ancient system using contemporary scientific terminology.

Thus, the foundations were laid. However, if one seeks to remain fully objective, it must be emphasized that traditional yoga—particularly Haṭha Yoga—constitutes a rich source of preventive and therapeutic elements and represents the true foundation of yogic therapy.

Paul's work undoubtedly contributed to bridging a period during which yoga was viewed with suspicion, contempt, and skepticism by scientific and medical circles. At the time, Haṭha Yoga practices—including āsanas, prāṇāyāma, bandhas, mudrās, and related techniques that had become known in the West—were often dismissed as outdated, anachronistic, and unscientific.

Over time, yoga gradually attracted scientific interest, becoming the subject of systematic research and increasingly being implemented as a complementary approach for prevention and therapy. Paul's work represents the first pioneering effort to present yoga from a scientific perspective.

From Skepticism to Scientific Recognition

The limited assessments available from that period reveal the gradual emergence of profound transformations in attitudes toward yoga during the early twentieth century. Such fundamental changes occurred slowly. Approximately seventy years elapsed before the establishment of specialized first yoga research centers, another fifty years before the organization of the first scientific yoga congress [3], and a further thirty-five years before the "explosion" of scientific research on yoga observed during 2003–2004 [4].

It is important to recognize how far the field has progressed from earlier definitions of yoga found in various encyclopedias. For example, the "Great Soviet Encyclopedia" described yoga as "the darkest form of mysticism" [5]. Such characterizations significantly influenced the official scientific attitudes of countries sharing a similar philosophical orientation.

The beginning of the twentieth century created new conditions that facilitated the emergence of scientific works aimed at presenting and explaining yoga through the lens of modern science.

The Pioneers of Modern Scientific Yoga

It was no coincidence that the yogic tradition itself created the conditions that encouraged modern yoga teachers to engage in scientific inquiry and to bridge the gap between ancient tradition and contemporary science. From the school of the renowned yoga master Paramhansa Shrimad Madhavadasji [6] emerged two of the greatest pioneers of scientific yoga: Shri Yogendra and Swami Kuvalayananda. Each followed a distinct path in the development of scientific yoga.

I had the privilege and honor of visiting both institutions in 1994 and meeting the spiritual leaders, educational staff, and research personnel associated with them. This experience enabled me to appreciate firsthand their value and historical significance.

In the interest of objectivity, one should not overlook the contribution of another influential figure to

the scientific orientation of yoga, although such a contribution might not be immediately expected.

That individual was Swami Vivekananda [7], an outstanding representative of the traditional yogic tradition. Nevertheless, his influence in the late nineteenth and early twentieth century, particularly through his presence in the West, deserves recognition. He was not only instrumental in introducing the philosophy of yoga and Vedānta to Western audiences but also left a lasting imprint on the emergence of later exponents of scientific yoga. The precise extent of this influence remains a subject that warrants further scholarly investigation.

The real beginning of what we call the period of scientific yoga occurred with the appearance on the historical scene of Jayadeva Yogendra (1918), Swami Sri Kuvalayananda (1924), and their yoga institutions: the Yoga Institute of Bombay and the Kaivalyadhama Institute of Lonavala. They constitute the foundation of all future developments that would create the new scientific culture of yoga.

Helena P. Blavatsky and the Reception of N. C. Paul's Work

A characteristic moment is the reaction of Helena Petrovna Blavatsky, one of the founders of the Theosophical Society, to the book by N. C. Paul. Although at first she believed that the author of the book was an Englishman, she was deeply impressed by it. Mrs. Blavatsky quickly recognized the book's importance and significance."

What particularly impressed her was the way in which this pioneering work attempted to explain and understand the mystical phenomena performed by yogis, such as levitation, the experience of samadhi, prolonged hibernation, as well as the processes of gas exchange in the lungs. It is evident that Paul did not use any complex equipment at that time, relying instead largely on his own assumptions.

As evidence that she attached great importance to these accounts and to the scientific approach of Dr. Paul’s book, Blavatsky presented them in the theosophical journal The Theosophist, accompanied by her own comments [8].

Opposition from the Medical Establishment

One important event worth mentioning from a historical point of view is the extremely negative reaction of official Indian medical circles to the author's and Dr. Paul's book. Some sources claim that the book was burned, but this assertion has not been corroborated by other relevant historical sources. It may be true, but it may also be merely a historical myth. It is more likely that the book was banned rather than destroyed by burning.

This event was described by Madame Blavatsky herself in her book From the Caves and Jungles of Hindostan.

"The chief inspector of the medical department, considering Dr. Paul's pamphlet to be 'a direct slap in the face of science in its physiological and pathological fields,' ordered all published copies of it to be bought from private owners at a high price and publicly burned, no doubt as a sacrifice to science. As a result, the pamphlet became a rarity. Of the few copies that were saved, one is to be found in the library of the Maharaja of Benares [9] and another was given to me by the Takur."

Unfortunately, this tragic event was a sign—a foreshadowing of the conflict and challenges to yoga that would follow over the next 150 years and beyond.

N. C. Paul's Encounters with Yogis and Captain Seymour

As for Dr. Paul himself, sources claim that he had been involved with yoga for 35 years [10]. He met and followed various yogis, although at that time it was not easy to penetrate the mystical circles of yogis and fakirs. One example is the well-known Captain Seymour, a British officer who, fascinated by yoga, devoted himself entirely to its practice, abandoning the British colonial army.

Official military and administrative circles considered him insane, placed him in an institution for the mentally ill, and sent him back to England. Seymour, however, found a way to return to India, where he was again captured and sent back to England. Eventually, after some time, Seymour returned once more to India and sought refuge in the Himalayas. From there, he sent a letter to the Governor-General of India, stating that he was not insane and that he intended to remain there [11].

I mention all of this because N. C. Paul may have been the only person who remained in contact with him until the end of Seymour’s life. It appears that they were evidently closely associated, while on the other hand, the English yogi represented a gateway through which Paul gained access to yogic circles that were otherwise impenetrable to outsiders.

Lasting Influence of *a Treatise on Yoga Philosophy*

The book by N. C. Paul left a deep and long-lasting mark in both scientific and spiritual circles in India. It served as evidence that everything which had circulated as stories and legends about the powers of yogis was now being examined and explained. What is

surprising — without any particular intention on my part to evaluate the statements in his book — is the fact that, despite 35 years of experience and meetings with yogis, it is difficult to understand his definition of yoga as nothing more than “prolonged sleep.”

Another important moment that provides additional information about N. C. Paul’s book is revealed by Mary K. Neff in 1935 [12], with the publication of her book Personal Memoirs of H. P.Blavatsky, where we find her comments on parts of the book.

Mary Neff’s statement is particularly characteristic: “N. C. Paul, G.B.M.C. wrote a small, but very scientific pamphlet. He was only a regimental surgeon in Benares, but his name was well known among his compatriots as a very learned specialist in physiology. The pamphlet was called A Treatise on the Yoga Philosophy and produced a sensation.”

It is evident that the book had a longer-lasting echo in the medical circles of that time and did not remain only an initial impression.

Early Medical Applications of Yogic Breathing Techniques

In 1872, the prominent Philadelphia physician Dr. William G.A. Bonwill, [13] an American dentist and researcher, successfully utilized breathing techniques resembling those of pranayama. These experiences were published in the scientific journal New York Medical Record, in the September 1888 issue, in an article entitled “A New and Curious Plan Deadening Pain” [13].

Several years later, another important moment occurred. In 1875, Dr. Addinell Hewson, a prominent dentist and researcher from Philadelphia, shared his positive experience at the International Medical Congress. He also presented them at a meeting of the Philadelphia County Medical Society, where several papers discussed the practice of respiratory techniques aimed at reducing or completely eliminating pain [14].

According to Madame Blavatsky, the work of Dr. Bonwille and Dr. Addinell Hewson represented an important step in understanding how breathing techniques could be used to expand human capabilities and alleviate pain.

Conclusion

To conclude, we can say that several Western doctors and Eastern yogis, despite working independently and in different cultural traditions, shared a common understanding of the importance of controlled breathing in improving health and reducing pain.

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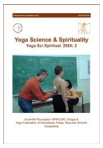

Clash and Synthesis of the Spiritual Traditions of the East and the West

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Abstract

BACKGROUND: The encounter between Eastern and Western spiritual traditions has generated significant discussion, particularly among Christian practitioners of yoga who may perceive a tension between their religious beliefs and the Eastern origins of yoga. Understanding the nature of spirituality, its relationship to religion, philosophy, and science, and the historical interactions between Eastern and Western cultures is essential for overcoming misconceptions and fostering intercultural dialogue.

AIM: To explore the concept of spirituality beyond religious boundaries, examine the differences between Eastern and Western approaches to spiritual understanding, and analyze the historical contacts and mutual influences between Eastern and Western traditions.

METHODS: A narrative and philosophical analysis was conducted based on historical, cultural, and spiritual perspectives. The study examined concepts of spirituality in relation to religion, philosophy, and science, compared Eastern and Western attitudes toward spiritual diversity and tolerance, and reviewed historical accounts of intercultural exchanges between Eastern and Western thinkers and traditions.

RESULTS: Spirituality emerged as a broader concept than religion, philosophy, or science, emphasizing self-knowledge and inner transformation as pathways to understanding reality. Eastern traditions generally demonstrated greater acceptance of multiple paths to spiritual realization, fostering tolerance and dialogue among diverse beliefs. In contrast, Western traditions were often characterized by stronger exclusivist tendencies and less openness toward alternative viewpoints. Historical evidence suggests that meaningful contacts between Eastern and Western cultures existed long before the modern introduction of yoga, including exchanges involving philosophers, spiritual seekers, and travelers that contributed to the transmission of ideas and practices across civilizations.

CONCLUSION: Spirituality represents a universal human pursuit that transcends religious, philosophical, and scientific frameworks. The dialogue between Eastern and Western traditions reveals both differences and complementary perspectives regarding self-realization, truth, and human development. Greater awareness of their historical interactions and shared spiritual aspirations may contribute to mutual understanding, intercultural respect, and a more inclusive approach to spirituality in the contemporary world.

Introduction

When we hear the words East, West, and spirituality, various images, ideas, and associations arise in our minds. Some yoga practitioners have a clash within because they belong to the Christian faith. Although it is well known that the yoga we teach has no religious character, the awareness that its roots come from the East, from a cultural and spiritual environment connected to Hinduism and other Indian traditions, can still create an inner conflict: how can one coexist with the other? [1].

In such an encounter between the East and the West, it is important to clarify the mutual spiritual influences. We need to understand what the East and the West mean in relation to Christianity. Christianity is a religion that became widespread in the West, yet its roots are in the Middle East [2].

In this context, our region belongs to the Eastern tradition of Christianity. There are clear differences between the perspectives of Western Christianity and Eastern Christianity when it comes to the understanding of spirituality. The Balkan region has always stood at the crossroads of these influences, which have often expressed themselves through tension and conflict [3].

What Is Spirituality?

When discussing this topic, I believe we should first define spirituality, not only in terms of where it originates, but what it truly means and how it is expressed. Spirituality does not have to be connected

to any religion, nor does its fulfillment have to take place through religious forms.

The atheistic approach to spiritual practice is not a product of modern times; it has existed for centuries. Examples include the philosophical system of Sāṁkhya, as well as Buddhism and Jainism. These were not religious systems in the way we understand theistic traditions, but rather non-theistic paths. It is important to clarify that these systems were not atheistic in the sense of denying God. Instead, they held that human realization and the acquisition of knowledge do not necessarily have to be achieved through a personal relationship with what we call God or the Absolute [4], [5].

Once we begin to name that which cannot truly be named, we open a new space of questions: What is the goal of spirituality? Why does a person choose this path? What do they seek, and what do they hope to accomplish?

Religion in our culture means central belief in God, and knowing him. A person's relationship with a higher entity understood as God is regulated by specific rules and canons, represented by messiahs, such as Abraham, Moses, or Muhammad. By following the religion's principles and positive behavior, people believe they can develop the qualities to know God.

This is undoubtedly one valid approach, but it is not the only one.

A person should seek not only what is above them, but also what exists deep within. I emphasize this point because I believe that no one can truly find anything unless they first find themselves. For me, spirituality goes beyond what religion represents and beyond what philosophy alone can offer. Philosophy expresses the human desire to uncover the laws that govern the world and the universe at all levels through the power of thought. It assumes that reality can be touched, grasped, and understood through reflection and observation. Cultures in both the East and the West have developed rich philosophical traditions, from ancient India and China to Europe. Philosophy has always been respected, both in the past and today, for the knowledge it brings and for its attempts to interpret the world [6].

Science emerged from philosophy and developed into many branches and sub-disciplines that aim to objectively explore and uncover the structure of the world and the laws that govern it, using tools it has developed itself. Recently, science has gained exceptionally high prestige. It is believed that science should provide answers to the fundamental concerns. Science stands on the front line, bringing insights due to new technologies, new experiences, and expanding knowledge, helping us understand the world that surrounds us [7].

Yet, it's not only the external world that humans are interested in, but the inner world as well. We are interested in spirituality and the inner, spiritual world. Spirituality goes a step further in the pursuit of knowledge, stating that what happens externally is organically connected to what happens internally or, more precisely, that the outer world is a reflection of what exists within us. This is why we say that spirituality is something more than religion, more than philosophy, and more than science [8].

Differences Between the East and the West

Recently, science has gained particular importance, philosophy has once again come to the foreground, and religion has regained a central role as well. This is not accidental. Humanity, more than ever before, feels the need to discover the truth. It is a fact that many people have found answers and personal fulfillment through the religious paths of Hinduism, Buddhism, Jainism, Taoism, Confucianism, Shintoism, Zoroastrianism, as well as Christianity, Islam, and Judaism [9].

However, religions have not fully fulfilled either their social or their spiritual goals, as they have also created much suffering and pain, all in the name of God, love, and peace.

So, why is spirituality something more than religion?

Religion functions well when it is turned inward, focused on its own system and believers. However, when we analyze its relationship toward other beliefs, other religions, or toward those who do not believe at all, its limitations become evident. It is precisely here that clear differences between the East and the West emerge.

The Western approach is often marked by intolerance and a lack of understanding toward other forms of belief and non-belief. Those who do not share the same faith are frequently perceived as being under the influence of negative forces. There is little attempt to understand that, at the core, it's something similar or the same.

In discussions, there is a persistent effort to convince the other of one's own truth, as if that truth were the only valid one. If such intolerance existed in the East, one could only imagine the scale of wars and conflicts that would arise. India alone contains an immense diversity of languages, beliefs, religions, and even different schools within the same spiritual paths. Constant conflict would be inevitable. Yet this is not the case. Eastern tolerance is not accidental. It does not arise solely from mentality or character, but from a deep understanding that experiences can differ and that paths toward realization can be many. There is an awareness that nature itself expresses through countless forms, and that truth is not limited to a single expression [10].

In the West, shaped by stronger egocentric tendencies, we struggle to accept opinions that differ from our own, even when the difference is minimal. The East, by contrast, carries a different cultural attitude: greater humility, a more restrained ego, and a willingness to listen before imposing one's own view. Because of this, it is no coincidence that various spiritual schools in the East have developed strong traditions of dialogue and debate. In Tibetan and Indian traditions, there are well-known methods through which representatives of different spiritual lineages engage in discussion and debate on the same spiritual questions [11].

In the West, such a tradition is almost nonexistent. Here, everyone is expected to agree, to belong to the same belief system, much like a modern ideology. Whoever thinks differently is no longer considered one of us and cannot stand alongside us. They are quickly labeled as the other, or even as an enemy.

Contacts

There have been contacts between the East and the West in the past, and they are not something new. For example, we know that yoga was introduced to the West about a hundred years ago [12].

But their mutual contacts are much older, and this is a particularly fascinating subject for research. People traveled mainly for economic exchange, but in addition there was also interest in culture and in different belief systems.

According to some texts, in the 5th century BCE Socrates met three Brahmins in Athens. This is quite surprising, since it was known that Indians traditionally rarely traveled outside India, and they certainly had a strong reason for that. Very little was recorded from that conversation, but it is certain that they did not agree on some matters and that the Brahmins told Socrates that a person cannot discover the truth unless they first come to know themselves. Perhaps the famous Socratic thought, "Know thyself," was influenced by them, but that is difficult to confirm.

There were other similar meetings as well. When Alexander the Great set out on his campaign to the East, he took philosophers with him, among whom was the famous Pyrrho. They invited various philosophers and yogis to join them [13].

In the period of pre-Aryan India, it is mentioned that in ancient Greece the god Dionysus traveled to India. But this belongs more to the realm of legend.

In ancient Egypt too, in the great spiritual centers, there was great interest in India. Many people dreamed of traveling to India. One such great journey was undertaken by the great ancient philosopher Apollonius of Tyana [14].

I do not know whether solely as a result of the experiences and knowledge he gained in India, or whether he already possessed something within himself, but he returned with remarkable knowledge and abilities and was able to perform miracles. As some researchers claim, many of those miracles are similar to those described in the Bible as being performed by Jesus.

These facts are not widely known, yet they are important in order to understand the depth, complexity, and history of spirituality.

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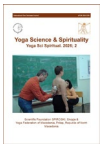

The International Journal of Yoga Therapy (IJYT): A Historical and Thematic Review of its Scientific Contribution and Academic Development

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Abstract

BACKGROUND: Yoga therapy has become an increasingly recognized complementary approach in modern healthcare, with growing scientific interest in its applications for physical and mental health. The International Journal of Yoga Therapy (IJYT), published by the International Association of Yoga Therapists (IAYT) and indexed in PubMed/MEDLINE and Scopus, serves as an important peer-reviewed platform for scholarly and evidence-based research in this field.

AIM: This review examines the scientific contribution and academic development of the IJYT, including its historical evolution, thematic orientation, editorial scope, and continuing role in advancing yoga therapy and integrative healthcare research.

METHODS: A qualitative, literature-based historical and thematic review was conducted to examine the journal's development, publication scope, and thematic focus based on available editorial, bibliographic, and journal-related sources.

RESULTS: IJYT has maintained a consistent publication record as a specialized journal in yoga therapy, featuring research ranging from clinical applications to conceptual, philosophical, and methodological discussions. The journal demonstrates a recurring integration of scientific and traditional yogic perspectives, while its indexing in PubMed/MEDLINE and Scopus and its association with a professional organization contribute to its academic visibility and relevance within the field.

CONCLUSIONS: IJYT plays an important role in the development and dissemination of yoga therapy research within integrative medicine. Its continued publication supports the advancement of evidence-based knowledge and contributes to the academic and clinical growth of the field.

Introduction

Yoga therapy is an emerging field within integrative healthcare that applies yoga principles and practices in a structured therapeutic context to support physical, psychological, and behavioral well-being [1]. Unlike conventional biomedical approaches that primarily focus on symptom reduction, yoga therapy emphasizes individualized assessment, lifestyle modification, and active patient participation [2]. Yoga therapy is increasingly recognized as a holistic therapeutic approach that integrates physical, mental, and behavioral dimensions of health through the individualized application of yogic practices [3].

Within this field, the *International Journal of Yoga Therapy* (IJYT) functions as a key academic platform for research dissemination, clinical reporting, and theoretical reflection [4]. Over time, it has contributed to the development and formalization of yoga therapy as both a clinical practice and a scholarly discipline, reflecting its historical evolution, editorial maturation, and indexing in major biomedical databases such as MEDLINE/PubMed and Scopus [5].

Theoretically, yoga therapy is situated within integrative health models such as mind–body medicine and the biopsychosocial framework, which conceptualize health as an interaction between physical, psychological, and social dimensions [6].

The aim of this study is to provide an overview of the thematic and scholarly development of IJYT, with a focus on identifying dominant conceptual patterns

within the journal's discourse on yoga therapy.

Materials and methods

This study employed a qualitative, literature-based historical and thematic review design focused on IJYT. Relevant publications from the journal, together with official journal information and publicly available bibliometric sources, were identified and examined.

Inclusion criteria focused on publications explicitly addressing yoga therapy and topics related to the historical development, thematic orientation, and scientific positioning of the journal, while irrelevant or non-related publications were excluded.

A thematic analysis was conducted through systematic reading, coding, and categorization of the selected textual material [7]. The identified themes were organized to reflect recurring conceptual tendencies, clinical applications, and the broader development of yoga therapy as presented within the journal.

As the study was based exclusively on published literature, ethical approval was not required.

Results

Historical and Institutional Development

The *International Association of Yoga Therapists* (IAYT), based in the United States, was founded in 1989 by Larry Payne, PhD, and Richard Miller, PhD, and played an important role in the institutionalization and professionalization of yoga therapy as a distinct field. The organization initially focused on building a professional community, developing standards for yoga teaching and therapy, and establishing platforms for knowledge dissemination [8].

The journal that later became the *International Journal of Yoga Therapy* (IJYT) originated in the 1990s under the title *Journal of the International Association of Yoga Therapists*. Larry Payne, PhD, served as IAYT's founding president and publisher, while Richard Miller, PhD, served as the founding editor of the *Journal of the International Association of Yoga Therapists*. In 1999, during a structural transition in which IAYT operated within the Yoga Research and Education Center (YREC), the journal was renamed IJYT [8], [9].



Figure 1: Visual identity and publication development of IAYT and IJYT, including organizational logos and selected journal covers from different publication periods

An institutional development occurred in the mid-2000s, when editorial structures became more formalized and an editorial board and peer-review panel were introduced, gradually transitioning the journal toward a fully peer-reviewed academic publication model [9].

IJYT further strengthened its academic profile through increasing visibility in major scientific databases [5], [9].

IJYT is currently indexed in MEDLINE/PubMed [5] and Scopus [10] and is published annually. Articles are released online continuously upon acceptance, ensuring ongoing dissemination of research in yoga therapy. The journal includes original research, reviews, methodological papers, and theoretical perspectives relevant to all traditions of yoga therapy [9].

The editorial leadership of IJYT has evolved over time, reflecting the growing scientific scope of the field. Richard Miller, PhD, served as the founding editor during the journal's first six years, followed by Steven Kleinmann, MD, for the subsequent two years. Editorial responsibility was later assumed by Georg Feuerstein, PhD, and later Trisha Lamb, who continued the journal's scholarly development and mission. The journal is currently led by Editor-in-Chief Sat Bir Singh Khalsa, PhD, and Associate Editor Catherine Justice, DPT, PT, C-IAYT. Dr. Khalsa is a prominent researcher in yoga therapy and mind–body medicine and Assistant Professor of Medicine at Harvard Medical School, whose scientific work has significantly contributed to the growing academic and clinical recognition of yoga-based interventions. Dr. Justice's work spans academic and clinical spaces, where she focuses on the intersections of whole person, integrative healthcare models, trauma informed care, and health

equity. Under their direction IJYT continues to strengthen its integration within academic and clinical research networks in complementary and integrative health [9], [10].



Figure 2: Current editorial leadership of IJYT: Sat Bir Singh Khalsa, PhD, Editor-in-Chief (left), and Catherine Justice, DPT, PT, C-IAYT, Associate Editor (right). (Source: Harvard Medical School; IAYT editorial information)

Bibliometric Profile and Scientific Positioning

IJYT represents both an academic publication and an institutional outcome of the broader development of yoga therapy under IAYT, functioning as a platform for the consolidation of research, clinical practice, and theoretical discourse in the field. [8] In addition to its annual volume, the journal publishes an electronic supplement featuring abstracts from the International Association of Yoga Therapists' Symposium on Yoga Therapy and Research (SYTAR) and the Symposium on Yoga Research (SYR). [3], [8] IJYT has been published since 1990 and comprises 35 annual volumes up to 2025, along with occasional special issues and symposium supplements. The journal publishes one main issue per year, with continuous online articles [4].



Figure 3: Year-wise publication output of IJYT (2016–2025), illustrating fluctuations in the number of articles published annually. Data were compiled from official journal volume records

Thematic content published in IJYT spans research articles, clinical studies, case reports, editorials, reviews, and theoretical, philosophical, and practical perspectives on yoga therapy, highlighting the journal's role in supporting both scholarly inquiry and professional practice. Since 2009, IAYT has published a separate triannual print and electronic magazine, Yoga Therapy Today (YTT), which focuses exclusively on professional clinical practice; YTT continues the earlier publications Yoga Studies Online Journal and Yoga Therapy in Practice, which were produced from 2002–2005 and 2005–2009, respectively. A recurring thematic focus within the IJYT concerns issues and challenges related to the field of yoga therapy, including the integration of yoga into healthcare systems, professional challenges encountered by yoga therapists and teachers, and the relevance of traditional yoga philosophy to contemporary therapeutic practice. A major thematic focus is the therapeutic use of yoga for physical and mental health conditions. Another thematic focus is the development and validation of outcome measurement tools specific to yoga therapy. These contributions are grounded in relevant yogic texts and academic literature, reflecting the journal's emphasis on scholarly and evidence-informed discussion.

According to SCImago Journal Rank metrics (2024), the journal has an H-index of 21, an SJR score of 0.357, and is ranked in the second quartile (Q2) within the field of Complementary and Manual Therapy, reflecting its recognized scientific contribution to the development of yoga therapy and integrative healthcare. [9] The journal is also indexed in MEDLINE/PubMed and Scopus, enhancing its scientific visibility and international academic accessibility [5]. The 2024 2-year impact of International Journal of Yoga Therapy is 0.667 [11].

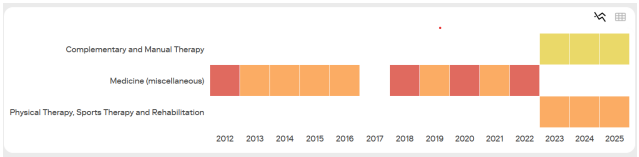

Figure 4: SCImago quartile rankings of IJYT across relevant subject categories. (source: SCImago Journal & Country Rank)

IJYT follows a continuous online publication model, where articles are published upon acceptance as they are processed, allowing for the rapid dissemination of research findings. Currently, the journal is accessible through individual IAYT membership (starting at USD 85 annually) or institutional subscriptions ranging from USD 200 to USD 280 per year [9]. IJYT content is also available through EBCSO's Alt HealthWatch database.

A dominant discursive pattern is the emphasis on the clinical and research-based framing of yoga therapy. The journal predominantly employs biomedical and psychological terminology, presenting yoga therapy as an evidence-informed intervention applicable to a range of health conditions, including mental health disorders, rehabilitation contexts, and chronic disease management. This reflects a broader tendency to align yoga therapy with the standards of

integrative medicine and clinical research, thereby enhancing its scientific credibility. At the same time, the discourse reveals a consistent integration of interdisciplinary perspectives, as IJYT incorporates philosophical and theoretical dimensions of yoga alongside clinical and empirical approaches, suggesting a hybrid epistemological framework. This dual orientation allows the journal to maintain continuity with traditional yoga concepts while simultaneously translating them into contemporary therapeutic and scientific language. Overall, the discourse of IJYT reflects an ongoing effort to bridge traditional yogic philosophy with contemporary scientific paradigms, positioning yoga therapy as both a holistic and evidence-based practice. At the same time, the journal contributes to strengthening the institutional and academic status of yoga therapy within the broader field of integrative health research [4], [9].

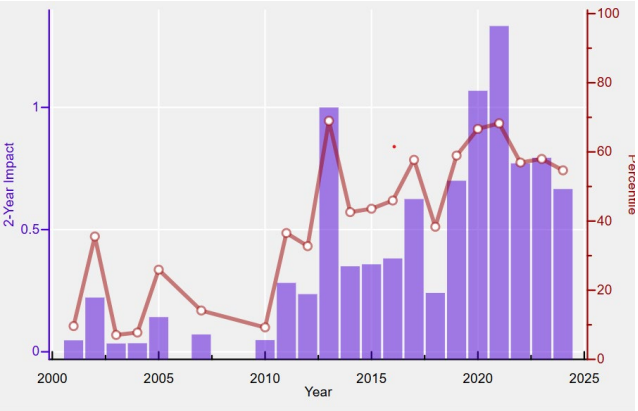

Figure 5: Trends in the bibliometric impact of IJYT, showing the journal's 2-year impact indicator and percentile ranking across the period 2000–2025 (Source: Exaly. International Journal of Yoga Therapy metrics (2026)

Beyond its role as a publication outlet, IJYT functions as an international communication hub for the yoga therapy community, facilitating knowledge dissemination and professional exchange through its close association with the IAYT [8], [9].

Discussion

IJYT holds a distinctive position within integrative and complementary medicine, functioning not only as a scientific journal but also as an important institutional driver in the professionalization of yoga therapy. Its bibliometric profile, including its Q2 journal ranking, suggests a stable and gradually strengthening presence within a specialized interdisciplinary field [11]. This broader trend is consistent with recent bibliometric analyses showing a substantial increase in yoga-related scientific publications and a growing integration of yoga research within medical and health sciences disciplines [12].

The journal's development over time, particularly the introduction of peer review and its indexing in MEDLINE/PubMed and Scopus, has contributed to its academic credibility and international reach [5], [9]. What emerges from this trajectory is a publication that increasingly connects clinical research with broader theoretical and experiential perspectives, positioning yoga therapy within both scientific and practice-oriented contexts.

Thematic analysis suggests a dual orientation within the journal's content. A substantial portion of the published work adopts biomedical and psychological frameworks, focusing on clinical outcomes and the application of yoga therapy across various health conditions. At the same time, the journal engages with traditional yogic concepts and philosophical perspectives, which are often presented alongside contemporary scientific approaches within a broader interpretive framework. This combination creates a space in which empirical research and traditional knowledge are brought into dialogue with one another.

Taking together, these elements suggest that IJYT contributes to shaping how yoga therapy is understood as a field. It supports not only the dissemination of research but also the gradual formation of a shared scientific and professional identity for the discipline. In this sense, its contribution goes beyond publication metrics, extending into the broader process of legitimizing yoga therapy within contemporary healthcare and academic systems [4], [9].

Future research should continue to strengthen the empirical foundation of the field through well-designed randomized controlled trials, while also working toward greater methodological consistency and inclusion of diverse populations and clinical settings.

Conclusion

Yoga therapy incorporates all of the practices of yoga, including asanas, pranayama, guided imagery (bhavana), and meditation within a holistic therapeutic framework. Evidence from publications in the IJYT suggests that yoga therapy has been used in the management of various chronic and non-communicable conditions, including diabetes, hypertension, cardiovascular disease, chronic pain, musculoskeletal disorders, anxiety, depression, and stress-related conditions. Studies have also explored its supportive role in cancer care and rehabilitation, showing the growing recognition of yoga therapy within contemporary integrative and complementary healthcare.

Through the dissemination of original research, systematic reviews, and clinical case studies, IJYT has contributed to the development of yoga therapy as a non-invasive and potentially cost-effective therapeutic intervention. In doing so, the journal supports the ongoing articulation of yoga therapy as both clinical practice and an academic field.

Overall, IJYT plays a central role in consolidating and advancing knowledge in yoga therapy, reflecting its gradual establishment as a recognized component of integrative medicine and scholarly inquiry.

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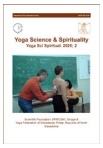

Book Review: The Yoga Science by Divyansh Sharma

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Abstract

Yoga Science by Divyansh Sharma is a contemporary guide that seeks to connect traditional yogic knowledge with modern scientific understanding. First published by Hay House India in 2025, the book presents yoga through the perspectives of anatomy, physiology, biomechanics, alignment, and health promotion. Organized into four major sections, it progresses from the historical foundations of yoga and the eight limbs of practice to detailed analyses of asanas and their effects on the body. A central focus of the book is the scientific explanation of how muscles, joints, and connective tissues function during yoga practice, helping readers understand both the execution and the purpose of proper alignment. The author also emphasizes injury prevention by identifying common technical errors and providing practical guidance for safer practice. Beyond the physical dimension, the book discusses the psychological benefits of yoga, including stress reduction, improved concentration, and enhanced mind–body balance. Written in a clear and accessible style, the text is suitable for beginners as well as experienced practitioners, although some sections become more technical when addressing anatomical and scientific concepts. While the spiritual and philosophical aspects of yoga receive comparatively less attention, the book successfully achieves its primary aim of presenting yoga as a science-based discipline. Overall, The Yoga Science is a well-structured and informative resource for readers seeking a deeper understanding of yoga, body mechanics, safe practice, and holistic well-being.

Bibliographic Details
Author: Divyansh Sharma
Title: *The Yoga Science: A Complete Guide to Strength, Flexibility, and Injury Prevention*
Publisher: Hay House India
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The Yoga Science by Divyansh Sharma is a comprehensive and insightful guide that explores the connection between traditional yoga practices and modern scientific principles. The book aims to bridge the gap between ancient wisdom and contemporary understanding of the human body, offering readers a deeper perspective on how yoga contributes to physical strength, flexibility, and overall well-being. The book is written and first published by Hay House India in 2025.

One of the main strengths of this book is its clear and structured approach. The author presents complex concepts in a simple and accessible way, making it suitable for both beginners and more experienced practitioners. The book is divided into several sections:

1. **Section, The Ancient Science of Yoga**
   - From Ancient Texts to Modern Practice: The evolution of Yoga
   - Ashtanga Yoga: Embracing Eight Limbs of Progression
2. **Section, Anatomy, Physiology, and Biomechanics of Yoga**
   - The Science-Backed Power of Yoga
   - The Many Dimensions of Health
   - Health and Safety in Your Yoga Practice:

Key Considerations
- Exploring the Basics of Yoga Alignment
- Exploring the Connection between Yoga and Organ Systems
- Core Concepts in Biomechanics

3. **Section, Untwining the Asanas**
   - Fundational Asanas: The Path to Inner Peace
   - Bowing to Stillnes: Forward-Bending Asanas for Mind and Body
   - Open Heart, Open Mind: Exploring Backward Bending Asanas
   - Vulnerability and Strength: Heart-Opening Asanas for Growth
   - The Art of Rotation: Exploring Twisting Asanas
   - The Power of Lateral Bending Asanas
   - The Mind-Body Connection: Stress Release through Hip-Opening Asanas
   - Strengthening Asanas: A Key Component for Holistic Health
   - Mastering Upside-Down Asanas
   - Finding Your Centre: The Science of Balance-Oriented Asanas
4. **Section, The Final Stretch**

This organization allows readers to gradually build their knowledge and understand how each element of yoga practice affects the body.

A key theme in the book is the scientific explanation behind yoga poses. Divyansh Sharma emphasizes how muscles, joints, and connective tissues work together during different movements. By explaining the biomechanics of each pose, the author helps readers understand not only how to perform the poses correctly but also why proper alignment is important. This scientific perspective makes the book particularly valuable for those who want to practice yoga safely and effectively.

Another important aspect of The Yoga Science is its focus on injury prevention. Many people practice yoga without fully understanding the risks of improper technique. The author addresses this issue by providing detailed explanations of common mistakes and how to avoid them. This makes the book not only educational but also practical. Readers can apply the knowledge directly to their own practice, reducing the risk of strain or injury.

In addition to the physical aspects, the book also highlights the mental and psychological benefits of yoga. It explains how regular practice can reduce stress, improve concentration, and promote a sense of inner balance. This holistic approach reflects the true essence of yoga, which is not just about physical exercise but also about achieving harmony between the mind and body.

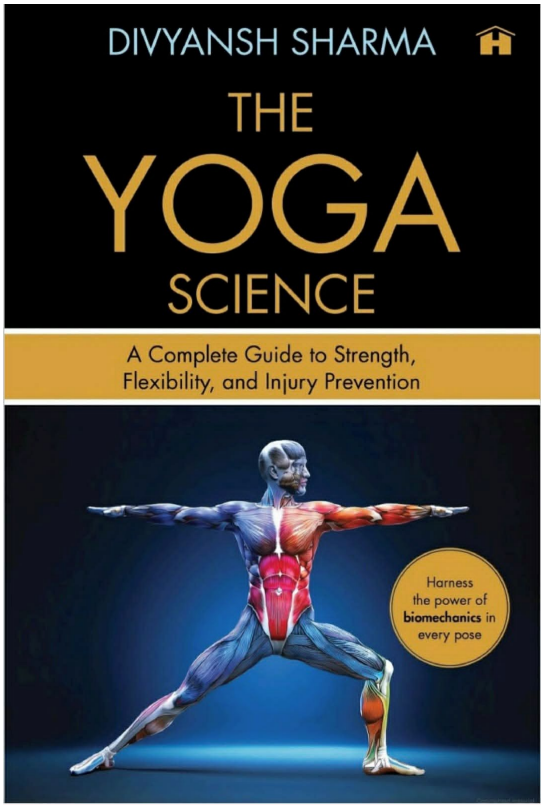

Figure 1: Cover page of the book The Yoga Science by Divyansh Sharma

The language used in the book is straightforward and easy to follow, although at times it can become slightly technical, especially when discussing anatomy and scientific concepts. However, this does not significantly reduce the readability, as the author makes an effort to explain difficult terms in a clear manner. The inclusion of practical examples and explanations further enhances understanding.

On the other hand, some readers might find that the book focuses more on the physical and scientific aspects of yoga rather than its spiritual side. While this approach is beneficial for those interested in anatomy and fitness, readers looking for a deeper exploration of yoga philosophy may find it somewhat limited. Nevertheless, the book successfully achieves its goal of presenting yoga as a science-based practice.

In conclusion, The Yoga Science by Divyansh Sharma is an informative and well-structured guide that combines traditional yoga knowledge with modern scientific insights. It is particularly useful for individuals who want to improve their practice, understand their bodies better, and prevent injuries. Despite its slight lack of focus on the spiritual dimension, the book remains a valuable resource for anyone interested in yoga and physical well-being.

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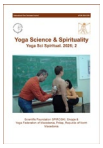

From Yoga to Acupuncture: A Journey of Integrative Medicine and Personal Development - Interview with Dr. Amalia Parousi, Acharne, Greece

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Abstract

This interview presents a retrospective account of a professional journey that began with medical studies in Skopje in the 1970s and developed into an integrative practice combining Western medicine, yoga, and acupuncture. It reflects the early development of organized yoga activities in Skopje and the establishment of structured training programs and professional societies. The narrative further describes the transition from yoga teaching to acupuncture practice, supported by medical education, international training, and professional engagement. It highlights the development of an integrative approach in which Western medicine, acupuncture, and yoga therapy are used in a complementary manner. The interview concludes with reflections on the value of combining traditional and modern medical systems in a holistic approach to health care.

1) Dr. Amalia, you are one of the first students of teacher Pavlos K. Hassanagas. You came to Skopje and began your studies at the Faculty of Medicine.

Could you tell us more precisely when you arrived in Skopje, how you adapted to the new environment, and what life and studying in Skopje were like?

I began my studies at the Faculty of Medicine in Skopje in February 1973 as an international student on a scholarship (Figure 1). Before starting my regular classes, I attended a program that helped foreign students adapt to their new environment and learn the Macedonian language.

During my studies, I lived in a student dormitory. Living in Skopje, a modern and vibrant city for its time, I felt warmly welcomed by both my fellow students and the local community.

At that time, Skopje was a true student city, attracting young people from many parts of the world, while its universities offered education in a wide range of scientific and academic fields. In such a multicultural environment, supported by the care and attention devoted to students' well-being, we had valuable opportunities to exchange cultural experiences and perspectives, broadening our understanding of both the world and our respective fields of study.

It was in this inspiring environment that the idea of integrating Western medicine with acupuncture and yoga first emerged—an idea that would later become an important part of both my professional career and my personal journey.

2) How and when did you learn about yoga? Have you already had any prior experience with it, or did you begin practicing it in Skopje?

Back in my high school years in my native Poland, I developed a strong interest in human potential, both physical and spiritual. I eagerly searched for answers to questions that had fascinated me from an early age, exploring books, magazines, and other available sources of information.



Figure 1: Dr. Amalia Parousi

However, at that time I had little opportunity to pursue these interests in practice or gain direct experience. The social climate in Poland then offered limited space for deeper engagement with such subjects and for exploring broader spiritual questions.

When I came to Skopje, an entirely new world opened up before me, one that naturally resonated with my interests. Early in my studies, while living in the student dormitory, I encountered a small group led by Pavlos Hassanagas that was devoted to yoga and yogic practices.

Thanks to the knowledge I had already gained through my independent study in Poland, I was eager to become part of that group. My genuine curiosity and desire to deepen my understanding of yoga, together with Pavlos's inspiring presence and guidance, motivated me from the very first sessions to dedicate myself fully to this practice and to explore its deeper dimensions.

3) You were one of the first students of teacher Pavlos, and later an assistant and yoga instructor. What was the level of interest in yoga in the 1970s?

As far as I know, foreign students also attended yoga classes, didn't they?

When our small group began to grow, yoga was still relatively unknown in Yugoslavia. At first, we were simply an informal gathering of students united by shared interests and enthusiasm.

At that time, state institutions closely monitored new ideas and movements with spiritual or philosophical dimensions. Activities of this kind were often subject to official review. Our modest size in the early years allowed us to develop quietly and devote ourselves to study and practice.

Interest in the group gradually increased, attracting increasing numbers of local and international students.The growing need for new instructors, together with my own desire to deepen my understanding of yoga, led me to take on the role of instructor at a relatively early stage.

New members continued to arrive, and the group expanded year after year. As it grew, so did the need for a more structured organization. By 1978, we had become large enough to be formally established as an official Yoga Section within the Foreign Students' Friendship Club, with separate groups for beginners and more advanced practitioners.

4) In March 1978, a Yoga Section was established within the Club for International Friendship of Students. These first public yoga courses were attended by both foreign and local students, and possibly also some citizens of Skopje. I know that you were involved in organizing the activities in the club, as well as in conducting yoga classes. At that time, more people started attending yoga, and your responsibilities in both organization and teaching increased. Could you tell us more about this period of 1978 and 1979, when the Yoga Section was active in the club?

Were there only beginner courses, or was an advanced group also formed? What other activities did the section organize—did you hold seminars, lectures, and other events?

The period 1978–1979 was one of rapid development and great enthusiasm. Interest in yoga continued to grow, and during this time around a hundred participants were involved in the activities. Until 1978, our work was mainly conducted in the student dormitory, after which we moved to the Foreign Students' Friendship Club (Figure 2), where we had better conditions for our activities and further development.



Figure 2: Teaching a class at the Club for International Friendship of Students – Skopje, 1978

At that time, we were no longer working only with beginners. In addition to beginner groups, there were also advanced groups, specialized health-oriented programs, as well as training groups for future instructors preparing for teaching roles.

My responsibilities were diverse. Thanks to my medical studies, I gave lectures on human anatomy and physiology, proper nutrition, and vegetarianism. At the same time, I monitored participants' health status

and helped develop specialized programs for individuals with specific health needs or those requiring preventive care. This included pregnant women, individuals with musculoskeletal issues, cardiovascular conditions, and other health concerns requiring a careful and individualized approach. For each participant, we aimed to select techniques and exercises best suited to their specific needs.

In addition to regular classes, we organized numerous lectures, presentations, and other educational activities, which further expanded and evolved over time.

For me personally, this was an extremely fulfilling period. I experienced deep satisfaction in seeing how collective effort produced results and how more and more people were discovering yoga. At the same time, this work gave me additional energy and inspiration to continue my medical studies in parallel and to deepen my knowledge of traditional healing systems such as shiatsu, acupuncture, and Ayurveda.

5) In the early 1980s, activities related to yoga in Skopje expanded significantly: a Training School for yoga instructors began to operate, public interest in yoga increased, and gym halls were rented for classes. Courses were organized for beginner and advanced groups (levels 1 through 5). In March 1981, the Skopje Yoga Society was founded, followed later by yoga societies in Struga, Prilep, Bitola, and Shtip. Federal seminars began to be organized, which later developed into international events. Research activities also started at the Institute of Physiology at the Faculty of Medicine. Specialized courses were conducted for residents of the Institute for Speech, Hearing and Voice in Skopje, and seminars were organized with well-known yoga teachers from India.

How were you, together with the teacher and some of your students, able to manage and coordinate all these activities and ensure that everything functioned smoothly?

I still recall an incident that brings a smile to my face. One of our students lit a scented incense stick that had been given to us by an Indian colleague. This raised concern among the club authorities, who feared that we might not be an ordinary yoga group, but a sect or similar organization. As a result, our activities were temporarily suspended.

It was at that moment that we realized how important it was to present yoga through its health-related and scientific value. We therefore approached professors and research staff at the Faculty of Medicine to explain the therapeutic value of yoga in medical terms.

As a result, scientific research on yoga began at the Institute of Physiology of the Faculty of Medicine in Skopje, where I had studied. Professors Trojachanec and Spiroski, together with their collaborators, were involved in this work. Their scientific support lent credibility and seriousness to our activities and helped dispel doubts surrounding our work.

In this context, the Yoga Instructor Training School was established, where our most advanced students continued their development. One of the earliest and most dedicated among them was Vancho Taseski, now a respected associate professor and responsible for the scientific program of yoga. I am especially proud to have witnessed the early development of such an important figure.

In 1981, the Skopje Yoga Society was founded, marking an important milestone in the development of yoga in our country. Later, similar societies were established in Struga, Prilep, Bitola, and Shtip, and yoga gradually began to spread beyond the capital.

At the same time, we began organizing national seminars (Figure 3), which later developed into international events. Our collaboration with the Institute of Physiology continued and expanded through scientific research programs, and we also developed specialized programs for residents of the Institute of Speech, Hearing and Voice in Skopje.



Figure 3: At the International Yoga Seminar: YOGASANAS in Struga, 1986. Pavlos K. Hassanagas, Dr. Zdravko Trojachanec, Dr. Amalia Parousi, Vancho Taseski

Particularly important for our development was the opportunity to organize seminars with distinguished yoga teachers from India. In this way, we maintained direct contact with the original tradition while simultaneously developing yoga within a modern, scientifically grounded, and educational framework.

6) One of the most important activities in the field of yoga in our country has been the training and further development of yoga instructors. At that time, you were directly involved in the Instructor Training School both as a yoga instructor and as a

medical professional.

Could you tell us more about this, and which subjects or content you personally taught?

The training and development of new instructors was one of our most important areas of activity, as the future development of yoga in the country depended on the quality of its instructors.

As a medical student and later as a healthcare professional, I was mainly responsible for theoretical instruction in anatomy, physiology, nutrition, and applied yoga therapy.

My goal was for future instructors to understand not only how a particular technique is performed, but also why it is used, what its indications and limitations are, and how it can be safely adapted to each individual's needs. I believe it was precisely this integration of yoga with scientific knowledge that formed one of the key foundations upon which yoga later developed and became established in our environment.

7) In addition to your studies at the Faculty of Medicine and your engagement in yoga, you were also interested in acupuncture as an ancient healing method.

Where did you acquire your theoretical knowledge and practical training in this traditional method of treatment, and did you also attend training courses outside the country?

During the final phase of my medical studies, while I was completing my clinical internship, the first acupuncture congress in Yugoslavia was organized in Ohrid (Figure 4, Figure 5).



Figure 4: Participation in the First Congress of the Association of Acupuncturologists of Yugoslavia, 1985. Dr. Amalia Parousi, Dr. Lazar Dimitriev and others

At that time, my teacher Pavlos encouraged me to attend the congress as a representative of the Yoga Society of Skopje, which we had founded in 1981.

During this congress, I met Professor Lazar Dimitriev, a physician, gynecologist, and general practitioner, who at the time served as president of the Yugoslav Acupuncture Society.

This encounter opened the door to the world of acupuncture for me. What began as professional curiosity quickly developed into a serious commitment and further education.



Figure 5: The First Congress of the Association of Acupuncturologists of Yugoslavia,1985. Dr. Amalia Parousi; Dr. Lazar Dimitriev - gynecologist and acupuncturist; Academician Dr. Antonie Skoklev - maxillofacial surgeon and acupuncturist; Pavlos K. Hassanagas - yoga teacher; Dr. Oikonomopoulos – acupuncturist

Seeing the possibilities that this ancient therapeutic method offered within modern medical practice, I felt that I had found the next important step in my professional path.

Thus began my work as an acupuncturist—a profession to which I have remained dedicated for the past four decades, up to the present day.

8) Have you participated in international professional and scientific conferences with presentations on the field of acupuncture?

Continuing to bridge yoga and acupuncture in Yugoslavia, we organized a public lecture titled "Yoga and Acupuncture," where the speakers included Dr. Dimitriev, my teacher Pavlos, and myself.

A year later, after completing my medical studies in 1982, I moved to my homeland Greece and settled in Athens.

There, I immediately came into contact with physicians practicing acupuncture and joined the Panhellenic Acupuncture Society, where I later also served on its Medical Council. At the same time, I became a member of the World Medical Acupuncture organization, ICMART, based in Brussels.

Over the following years, I participated in numerous congresses, seminars, and educational programs around the world. Among them, I especially remember the World Congress on Acupuncture, Yoga and Ayurveda in Sri Lanka in 1984 (Figure 6), further

training in Traditional Chinese Medicine and acupuncture in China (2010), as well as advanced training in traditional healing research at the Institute for Traditional Health Systems in Moscow (2006).



Figure 6: World Congress of Alternative Medicine, Sri Lanka 1984

In parallel, I completed my specialization in general medicine at the National and Kapodistrian University of Athens and obtained the title of specialist in family medicine.

From 1984 to the present day, I have been working as a physician in my private practice, cooperating with health insurance funds, while also actively practicing medical acupuncture.

Looking back, I feel that the path that began during my student years in Skopje, through yoga, naturally led me to acupuncture and to a broader vision of health, which I continue to follow today.

9) As a physician, yoga instructor, yoga therapist, and acupuncturist, do you believe that a synergy can be established between Western medicine, acupuncture, and yoga therapy in the treatment of various diseases?

If so, for which conditions do you think this synergy would be most effective?

Yoga and acupuncture are two traditional therapeutic systems that share a common goal – the establishment of balance, harmony, and holistic human development on the physical, emotional, and spiritual levels.

In yoga, individuals actively participate in their own health care. With the guidance of a teacher, they learn various techniques, gradually adopt a way of life, and become conscious participants in the process of their own physical and mental development.

In acupuncture, the therapy is administered by the acupuncturist, while the patient receives treatment for therapeutic, preventive, or balancing purposes. When these two approaches are combined, the results are often even more effective.

What has always struck me is that both yoga and acupuncture are universal systems. They do not depend on a person's political, religious, or ideological beliefs, nor on their level of education or cultural background. For this reason, they are now practiced successfully in many parts of the world.

Western medicine, on the other hand, is an indispensable foundation of modern healthcare. It is supported by extensive scientific achievements, advanced diagnostics, pharmacotherapy, and surgical methods that save lives every day.

I believe that the greatest benefit for the patient is achieved when these three approaches are applied in a complementary way. Western medicine provides scientifically validated diagnostics and treatment when necessary; acupuncture can offer effective solutions without drugs or invasive procedures when appropriate, particularly in musculoskeletal conditions, functional disorders, and conditions related to the autonomic nervous system; while yoga therapy allows individuals to actively participate in their own recovery and maintenance of health.

For me, these three approaches are not contradictory. On the contrary, they complement one another. When applied with scientific responsibility, proper clinical assessment, and respect for the individual needs of each person, they can contribute to truly comprehensive care for both physical and mental health.

Looking back, I feel deeply grateful to have been part of this remarkable journey. From my early student days in Skopje until today, yoga, medicine, and acupuncture have been not only part of my professional career, but also of my way of life and way of thinking.

The people I have met, the friendships that have been formed, the collaborations that have developed, and the shared commitment to health and humanity have left a lasting mark on my life.

And today, I am happy to say that it all began right here in Skopje. I will always remain grateful to my teacher Pavlos, to my collaborators, students, and friends, as well as to all those who contributed to yoga becoming part of the lives of so many people.

I wish the Yoga Federation many more successful years, new generations of teachers and students, and that it never loses the spirit in which it was founded forty years ago.

Dr. Amalia, thank you for your insights in this conversation. Your words are a testament to your beginnings in the fields of yoga and acupuncture, two ancient holistic systems that play an important and irreplaceable role in human holistic life and health. Through this conversation, from this perspective of time, I have learned certain pieces of information and facts that are new even to me. But even more so, they are vital for the current and future generations in this

region, as well as the readers of this journal, to become acquainted with a part of the pioneering developmental path of yoga in our country, which began with the arrival of Teacher Pavlos in Skopje in 1972. The foundations of yoga here were laid then, it has endured in these regions for more than half a century, and that developmental path continues forward.

Thank you once again, and I wish you good health and success in your noble mission of applying your knowledge and experience as a person, a medical doctor, a yoga therapist, and an acupuncturist for the well-being of people.

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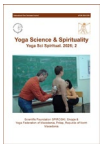

In Memoriam: Dr. Vasilije Tomanoski (1957 – 2026)

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Abstract

Dr. Vasilije Tomanoski (1956–2026) was a distinguished nephrologist, researcher, and pioneer in the integration of complementary medicine into nephrological practice. After graduating from the Faculty of Medicine in Belgrade in 1981, he specialized in internal medicine and later obtained both a Master's degree and a PhD, focusing his doctoral research on the pathohistological characteristics of renal osteodystrophy in patients undergoing chronic hemodialysis. Beginning in 1986, he collaborated closely with the Dialysis Center and Yoga Association in Struga, where he played a leading role in introducing yoga therapy as a complementary rehabilitation approach for patients with chronic renal insufficiency. Throughout his career, Dr. Tomanoski authored and co-authored numerous scientific publications and presented his research at national and international scientific meetings, including the 5th World Congress on Yoga and Holistic Medicine (Annecy, France, 1994) and the 1st Scientific Conference on Yoga "Science and Spirituality at the End of the 20th Century" (Ohrid, 1997). His work emphasized the value of a holistic, patient-centered approach that combined evidence-based nephrology with complementary therapeutic practices. Beyond his scientific achievements, he was admired for his humility, compassion, and dedication to patient care. Dr. Tomanoski's lifelong efforts to bridge conventional medicine and holistic healthcare established an enduring legacy that continues to inspire physicians, researchers, and practitioners of integrative medicine.

With deep sorrow and sincere respect, we mark the passing of Dr. Vasilije Tomanoski – nephrologist, Doctor of Science, distinguished scholar, and long-standing collaborator who left lasting traces in medicine and holistic practice.



Dr. Vasilije Tomanoski (1957 – 2026)

Life and Professional Path

Dr. Tomanoski graduated from the Faculty of Medicine in Belgrade in 1981, where he also completed his specialization in internal medicine. He earned both his Master's degree and PhD at the same faculty, defending his doctoral dissertation on *"Pathohistological Characteristics of Renal Osteodystrophy in Patients on Chronic Hemodialysis Programs"* in 1997.

Since 1986, he was an active collaborator of the Dialysis Center in Struga and the Yoga Association of Struga, where he contributed to the application of yoga therapy as a complementary part of rehabilitation for patients with chronic renal insufficiency. His personality radiated simplicity, modesty, and goodwill, while his expertise and competence were recognized and valued by both patients and colleagues.

Scientific Contribution

Dr. Tomanoski was the author and co-author of numerous research papers, presented at national and international congresses, conferences, and symposia. Particularly significant was his pioneering work on the

integration of yoga into nephrology, which emphasized the importance of a holistic approach in medicine.

- He participated in the 5th World Congress on Yoga and Holistic Medicine in Annecy, France (1994).
- He presented at the 1st Scientific Conference on Yoga *"Science and Spirituality at the End of the 20th Century"* in Ohrid (1997).
- He published interviews and clinical reports that remain important documents of his vision for integrative medicine.
- He was member of International Scientific Board of the scientific journal Yoga Science & Spirituality.

Legacy

Through his scientific vision and professional dedication, Dr. Tomanoski succeeded in building a bridge between medicine and spirituality. His work represents a significant contribution to contemporary nephrology and holistic medicine, and his name will remain remembered in academic and scientific history as an example of an integrative approach to health and human well-being.

His passing left a void among many – patients, colleagues, and collaborators – yet his legacy will continue to inspire future generations of physicians and researchers.