Review Article

The fully equipped physician: An ancient Indian competency framework

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Abstract

Objective: There has been an observable trend towards developing medical competency frameworks across the globe. These competency frameworks are intended to improve societal trust in the medical education system in developing appropriately competent medical practitioners. A framework developed by the Royal College of Physicians and Surgeons; Canada has been widely accepted by several institutions across the world. Medical Council of India has also published a similar framework of medical competencies. Most of these frameworks does not consider ancient Indian frameworks which have existed for several thousand years. Current paper examines the medical competency frameworks from ancient India and compares it with current frameworks. **Method:** A review of literature available in reputable libraries and online on the medical competency framework from ancient India has been attempted. Key words including 'competency framework, medical framework, ancient India and fully equipped physician' were used. **Results:** A medical competency framework was written and implemented more than two thousand years ago. The framework identified key competencies including: Medical expertise, Communication skills, Scholar, Health advocacy and Professionalism. This framework was used for medical practitioners at the time and used during the training and subsequent medical practice. **Conclusion:** There is striking similarity between ancient Indian and current model of competency framework. Teachings and wisdom from ancient India can prove invaluable while developing future medical competency frameworks.

Keywords: Ancient India, competency framework, fully equipped physician, medical framework

Introduction

There have been significant changes in Indian medical education in recent past. The Medical Council of India has recently implemented a new competency-based curriculum for medical graduates, which is indeed a major landmark for medical education in India.[1] The new curriculum replaces old curriculum with a focus on learning the critical competencies needed for success in clinical practice and provides standards and framework for measuring performance.[2] It appears that these changes have been long time developing in response to changing demography, socioeconomic context, perceptions, values and expectations of stakeholders.[3] Five core competencies described include:[1] being a competent clinician (medical expert), communicator, team leader, professional and a lifelong learner.

This change is in line with a general trend observed within western world. There has been an increasing gap between societal needs and expectations, and the medical training administered by the institutions.[4,5] The competency-based medical education system goes some way towards answering the question – "how should a doctor be?" In other words, the competencies define essential qualities and attributes of a doctor in line with the societal expectations.[4] After undertaking a systemic review of the definitions, Frank and colleagues[6] have provided this definition for competency-based medication education – "an approach to preparing physicians for practice that is fundamentally oriented

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to graduate outcome abilities and organized around competencies derived from an analysis of societal and patient needs."

Although calls for competency-based education system existed for more than 60 years, the outcome-based education system has gained considerable interest in later half of nineteenth century.[7]

The Canadian Medical Education Directives for Specialists (CanMEDS) was a project started by the Royal College of Physicians and Surgeons, Canada in 1993 to identify the core competencies required by all physicians to successfully meet the needs of the society.[8] These abilities are grouped thematically under seven roles. A competent physician is supposed to seamlessly integrate the competencies of all seven CanMEDS roles [Figure 1], which include: medical expert (the integrating role), communicator, collaborator, leader, health advocate, scholar and professional. The CanMEDS model has been adapted around the world, both within and outside the health professions, including several Royal Colleges within UK and Australia.[9,10]

This study aims to elaborate on the ancient competency framework for physicians within India, compare it with contemporary models and to trigger further research and learnings. A search for relevant articles was undertaken on PubMed and internet using the word "competency". The article is a synthesis of the identified relevant material.

Medical Practice in Ancient India

Although reliable information about medicine and doctors can be traced back to prevedic and vedic era to 3000 BC, beginning of Ayurveda in 600 BC marks the beginning of a more rational and methodical system of medicine and medical practice.[11] Two Sanskrit medical texts dating from early centuries of Before Christian era titled – Charaka Samhita and Sushruta Samhita possibly form the cornerstone of the science of Ayurveda. The Charaka Samhita (compendium, treatise) (written in about

Figure 1: CanMEDS framework

800–700 BC sought to teach the physician the foundational ideas of logic so that diagnosis and treatment could be based on valid observations and reasoning, while Susruta Samhita (written between 900 BC and 100 AC) which was although a text on surgery, shares the theoretical doctrines of the Charaka Samhita and aspects of physician quality. Central to Ayurveda[11-13] is the tridosa or the three humoral theory of vata, pitta, and kapha, and fundamental identity between man and nature as they were conceived of as constituted of the same matter (bhuta). All physical, physiological processes as well as the pathological causation of disease are explained in terms of the three dosas. Equilibrium of the three dosas was manifested as health whereas the disequilibrium or disharmony of these three resulted in disease. Each of the seven dhatus or constituents of the body could be affected by this disequilibrium.

Medical Education in Ancient India

Medical education was given after completion of basic training.[14] In ancient India, the education was mostly offered within Ashramas, which were run by teachers or Gurus. Certain Universities such as Taxilla, Nalanda and Banaras existed as well, which were well known for training in medicine.[14] Medicine and surgery were deemed as different fields. A practice of training, assessment and registration also existed.[14] As it is mentioned in Sushruta Samhita,[15] "practice can be started only after having read and thoroughly studied the science of medicine; having seen and performed the operations himself; having passed the appropriate tests and thence obtained the permission of the governing authority."

Sushruta Samhita describes in detail the internal character and external built of a pupil who is to be admitted as a medical student.[15] This admission process was very stringent. A medical student was expected to be honest, humble, temperate, generous, and hardworking. His memory and academic performance were also given importance. The initiation of a surgical student and his training in the various techniques was emphasised.

Theoretical knowledge and practical skills were given equal importance. Gaining practical skills by watching their teacher curing the ill, and aiding him in the preparation of drugs resulted in a lot of learning.[14,16] Charaka suggests learning how to identify herbs.[14,16] Sushruta advises Ayurvedic students to practice surgical procedures on vegetables, fruits, and body parts of animals as part of their surgical training. For anatomical knowledge, Sushruta recommended careful observation of a dead body[15] – "the art of making specific forms of incisions should be taught by cuts in the body of a pushpaphala [a kind of gourd], watermelon, cucumber … the art of making cuts in an upward or downward direction should be similarly taught. The art of making excisions should be practically demonstrated by making openings in the body of a full water-bag, or in the bladder of a dead animal … the art of scraping should be instructed on a piece of skin on which the hair has been allowed to remain. The art of venesection should be taught on the vein of a dead

animal, or with the help of a lotus stem. The art of probing … on worm-eaten wood, or a bamboo … the art of extracting by withdrawing seeds from the kernel of a vimbi or jack fruit, as well as by extracting teeth from the jaws of a dead animal. The act of secreting or evacuating … on the surface of a shalmali plank covered with a coat of bee's wax, and suturing on pieces of cloth, skin or hide. Similarly, the art of bandaging or ligaturing should be practically learnt by tying bandages round the specific limbs and members of a full-sized doll of stuffed linen. The art of tying up a karnasandhi [severed ear lobe] should be practically demonstrated on a soft severed muscle or on flesh, or with the stem of a lotus lily. The art of cauterising, or applying alkaline preparations, should be demonstrated on a piece of soft flesh; and lastly the art of inserting syringes and injecting enemas into the regions of the bladder or into an ulcerated channel, should be taught by asking the pupil to insert a tube into a lateral fissure of a pitcher, full of water, or into the mouth of a gourd."

Fully Equipped Physician

Both Charaka Samhita and Sushuta Samhita have described essential qualities, attributes or the competencies for medical practitioners. Charaka has described the physician possessing all of these attributes as "the fully equipped physician" (Cikitsa-prabhrita). Chikitsa refers to the practice of medicine and Prabhrita means offering or gift. Thus, the term Cikitsa-prabhrita is applied to mean that physician who is well equipped in terms of qualities and instruments and who can play proper supporting role in the management of diseases. Such qualities were essential to differentiate between a true and a fake (described as a quack) physician. As it is written in Charak Samhita[17] – "A qualified physician is the one who is well acquainted with the principles of treatment, is learned and skilled in the practice of Ayurveda, and is known for promptness of action. A patient obtaining treatment from such a physician, becomes healthy and attains happiness. On the other hand, if the patient receives treatment from a pretentious and ignorant physician, he subjects himself to potential complications because of excessive or inadequate treatment."

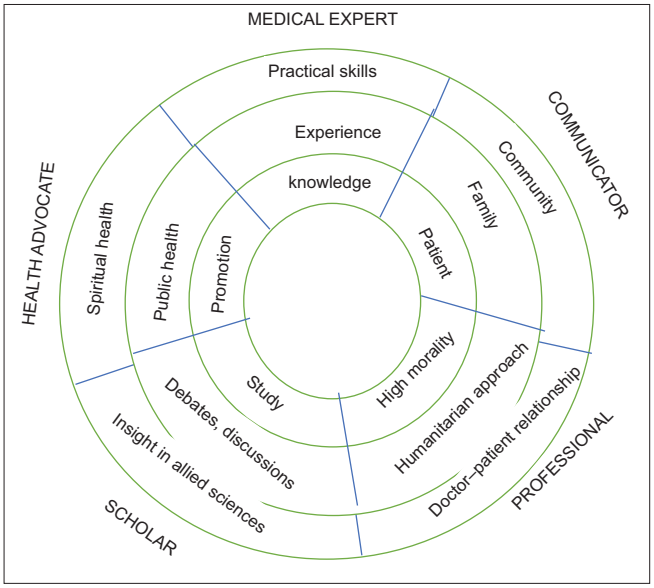

Figure 2: Diagrammatical representation of medical competency model adopted from ancient Indian texts

Key competencies described in ancient Indian text can be described as – well rounded expert, communicator, health advocate, scholar, and a professional who demonstrates high standards of appearance and behaviour [Figure 2].

Medical expert – A doctor was expected to be a "well rounded" expert with clinical knowledge, experience and practical skills in medicine.[14,18] The knowledge possessed by the doctor had to be thorough; there had to be "minute consideration of the drug, medical properties … of viscera, vessels, nerves, joints and bones and cartilage … of curability, palliativity and incurability of the diseases and of thousands such other problems that baffle even those persons who possess a clear and vast knowledge, not to speak of men with lesser intelligence. Hence it is very necessary for the teacher to explain thoroughly each verse and part thereof and for the students to listen to these attentively."[15]

The practical skills and the experience were given equal importance and deemed as integral part of "well rounded" expert. Sushuta writes – "he who knows theory only but is not so good in practical work, gets bewildered on being confronted with a patient, in the same way as a coward feels on the battlefield." Further in relation to experience, he writes, "he who wants to be expert in the use of surgical operations … should practice the same experimentally on similar problems."

Communicator – In ancient India, medical care was offered in the sick person's residence, with the exception of Universities.[19] The patient's family was integral in providing care. Charaka Samhita talks about need to communicate with the patient and their family about disease and treatment. It also refers to the need to communicate with wider public and the other physicians. This requires wisdom and skilful communication. Therefore, it has been recommended that a physician becomes proficient in public speaking.[18,20]

Health advocate – Ayurvedic teaching insists on the role of a physician as much more than mere treatment of diseases.[20] A doctor was to help an individual reach the ultimate spiritual goal of self-emancipation, which would not be possible without a healthy mind and body. Furthermore, Ayurvedic practices placed importance of public health measures such as handwashing, sanitisation, personal hygiene and engineering techniques which promoted health.[21] There are no documented evidences, but the excavations of the archaeological sites at Harappa and Mohenjo Daro, show a high degree of town planning, awareness and practice regarding public health and sanitation.[19] Thus, the health advocacy was an important part of being a physician, both from public health and spiritual perspective.

Scholar – At least two aspects of continuous professional development has been mentioned in ancient Indian texts. First, ongoing improvement in your own subject was deemed important. Sushurta Samhita[15] has said, "In order to broaden your knowledge and outlook, you should study the subject regularly and take part in scientific debates and discussions." Second, it is also been advocated that a physician observes and learns from allied sciences. The allied sciences are not what we currently know as allied sciences. It perhaps is referring to physicians with expertise in other areas of medicine. Sushhuta Samhita says – "A person who studies one branch of science cannot arrive at proper conclusions, therefore a physician should try to learn as many sciences as possible." It further adds "One should listen to the lectures given by specialists of that branch, as it is not possible to include all branches of science in one subject."

Professionalism – Several aspects of professionalism has been mentioned. Charak Samhita[17] advises against medicine being used for material gains – "The science of life is permanent and yielding merit. Those who, for the sake of living make merchandise of medicine bargain for dust-heap, letting go a heap of gold … he who treats his patients only on humanitarian grounds without desiring any money or personal benefits in return, supersedes all other physicians."

In terms of appearance, both the texts have defined certain characteristics of a physician. Charaka Samhita[17] says that a physician should be – "healthy, modest, patient, truthful, skilful, and fearless (or decisive). He should have a steady hand, a disciplined mind (and not affected by alcohol), and not be boastful of his knowledge". Sushruta Samhita[15] prescribes the dress code of white or brownish yellow clothes.

High moral ground is indicated for the doctors. Charaka Samhita[15,22] says – "a doctor should pray for well-being of all creatures. They will be ready day or night to assist patients with their heart and soul. They will never injure or desert their patient for their own life. They will not commit adultery even in their thoughts. A doctor will be modest in attire and appearance. A doctor will not be drunkard, commit sin or associate with criminals. The words spoken by a doctor should be- gentle, pure, righteous, pleasing, worthy, true, wholesome and moderate".

Doctor–patient relationship is another elaborately described aspect. A doctor was expected to be friendly and sympathetic toward his patients so that they do not fear him.[22,23] At the same time, he should pay attention to the curable and be indifferent to those likely to die. Charaka recommends that the physicians refrain from private conversations or indulging in jest with women. During a home visit, a doctor must be respectful and dress appropriately focussing on curing the illness, and refrain from discussing domestic affairs or from announcing the impending death of a patient.

Discussion

One can see that a sophisticated and well thought competency framework has been described in Ancient Indian texts. Some 2000 years later, the medical school across the globe are striving towards developing competency-based framework for medical education and assessment, while such a framework existed and practiced several thousand years ago in Ancient India.

Striking Similarities

It is also striking that some attributes of a medical practitioner have been deemed as essential or necessary throughout the history. A doctor has always required to have adequate clinical knowledge (both theoretical and practical), which would be an essential attribute. However, even other attributes have been deemed as necessary to continue practicing medicine, such as communication, health advocacy, engagement in continuing professional development and importantly, being professional. Thus, these competencies have stood test of time and always been deemed necessary for a physician. One can also see certain difference between the competencies required 2000 years ago and now.

The Professionalism was indeed given an extra emphasis during ancient Indian medical practice. The doctor is required to let go of the material gains and work for the humanitarian causes. The doctor is also expected to maintain high moral and ethical behaviour. The doctor's physical appearance, clothes, language, and conduct has been minutely described both within clinical and non-clinical set-up. A doctor is prescribed not to consume alcohol, let his faculties be influenced, commit sin or associate with criminal people. While doctors have always been expected to maintain high moral and ethical ground in almost all cultures over time, such description could also be for the purposes of excluding "fake" doctors.

Notable Differences

The CanMEDS competency framework has included two additional competencies: medical leadership and being a collaborator. These two competencies were not mentioned by either Charaka or Sushruta. To understand the reasons behind such an exclusion, one needs to understand the demographics of the Indian subcontinent at the time. It is estimated that Indian population was 4–6 million about 4000 years ago, growing to 35 million, 187 million, and 389 million at the beginning of the Christian era, 1800, and 1941, respectively.[24] The recommended doctor population ration is 1 for 1000 population.[25] Nearly 60 years ago, the number of physicians across India was slightly more than 47,000 and the doctor to population ratio was one to nearly 67 thousand population.[26] There is no evidence for this, but it can be safely assumed that the number of physicians in ancient India would be around 100–200.

Consequently, there would be very handful practitioners in each town mainly doing clinical duties. As the care would often be given in the sick person's home, family often served the purpose of nurse and other allied health staff. Hence, the communication and collaboration were required with the family. The system of multidisciplinary care was rudimentary at the time and model of care appears fairly paternalistic. Accordingly, collaboration was not

deemed as an essential attribute 2000 years ago. On the contrary, collaboration with the other members of multidisciplinary system is necessary while practicing within current health system.

Similarly, the isolated practices of the medical practitioners meant that they enjoyed autonomy and control over their own medical practice. Doctors also obtained respect from the community due to their attitude and care of the patients.[26] Again, this lack of institutions meant that medical leadership was not identified as a key competency in Ancient India.

Exclusion of health advocacy by the Medical Council of India is noteworthy. While one could include health advocacy as a dimension of professionalism, its importance is significant to warrant a separate mention as an essential attribute for the doctors. Physicians are often uniquely positioned to function as public advocates for health. They not only understand the medical aspects of issues better than anyone else, but they are also best placed to identify the links between social factors and health. Given their social standing and access to policy makers, physicians enjoy a great deal of leverage in influencing public processes and priorities.[27] Hence, it is a significant omission not to mention health advocacy as a separate competency.

Conclusion

The concept of "the fully equipped physician" was developed and described more than 2000 years ago. The competency framework describes back then resonates closely to current CanMEDS competency framework and the framework outlined by Medical Council of India. Lessons from history have been overlooked across the globe and new models are being considered without understanding the teachings of our ancestors. One can only hope that previous learnings will be taken into account while developing future competency framework models.

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Conflicts of interest

There are no conflicts of interest.

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