

Role of Medical Education in Preventing and Control of Noncommunicable Diseases in India?

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ABSTRACT

India has approximately 335 medical colleges, which produce around 40,000 medical graduates annually. Even though medical professional have a critical role in prevention and control of noncommunicable diseases (NCDs) including injuries, it has been observed that the present medical and nursing curriculum in India does not adequately cover prevention and control of NCDs. The topics for specific approach to prevent NCDs and various strategies can be incorporated into public health and clinical courses in undergraduate medical education, with brief optional courses in residency and continuing medical education for established practitioners. High-level expert group instituted by Planning Commission of India on Universal Health Coverage recommended that medical education requires greater orientation of providers to the social determinants of health as well as to gender and equity issues. Curricula in medical schools should keep pace with the changing dynamics of public health, health policy, and health demographics. Medical education and training should be reoriented by introducing competency-based, health system connected curricula, and continuous education. There is a need to review of medical curriculum, introducing innovative integrated teaching methods, and capacity building of teachers for meeting the challenge of rising burden of NCDs in India.

Keywords: Curriculum, medical education, noncommunicable diseases, prevention, training

Introduction

Practice is often ahead of teaching and research: it is likely that morbidity and mortality due to noncommunicable diseases (NCDs) are increasing day by day, and physicians have started understandings the importance of prevention of these diseases and healthy populations that they were not taught at medical school.⁽¹⁾ This extends a challenge to educators of health professionals to question what kinds of new competencies might be required for this changing pattern of disease burden, particularly for healthy communities that will be most

affected by adopting the risky behaviors, which in turn will lead to NCDs. However, in a crowded curriculum, growing need of including some other clinical courses and medical degrees, what are the opportunities for teaching such competencies in a way that builds on existing approaches to medical education and training?

The approach of integrating the changes required in the medical education training with the already existing crowded curriculum is in existence where World Medical Association has adopted the comprehensive statement of - The declaration of Delhi on health and climate change - which emphasizes extending health/medicine and public health to meet the needs of all students in health- related disciplines.⁽²⁾

The importance of different kinds of literacies is well known to medicine. The World Health Organization (WHO) has defined health literacy as a patient's ability to gain access to, understand, and use information to

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improve health. Medical education and training seek to give doctors different kinds of literacies, both clinical and nonclinical.⁽³⁾ For example, doctors must develop scientific literacy, as well as technological and cultural literacies, important to healthcare. The literature on prevention on NCDs suggests these literacies will not be enough in the future.

Presently, noncommunicable diseases or NCDs (namely cancer, chronic respiratory disease, cardiovascular disease, diabetes, etc.) have emerged as major causes of morbidity and mortality globally. In 2008, of the 57 million global deaths, 36 million (63%) were due to NCDs, principally cardiovascular diseases, diabetes, cancers, and chronic respiratory diseases.⁽⁴⁾ The causes of such diseases are complex, urbanization, globalization, and motorization have aggravated the situation. The common risk factors contributing to NCDs, which include physical inactivity, unhealthy diet, harmful effects of tobacco and alcohol, and stress, are on the rise.

NCDs are contributing about two-third burden of diseases and more than half of adult deaths in India and these diseases are being life style related disorders. Among the top 10 causes of adult (25–69 years) deaths in urban areas in 2001–2003, 8 are due to NCDs, with heart diseases, cancer, chronic obstructive lung diseases ranking as first, second, and fourth, respectively. Similarly, the problem in rural areas is not different as six out of top ten causes of deaths are due to NCDs with heart diseases, chronic obstructive lung diseases, cancer, and digestive diseases ranking as first, second, fourth, and fifth, respectively. About one-third of deaths (33%) in urban areas and one-fourth of deaths (23%) in rural India are due to heart diseases only.⁽⁵⁾ Injuries are contributing about 10% of total adult deaths in India. Because of historic reason of high prevalence of communicable diseases in the past, teaching and training in undergraduate public health education were more focused on communicable diseases.

Even though medical professional have a critical role in prevention and control of NCDs including injuries, it has been observed that the present medical and nursing curriculum in India does not adequately cover prevention and control of NCDs. Focus is more on medical model than public health approaches. Even some of the intercountry consultation by WHO has identified such gaps in medical education and made strong case for inclusion in medical curriculum.⁽⁶⁾

Present paper highlights the importance of medical education, present scenario, and makes a case to develop curriculum to reflect and cover prevention and control of NCDs in India.

Medical Education Scenario in India

In order to establish uniform standards of qualifications in medicine and allied subjects and to ensure the recognition of these qualifications, the Government of India has constituted statutory bodies such as the Medical Council of India, Pharmacy Council of India, and the Indian Nursing Council. Training specific to NCDs, particularly that for diabetes, CVD, and stroke at the primary care level, are not included in the “Human Resources Qualification Standards,” established by such professional councils. There is also no clear policy or system for planning future supply of human resources (HRs) for NCDs.

Country has infrastructure and capacity in approximately 335 medical colleges (about half are government medical colleges and rest are private), which produce around 40,000 medical graduates annually.⁽⁷⁾ After getting education, very few of them join health services due to uncertain career prospects and lack of proper facilities and emoluments. It is a matter of great concern that young doctors are reluctant to join government job and prefer to work in urban settings that too in private setup. Seventy percent of the health providing facility is located in urban areas for 30% of the population. The distribution of physicians is heavily skewed toward urban areas.

It is difficult to say whether our teaching standards are successfully addressing societal needs and expectations by preparing students with knowledge and skills in disease prevention and health promotion.⁽⁸⁾ It is required to assess whether students were exposed to the key contents in the areas for prevention of NCDs and whether they felt this exposure was adequate.

Globally, urbanization has been occurring more rapidly in small-to-medium-sized cities in less-developed countries of Asia including India, which has led to the increase in the burden of NCDs. It is, therefore, utmost important for training to have focused component of NCDs at undergraduate and postgraduate levels through community-based learning and clinical training, and planned pilot studies including master’s thesis projects based on real-time.⁽⁹⁾

What Could be Done?

Very limited research has been reported in the literature, which can guide that what medical education and training should focus in curricula as far as the prevention of NCDs is concerned. In a context in which the curriculum is already crowded in both undergraduate and postgraduate education, the emphasis should be on using climate change to help meet the aims of existing courses. The topics for specific approaches to prevent

NCDs and various strategies can be incorporated into public health courses as a part of the curriculum in undergraduate medical education, with brief optional courses in residency and continuing medical education for established practitioners. Postgraduate training should also target those who may be considering or already are practicing in high burden regions.

General medical practice often includes as a substantial component an understanding of community-based factors that shape health and the delivery of health services. In changing dynamicity of the burden of chronic diseases, general practitioners may also need to adapt and develop their workplaces to help put in place systems for preventing and detecting health conditions. For example, they may need to build specialized skills in detecting and intervening in outbreaks of risk factors combining regional surveillance data on NCDs. General practitioners, the targeted ones, may need to be able to help develop new regional health reporting and promoting methods that count for local NCDs factors. They may need to learn new ways of collaborating with public health services, educationalists, and community agencies to help design and implement regionally responsive population health interventions.

Medical education and training also frequently seeks to impart professional, legal, and ethical competencies. In current context of NCDs, such competencies may take a different form. For example, doctors may need to access and share different kinds of information for their professional development. They may need to engage in collaborative learning with those who work in areas beyond health, such as new kinds of nutrition specialists performing analysis of food contents of available foods in the market, urban planners, who engage in constructing walking places in the cities, etc. Regional variation in health effects may bring greater responsibilities to share this available information with their immediate peers. The way in which general practices are conceptualized and run as businesses, and their relationship to their communities, may be different in different scenarios.

Medical education plays a very important and key role in preventing and control of chronic diseases. Developed countries have initiated the education and training of health workforce like in UK and in Australia through developing the policy documents The health impact of climate change: promoting sustainable communities, CDC Policy on Climate Change and Public Health and Human Health and Climate Change-National Adaptation Research Plan respectively.⁽¹⁰⁾

The definite changes are required in the training of the health workforce, as has been mentioned in the article published in the JAMA that "To rebuild the

generalist physician workforce, improving students' experience of internal medicine in medical school is no longer sufficient," the authors conclude. "Bolder reform will be required to improve the educational pipeline, practice and payment of generalist internal medicine physicians."⁽¹¹⁾ And also the need of the hour is to train the medical workforce, which is more talented, ready to serve, knowledgeable of needs of the community, and should be proud of providing the service to the needy and low resource settings.

In order to learn delivering high-quality health services for prevention and control of NCDs, broad and frequent exposure to disease prevention and health promotion core competencies has value, but may not sufficiently prepare students to deliver health-promoting services confidently. Creative curricula highlighting prevention's relevance throughout clinical practice and incorporating formal opportunities to apply knowledge and build experience may result in greater success.

The report published on Universal Health Coverage for India recommended by high-level expert group (HLEG) instituted by Planning Commission of India⁽¹²⁾ mentions that medical education also requires greater orientation of providers to the social determinants of health as well as to gender and equity issues. Curricula in medical schools should keep pace with the changing dynamics of public health, health policy, and health demographics. Medical and nursing graduates in the country should be well trained, prepared, and motivated to practice in rural and urban environments. Medical education and training needs to be reoriented by introducing competency-based, health system-connected curricula, and continuous education. The use of Information Communication Technology (ICT) for standardized teaching across institutions and the development of institutional networks to facilitate and disseminate e-learning packages and resource materials are also highly recommended. HLEG also highlighted uneven distribution of medical colleges resulting in skewed production and unequal availability of doctors across the country. There is only one medical college for a population of 11.5 million in Bihar and 9.5 million in Uttar Pradesh, compared to Kerala and Karnataka who have one medical college for a population of 1.5 million. It, therefore, recommended selectively setting up (an estimated 187) new medical colleges over the next 10 years in currently underserved districts with a population of more than 1.5 million.

Some of the innovative approaches for integrated teaching have been tried in the country. The Rajiv Gandhi University of Health Sciences, in collaboration with Karnataka Health Promotion Trust and St John's Medical College, successfully completed a WHO led

pilot project to integrate a curriculum for “Continuum of Care for Chronic Diseases and Conditions” in five medical colleges. 123 seventh term students and interns were trained by faculty from departments of medicine, pediatrics, community health, obstetrics and microbiology. The 5-day training program adapted the Integrated Management of Adolescent and Adult Illness (IMAI) into a D-TEAMS approach (Diagnosis, Triage, Education, Assessment, Management, and Support for positive living) using HIV and diabetes as examples. The training included class-room and field-based sessions and used participatory adult learning techniques. Significant differences were observed between pre and post training student scores. Students and faculty were very appreciative of the training content, methods, and duration and strongly recommended inclusion into the regular curriculum (Reynold Washington *et al.* Personnel communication).

There is a need to include teaching and training modules on prevention and control of NCDs into medical curriculum keeping in view the rising burden of NCDs in India. In addition, integrated teaching and management of chronic NCDs should be promoted by involving key specialties of community medicine, pediatrics, medicine, and allied subjects. Capacity building of teachers is required for introducing innovative integrated teaching methods. Medical Council of India realized the need for such changes and will be working in this direction in future.

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