

## Review Article

# Pranayama: transforming medical education by igniting the inner teacher

Ganesan Thangavel\*

Department of Physiology, Sri Ramachandra University, Chennai, Tamilnadu, India

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### \*Correspondence:

Dr. Ganesan Thangavel,

E-mail: [tganesan@yahoo.co.in](mailto:tganesan@yahoo.co.in)

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## ABSTRACT

Innovation in medical education is curriculum re-designing with system approach to motivate, to change the attitude, enhancing the skill by mentoring, facilitating and getting feedback in order to bring the unconscious competency in medical students based on Johari window leading to self-discipline, self-evaluation and self-directed learning. A 3 day Faculty Development workshop brings tremendous beneficial effect. With advanced technologies, the highly intelligent PG students can learn the basics of Faculty Development in the PG curriculum itself. We can teach this in MD course itself. Our hypothesis is mandatory research and 4 paper publications for promotion to Professor are like mandatory treating of 4 patients daily by Research Scholars. Both decisions will bring the same consequences. Basic Faculty Development workshop, Research Methodology workshop, PRANAYAMA as a health promotion in Medical Students and Mentorship can be totally done at undergraduate and PG level by Community Medicine department as an Indian Innovation in Medical Education and this will make the Community Medicine Department, the centre of attraction for Medical Students. Teaching Professionalism is challenging, because medical teachers are Medical Education Technologists. The objective is to include the theory and practice of PRANAYAMA along with the Physiology of Breathing in the 1st year MBBS course, and reinforcing it in the Community Medicine Department.

**Keywords:** Pranayama, Medical education

## INTRODUCTION

Humans are biological computers with Sensor, Transducer, Cleaner, Filter, Grinder, Stabilizer, Escalator (Mucociliary clearance), Processor and Infinite Storage. Humans are engaged in a continuous action to locate the sources of food and shelter to avoid danger, have sex and sleep. Human activity results in rhythmic fluctuations in blood pressure and heart rate as a result of autonomic control systems that are influenced by breathing.

The roots of our civilization lie in the east. On the banks of the Ganges, on the plains of Egypt, and in sea-girt Greece, thousands of years ago, Arts and Sciences flourished and attained a remarkable development. The healing art also celebrated its earliest triumphs. It was in India at first practised by the priests, who there, as

elsewhere, passed as the treasurers of all knowledge, human and Divine.<sup>1</sup>

Medicine was practised by priests, who were considered next only to Kings and the practice itself was a mixture of magic, rites and rituals. The medical education in India revived with the arrival of the British (1600 A.D.) and the colonization of India. Medical schools were established in the late 19th century in the metropolitan towns of Madras, Calcutta and Bombay. Madras Medical School began its operations in 1835.<sup>2</sup>

Sanskrit is the mother of all European languages. The Hindus are a nation of Philosophers. Brahmin philosophers, in their sublime faith in the unity of God, in the creation of the world, in the immortality of the soul, in the goodness of God, in the responsibility of man, rose

far above the ancient Greek, Roman, and Jewish teachers and philosophers. The medical system of the Hindus is as old as their civilization, and has lent materials for laying the foundation in other countries.<sup>3</sup>

The important lesson is the fact that the present concern with Medical Education, the scrutiny and revision of training courses and methods of Teaching, do not represent a solely modern phenomenon. The problem has existed from the time of Medicine's origin. The profession of the Physician is as old as the History of mankind itself.<sup>4</sup>

Medicine to-day demands much from character, intellect, and practical ability, and medicine also provides a wide variety of opportunity for all kinds of talent. But talents will be wasted or misused if the structure and content of medical education are faulty, and if medical educationists remain complacently satisfied with themselves and their methods.<sup>5</sup>

All physicians are called upon to teach over the course of their careers, to varying degrees. Whether they play active roles in the education of colleagues, residents, medical students, allied health professionals or their patients, all doctors should be competent educators.<sup>(6)</sup> Teaching is a pleasurable human interaction that could have potent effects on learners. Teaching is all about Students. The only role of teaching is to help students learn. The long-term impact of the requirement for faculty and post graduates to publish on Indian academics is going to be harmful.<sup>7</sup>

## MEDICAL EDUCATION & RESEARCH

Teaching is the central function of Clinical practice and all doctors are involved in Medical education. All doctors who got MD (Doctor of Medicine) are educators. They acquire PhD in the process of intuitive, successful treatment of patients. The medical educators include a large proportion of non-clinical academics, creating a potential problem of translation between the discourses of practical clinical communities and conceptual academic communities.<sup>8</sup>

Today students have the potential to learn faster and in more interesting ways than the teachers can teach. Teachers face increasing challenges as they face a more "wired" and more and more "wireless" generation of students who have access to technology that is evolving rapidly every day.<sup>9</sup>

Medical humanities became part of the curriculum as early as 1976 as a non-compulsory element. Don't cry for us Argentinians, since the teaching of medical humanities has helped our doctors to function more truly humanistically during the past two decades, and we intend to continue with this calling in the future.<sup>10</sup>

In admitting students to the study of Medicine, as much as importance was attached to moral fitness as to the intellectual and physical fitness of the pupils, for it was considered axiomatic that moral excellence was the basis of all true Education. The object of education was not merely to prepare the student to earn a livelihood, but also to infuse into him a strong desire to lead a good and virtuous life.<sup>11</sup>

Medical education is tedious and takes both a physical and psychological toll on medical students. Stress could lead to burnout which research has shown that is prevalent among medical students and can lead to other significant dangers if it continues into residency and beyond. Majority of students relied on family, friends and classmates for support when stressed and very few relied on Mentors, Faculty and Medical College administration for support.<sup>12</sup>

To convert a suggestion into compulsion without concrete evidence for its need is undemocratic. There is no mandatory continuing education for engineers or lawyers. We live in the era of internet, satellite, and smart phones where knowledge is just a click away. We are chatting across continents. But the MCI wants doctors to be physically present at some select registered venues to take the holy dip! This is certainly a retrogressive step.

The everyday cases that a doctor handles, his interaction with fellow doctors from other departments, clinical meetings, journal clubs and case discussions in day-to-day practice all contribute to continuing medical education. Reading a textbook or a journal is still the best way to learn and comprehend things. Sitting in a dark, air-conditioned lecture hall, half-asleep, just for the sake of a few credit hours is pure hypocrisy.<sup>13</sup>

Researchers and scientific communities have encountered a horrible event named journal hijacking. They are aware that many of authors are in urgent need to publish their work in well-known prestigious journals.<sup>14</sup>

The Department of Physiology should be free to pursue its own program of research. The objective of integrating clinical and physiological teaching has not changed over the years. Ultimately, the provision of the highest possible standard of teaching is only possible within a medical college if senior faculty members responsible for organizing the programs have respect for each other's disciplines.<sup>15</sup>

Medical profession is considered as a noble profession because people compare doctor with God, so the doctors have the moral duty to follow the ethics.<sup>16</sup> Students who underperform in the first year of MBBS is a common phenomenon.<sup>17</sup> Many junior doctors in Germany felt inadequately prepared for being a doctor. The successful completion of a medical college education should provide students with a level of knowledge and skills necessary to fulfil a junior doctor's daily duties at hospital.<sup>18</sup>

## MANDATORY MEDICAL RESEARCH

As per new amendment rules of Medical Council of India (MCI), research publications in indexed/national journals are now mandatory for promotion to posts of Professors and Associate Professors. Teachers should be “role models” for their students in terms of honesty in teaching and conducting ethical research.<sup>19</sup>

Academic institutions and university frequently use the number of publication to an individual's credit as the measure of competency. This pressure to increase the number of publications has led to unethical practices and wasteful research. “Publish or perish” is now becoming the way of life. It is race to get more and more publications to one's credit. The current trend is forcing scientists to create publishable research. This is giving rise to fraudulent researches.<sup>20</sup>

All researchers do not have the necessary skills to design and conduct meritorious studies; this is a credible possibility.<sup>21</sup>

The most demoralising thing of all is the cycle of endless organisational change and reconfiguration, taking up inordinate amounts of time in what a colleague of mine has described as ‘feeding the monster’.<sup>22</sup>

## PRANAYAMA IN MEDICAL EDUCATION

Unconscious mental processes have recently started gaining attention in a number of scientific disciplines.<sup>23</sup> Pranayama is the fourth limb and meditation is the seventh limb of ashtanga yoga. The real meaning of pranayama is control of bio-energy. Prana is an essential living activity agent that works in the human body and makes the various function of the body possible.<sup>24</sup>

Fifty four years ago, four landmark papers were published from the All India Institute of Medical Sciences (AIIMS) on some physiological aspects of yogic practices, by the pioneers, Dr. B. K. Anand, Dr. G. S. Chhina and Dr. Baldev Singh.

The stimulus for Yoga studies came from some questions then raised in the Parliament about the paucity of research on yoga. These very pertinent questions percolated from the Parliament to the Indian Council of Medical Research (ICMR) and from the ICMR to the Department of Physiology at AIIMS. The best work on yoga is possible only if the investigator himself learns and, preferably, observes yogic discipline.<sup>25</sup>

Yoga in fact means union of individual consciousness with the supreme consciousness. It involves eight rungs or limbs of yoga, which include Yama, niyama, asana, pranayama, pratyahara, dharana, dhyana, and Samadhi. Intense practice of these leads to self-realization, which is the primary goal of yoga.<sup>26</sup>

## HOLISTIC TEACHING & LEARNING

It is essential for Universities and Colleges to start Yoga Departments to impart the theory and practice of Yoga. Through Yoga education, the students can enjoy not only their life in Universities and Colleges but the rest of life in a highly dignified way.<sup>27</sup> Over the four and a half years of undergraduate medical education, the inward God could have been irrevocably awakened in each student.<sup>28</sup> The concept of a holistic learning environment is based on the recognition that students have both academic and non-academic stressors that can negatively impact their learning. We must help students minimize the influence of these stressors on their learning. Singing in church, singing at summer camp, singing or playing an instrument in elementary, middle, or high school, dancing, listening to, or singing along with a live performance are all experiences with which most students can identify in a positive way.<sup>29</sup>

## CHANTING MAHAMANTRA

The Mahamantra has potential in addressing problems related to stress and depression and that it is to be considered as one possible component of a spiritual approach to social work practice.<sup>30</sup>

The practice of Vedic chanting in a traditional way can also be used as one of the powerful means as any other yogic practices like asana, pranayama, or meditation in calming down the mind, enhancing memory and in effective improvement of attention.<sup>31</sup>

Singing is prolonged speaking. Choir singing is known to promote wellbeing. While chanting, heart rate (HR) is accelerating and decelerating constantly. This fluctuation in HR is called heart rate variability (HRV). Various cultures use this technique wherever people gather to achieve relaxed communicative states. Interestingly, coordinated respiratory activity, irrespective if it is caused by yoga breathing, mantra chanting, praying or singing is ritually performed in most religions.<sup>32</sup>

A mantra is a religious or mystical sound, word, or poem that can be either recited aloud or sub vocally. For instance, Hare Krishna practitioners are instructed to repeat the 16-word Hare Krishna mantra, “Hare Krishna Hare Krishna, Krishna Krishna Hare Hare, Hare Rama Hare Rama, Rama Rama Hare Hare,” 1,728 times a day, keeping the correct count with the help of prayer beads. The particular body vibration that a mantra induces is believed to calm and focus the mind and body without the need for intense concentrative efforts.<sup>33</sup>

Chanting is soothing to humans and group chanting can induce euphoria that some humans call a religious or mystical or “spiritual” feeling. If you combine chanting with dancing or just holding your arms in the air, swaying back and forth, you become euphoric and feel bonded with others in your group.<sup>34</sup>

The practices of Medicine and music have often gone hand in hand. Many doctors have also been musicians. Drums and mantra are the rhythms for inducing healing through altered states of consciousness. In many cultures, medicine and music are combined in ceremony: Apollo in Greece and Sarawathi in Southern India. Chanting of mantra is to integrate the chakras, involving a spiritual aspect.<sup>35</sup> Why does chanting, drumming or dancing together make people feel united? The caudate (which also responds to monetary reward) relates synchronized activity to basic reward processing in the brain.<sup>36</sup>

The major focus of voice therapy for the patients with phonatory instability is to reduce the unsteady, hoarse, rough voice quality by targeting steady, clear phonation. One way to reduce vocal instability is to produce a more relaxed phonation, by Chanting.<sup>37</sup>

Reciting the Ave Maria prayer and yoga mantras enhances and synchronizes inherent cardiovascular rhythms because it slows respiration to almost exactly six respirations per minute, which is essentially the same timing as that of endogenous circulatory rhythms and mantras may have evolved as a simple device to slow respiration, improve concentration, and induce calm.<sup>38</sup>

## DISCUSSION

Pranayama leads to self-discipline, self-evaluation and self-directed learning bringing the unconscious competency in Medical students.

Reaching an ineffable state of nothingness accompanied by a loss of sense of self and duality (Samadhi) is the main focus of Hinduism-inspired meditation. Relaxation meditation (Yoga Nidra), Chanting meditation, mindfulness meditation leads to state of consciousness and attention.<sup>39</sup>

What can we do completely unconsciously? We still do not know because it is difficult to do careful studies on sleep walking. It is therefore hard to test the entirely unconscious behaviours. Problem incubation is a famous example of unconscious mental processing. Humans have used a huge variety of methods to achieve altered states of consciousness: fasting, psychoactive plants, visualization, hypoxia, self-mutilation, lucid dreaming, sleep deprivation, social isolation, dancing and CHANTING.<sup>40</sup>

The ancient Hindu texts - Vedas, Upanishads, Shrutis, Smrutis and Puranas house literally a treasure trove of knowledge. The time has come to perform the Amritmanthan (symbolic churning of the ocean of knowledge) once again to recover gems of knowledge from the ancient Hindu texts.<sup>41</sup>

Indians believe that anything trend-setting in science must come from the West. It has till now, but that can change, if we firstly believe that we can do it. Yoga

research, in particular, has a great potential to win a Nobel, provided its precise biological correlates are discovered, and a standardized precise treatment schedule is formulated for different medical conditions, especially lifestyle diseases. And the same applies to Ayurveda research.<sup>42</sup>

Both humanism and spiritualism needs to be researched and taught to medical students. A reform in Medical Education is to inject humanism and spiritualism from day 1 of first year medical course. Medical Educators is to unlearn first and then learn.<sup>43</sup>

Daily spiritual practices might help mitigate physical, cognitive and emotional forms of burnout in medical and mental health practitioners. Thus, healthcare professionals may also find religion and spirituality not only important in the lives of their patients, but also significant for their own renewal and healing process.<sup>44</sup>

Success in a medical career depends more on personality than academic achievement. Predictors of success in medical career are an important tool to recognize the indicators of proper training. Academic achievement predicts only professional competence. Coping styles are significant indicators of satisfaction with medicine as a career. Therefore, success in a medical career seems to be a consequence of the level of personality structure integration, and not a simple result of the medical education process.<sup>45</sup>

## CONCLUSION

Theoretically, anyone can climb Mount Everest, but practically only a few can. The urge to do research is present only in 45% of the faculties of Medical College. The majority of doctors continue to practice their profession with integrity and professionalism.

Basic Faculty Development workshop, Research Methodology workshop, Pranayama as a health promotion in Medical Students and Mentorship can be totally done at undergraduate and PG level by Community Medicine department as an Indian innovation in Medical Education, with optional Research. Indian Doctors are always unique in their profession, in the history of Medicine and we hope in future also.

Normal breathing is involuntary, reflex in nature. Pranayama is voluntary breathing under cortical control, regulating the thoughts and ideas, streamlining Medical Education.

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