Mapping of nutrition teaching and training initiatives in India: the need for Public Health Nutrition

Shweta Khandelwal*, Radhika Dayal, Meenakshi Jha, Sanjay Zodpey and K Srinath Reddy
Public Health Foundation of India, ISID 4, Institutional Area, Vasant Kunj, Near the Grand Hotel, New Delhi – 110070, India

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Abstract

Objective: India spans the spectrum of under- and overnutrition disorders and does so in generous proportions. India also tops the charts globally in the prevalence of risk factors for several chronic diseases. Although Public Health Nutrition (PHN) – both as an academic field as well as a means to improved health – has been around for two centuries in developed countries, it is only now coming to the fore as a conduit for tackling nutrition-related disorders in developing countries. In the light of these issues, we undertook an exercise to map the existing educational initiatives for nutrition, and in particular PHN, in India.

Design: This situational analysis of PHN across India was conducted using a combination of Internet search, telephone calls as well as interviews with experts. Information collected was pooled and tabulated using a snowball approach.

Setting: India.

Subjects: Not applicable.

Results: Currently, there are nearly 190 institutes in India that offer one or more nutrition courses, with the majority offering full-time courses. Of these, PHN was offered in less than five institutes across India and opportunities were confined to specialization options/modules.

Conclusions: This situational analysis reveals the huge gap in existing nutrition ventures and points towards the urgent need to undertake newer academic initiatives especially in the field of PHN in India. Reforms in the education and employment sector need to be brought in which may include working towards making the field of nutrition attractive for career pursuit. The focus of this discipline needs to be broadened to, but not limited to, span the entire spectrum from dietetics to research and teaching. Strong synergistic collaborations and academic partnerships with other developed countries should be encouraged to catalyse finding solutions to emerging and/or existing threats to public health problems.

India is experiencing simultaneous demographic, epidemiological, health and nutrition transitions which contribute to a huge chronic disease burden(1). India’s status can be perplexing: on one hand, it belongs to the elite group of G13 countries (with an estimated annual income of more than $US 1 trillion), whereas on the other hand, almost half of its population lives below the poverty line with a daily income of less than $US 1. India tops (or nearly tops) the charts in the number of people with diabetes as well as being prominent on the world hunger map. Rising obesity in children coexists with the largest number of the world’s low-birth-weight babies in India. The complexities of the link between nutrition and chronic diseases have yet to be unravelled(2).

Nutrition, along with four other sub-fields, falls under the core subject area of Home Science. Historically, Home Science was known as Home Economics which was limited to home and household only, but this has extended in the modern era and now includes interdisciplinary knowledge of wider living environments to understand their impact on the capacities, choices and priorities of individuals and families at all levels, ranging from the household to the local and also the global community(3). Therefore Home Science now comprises five major domains, namely Food and Nutrition, Resource Management, Extension Education, Textiles and Clothing, and Human Development(4).

In recent years, policy makers, donors and implementers have been faced with inadequate evidence relating to diet, nutrition and disease, especially in India. This has constrained the accurate identification of problems and adoption of context-relevant means to achieve desired policy interventions and programme objectives to tackle the rising challenges.
burden of malnutrition as well as chronic diseases. The role of Public Health Nutrition (PHN) is critical in bridging this gap, so as to define pathways and specific actions to apply epidemiological methods to nutrition in terms of methods of data collection, analytical procedures and interpretation of findings. As defined, PHN is the art and science of promoting population health status via sustainable improvements in the food and nutrition systems. Based upon public health principles, it is a set of comprehensive and collaborative activities, ecological in perspective and intersectoral in scope, including environmental, educational, economic, technical and legislative measures. The recognition of this discipline — in which academics and practitioners converge to understand, share and multiply their efforts to study and combat the nutrition-related disorders in India — is the need of the hour. However, there remains a lack of comprehensive, nationwide education and training programmes for specialists or for the community at large with a primary focus on PHN.

The present paper describes a situational analysis that was undertaken with the aim of examining the current status of PHN teaching and training initiatives in India, with a focus on the variety of courses offered, the capacity for production of PHN specialists as well as status of recognition of the importance of PHN as an academic discipline. The paper also identifies the gap in the current nutrition teaching scenario and highlights the need to work towards undertaking newer academic initiatives in the field of PHN in India.

Experimental methods

Information regarding the current state of training in nutrition in India was collected using a pragmatic, yet methodical approach. A systematic Internet search (using the search engines Google and Web of Science) was conducted using a set of keywords which included ‘nutrition’, ‘nutrition colleges’, ‘nutrition institutes’, ‘public health nutrition’, ‘home science’, ‘community nutrition’, ‘therapeutic nutrition’, ‘food and nutrition’, ‘diploma or certificate course in nutrition’, ‘education initiatives in nutrition’ and ‘home science universities’. Different combinations of the search keywords using Boolean operators like ‘or’ and ‘and’ were used to explore further relevant information. Time (when the institution was formed), language (medium of instruction) and gender (of students) were not controlled for. The search was restricted only to India. The period of search was until November 2010. Two research assistants collected this information individually, hand searched for. 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learning (n 7). Different courses on nutrition in India varied in duration for each level. In its conventional form, the Bachelors degree is usually obtained in 3 years, Masters in 2 years; Certificate and Diploma courses vary between 6 months and 2 years, while MPhil courses are usually for 1 year. A PhD programme can usually be completed in a minimum of 3 years (duration depends on several factors like topic selected, research depth, facilities and resources available). The eligibility criteria for the courses varied as per the colleges and degrees. The criteria for selecting candidates for Bachelors degree in most of the colleges was 10 + 2 with Science as the major, whereas those with MBBS, BSc (Nutrition or Home Science) were eligible to apply for post-graduation in Nutrition. Individuals with a 10 + 2 degree in Science could apply for Certificate courses in Nutrition (Table 1).

PHN did not emerge as an independent discipline in any college/university across India. However, a 1-year Diploma programme in Dietetics and PHN was offered (regular mode) by three colleges in North India. The fee range for the complete Diploma course is Rs 31 000–35 000 (~ US$700–750). Three institutes offered post-graduation and one offered a Doctoral degree in Food and Nutrition with PHN as the specialization track. A few of the universities (n 4) offered PHN as one of the electives to students during graduation and post-graduation. This reiterates/exposes the fact that India lacks dedicated educational initiatives for PHN.
Table 2 lists the various Indian organizations which conduct short-term training programmes or research in the field of nutrition but do not offer academic degrees.

**Discussion**

The current scenario offers both challenges and opportunities for nutritional scientists and public health practitioners. It is evident from the findings of the present situational analysis that, despite a health profile which suggests necessary PHN interventions, India severely lacks dedicated education and training programmes in PHN. As explained above, a minuscule fraction (0.02%; n 4) of the institutions offered PHN – and that too only in a cursory fashion (as electives or track options). Issues inherent to the management and treatment of chronic lifestyle diseases such as physical activity, diet and access to appropriate standards of care have also been grossly neglected. Recognizing PHN as a subject in its own right may help to create a nutrition workforce who could in turn contribute to address concerns like undernutrition and rising obesity in India\(^7\). PHN has a distinct/unique identity, incorporating the relevant aspects of the variety of disciplines that bear on the nutrition problem, as well as incorporating scientific advances in the understanding of nutritional problems\(^8\).

India allocated a mere 3.2% of its Gross Domestic Product to the education sector in 2010\(^9\). The lack of resources and attention to develop/promote educational endeavours in PHN in developing countries needs stronger publicity of the fact that this discipline can positively affect nutritional practices of the community, as well as improve the delivery of high-quality nutrition care\(^10\). Further, the implementation of national nutrition programmes also needs sustained institutional commitment as well as human and financial resources.

The success of the implementation of these programmes is determined by the quality and adequacy of numbers of trained and motivated professionals available nationally. Hence, the development of quality training programmes that can cater to the numerical needs of personnel who have the necessary skills and competencies to implement these programmes becomes a cornerstone of such national endeavours. The development of human resources for planning and implementing food and nutrition programmes to address the needs of communities in the developing world requires a problem-oriented, integrated approach. Finally, programmes conforming to common standards for education, training and quality assurance are the need of the hour, as the implementation of population-based strategies that are efficient and yield desired results needs a skilled and dedicated workforce\(^11\). A task of this magnitude requires concerted efforts of the different groups and stakeholders involved and, most importantly, a comprehensive workforce capacity equipped to address the
complex issues underlying all nutritional disorders. In order to successfully tackle these challenges, a paradigm shift is needed in the way the agenda of nutrition curriculum and nutrition research is handled in India. This needs systematic, rigorous and methodical research and analytical skills which are urgently required to strengthen the PHN cadre in India.

Specific skills often are provided best through short courses, certificate programmes, workshops and in-service training. Short-term programmes are the best medium for initiating and implementing innovative approaches, such as distance learning, courses on the Internet (online teaching), and the provision of continuing education intermittently to a group of nutrition leaders over a prolonged period of time. Short-duration academic courses like diploma programmes, certificate courses, etc. are flexible, emphasize experiential learning and are more responsive to changing nutritional needs and problems. In addition, these value-adding courses are less restricted by conventional bureaucratic and academic barriers(12). Tailoring online educational initiatives to the needs of the developing countries and providing recognition/certification will enhance the skill set of many professionals who may otherwise be limited due to geographical barriers and lack of expert guidance as well as quality education(7).

Trained professionals in PHN can join the pool of public health professionals armed with the added value of training in nutrition epidemiological research methods, food science and nutrition principles. They have the potential to hold key positions in local, national and international organizations such as non-governmental organizations, district- and state-level health systems, medical colleges, the pharmaceutical sector, government-run programmes like the Integrated Child Development Scheme and the National Rural Health Mission, UN organizations, regional WHO offices and other international organizations committed to the cause of public health nutrition. Unfortunately, more than 90% of Masters and Doctoral candidates in nutrition from India work on projects or teach at the home science colleges; there is a lack of research environment, facilities and funding to undertake meaningful nutrition research which would be of public health importance(7).

The establishment of training and educational initiatives for professionals in the field would also help to develop quality and research-based programmes focusing and specializing in PHN(13). However, it is also important to sensitize policy makers towards the need and importance of studying PHN as an independent discipline(14). Nutrition teaching programmes serve as the initiators of building research skills which in turn help to influence policy. People at the policy level can make a big difference if they understand the nutritional implications of the range of policy decisions. Thus, a comprehensive effort in public nutrition would need to address appropriate teaching and training of a critical mass of key individuals at each level of a country. It needs to emphasize the three As – awareness, access and affordability. Such a programme which takes all three As into account could achieve significant improvement in nutrition and create the human and institutional capabilities to sustain positive nutritional gains.

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