

The need for physical medicine and rehabilitation as an integral component in the medical education curriculum in India

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ABSTRACT

Enhanced quality of health care and increased life expectancy come with issues about the quality of life. This challenge is especially relevant to physical medicine and rehabilitation (PM and R)—a specialty focused on enhancing the quality of life. With the increasing burden of chronic diseases and disabling conditions, requirement for PM and R specialists will increase. This narrative review discusses the changing demographics, the disability trends, and the unmet needs both at present and anticipated in future. We also discussed problems faced by the present training system in PM and R, identified the lacunae, and attempted to provide suggestions to fill those.

Keywords: Curriculum, medical education, patient care, PM and R

Introduction

Health care in India faces newer challenges, predominantly concerning conditions afflicting the geriatric age group and the increased prevalence of noncommunicable diseases.^[1] Enhanced quality of health care has resulted in a population living longer than ever before; however, the increased life expectancy comes with issues about the quality of life.^[2] This challenge is especially relevant to physical medicine and rehabilitation (PM and R)—a

specialty focused on enhancing the quality of life by improving functional outcomes. Older adults often require more complex and long-term care; PM and R plays a crucial role in national health care. Physiatrists (PM and R specialists) will find themselves in higher demand in times to come, and therefore, it is vital to equip them with the skill set that is likely to be required in times to come.

The number of physiatrists required will be more in future. However, the growth in PM and R residency positions has been lower than that of other postgraduate (PG) medical specialties. The total numbers of PG seats are still in double digits for a country with a population of 1.3 billion, a major part of which will fall in the geriatric population in times to come.^[3] It will be prudent to start focusing on this underserved population existing

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now and the anticipated burgeoning population in times to come, or we will be failing in our duties as a responsible nation.

Primary care physicians (PCPs) are typically the first point of contact for patients, intervening in the pathology of illnesses such as diabetes mellitus. The impact of impairments such as sensory loss, ulceration, and contractures on quality of life, such as difficulty walking, must be considered, and with the active support of PCPs in the form of a collaborative effort with PM and R specialists, functional outcomes will be easy to achieve to their fullest potential. PM and R specialists strive to improve the quality of life by improving functional outcomes while also treating the underlying cause when it is treatable. This collaborative effort is more likely to succeed if aspiring PCPs are exposed to PM and R competencies during their undergraduate studies.

This narrative review discusses the changing demographics, the disability trends, the problems in existing PM and R training, and the unmet needs both at present and anticipated in future.

Aging

Aging is associated with cataracts, hearing loss, osteoarthritis, osteoporosis, sarcopenia, issues with bodily balance, frailty, and psychological problems, amongst many other impairments. With the rise in the elderly population, the demand for holistic care tends to grow. Most of these impairments can result in disability, which can jeopardize the quality of life in the elderly and is a significant health indicator that can have a heavy social impact.^[4,5] In addition, as people age, there are increased chances of developing multisystem morbidities, and once disabled, there are high chances of deterioration and decreased likelihood of recovering from illnesses.^[6] Declining regenerative and repair capability in old age makes focused preventive strategies vital.

Cardiovascular disability

Certain aspects of the cardiovascular disease epidemic in India are causes of concern, such as its accelerated buildup, the early age of disease onset in the population, and the high case fatality rate. The epidemiological transition from predominantly infectious disease to noncommunicable diseases has occurred over a relatively brief period in India.^[7] Cardiac rehabilitation will prevent cardiac incidents to a considerable degree in the first place, decrease recurrence, and enable the survivors to lead a relatively safe, independent, and productive life.^[8,9] The feasibility of cardiac rehabilitation has been studied in India; however, rehabilitation programs are yet to be established.^[10] Cardiac rehabilitation includes preventive strategies before any major catastrophe in addition to techniques and coping strategies after any cardiovascular event, such as myocardial infarction and cerebrovascular incidents.

Pulmonary disability and COVID-19

Global burden of disease (GBD) survey data have shown that both acute and chronic respiratory diseases are prevalent in

substantial numbers in India. Disability-adjusted life year loss due to respiratory diseases has increased in India from 1990 to 2016. Chronic obstructive pulmonary disease is one of the most everyday illnesses that can benefit from pulmonary rehabilitation.^[11]

The current COVID-19 pandemic will place pressure on existing health-care systems around the world. Many people are predicted to become critically ill with acute respiratory distress syndrome and require intensive care unit management. High levels of physical, cognitive, and psychosocial impairments can be anticipated. Rehabilitation specialists will serve as an essential link in the continuum of care, helping move patients from acute sites to eventual discharge to the community and subsequent re-integration. Innovative approaches to care, such as telerehabilitation, are likely to be needed in this environment.^[12] The curriculum should include training in telemedicine, cloud clinics with its legal validity and implications.

Chronic pain syndromes

Global chronic pain prevalence survey found that 19.3% of the Indian adult population suffers from chronic pain. Chronic pain is a growing problem. It becomes complex due to underreporting, inadequate treatment, and underrecognition in developing countries. Half of the surveyed people belonged to the rural areas.^[13] Data in the Indian population are lacking, and, therefore, reliance on global data is required until we have a database of our own. The World Health Organization estimates that 80% of patients with severe pain never receive adequate treatment.^[14] A percentage of 71.2 of chronic pain sufferers visit a general practitioner. Globally, only approximately 5% of patients consult a specialist, such as a PM and R specialist. This shows a lack of awareness about “pain medicine” as a separate specialty among the general population.^[13] Ultrasound examination of the musculoskeletal system is a logical extension of clinical examination. A study in the United States demonstrated that only 44.9% of the PM and R residencies provide exposure to training in ultrasonography. A formal curriculum was in place in only 20.5% of sites.^[15]

Locomotor disability

Approximately 0.6% of the Indian population has locomotor disabilities.^[16] Approximately 15–20% of the total disabled children have cerebral palsy.^[17] These children are likely to live longer into adulthood. Similarly, with improvements in health care, spinal cord injury (SCI) patients will live longer. These populations cannot be left underserved, and there is a need for training PM and R specialists to take care of them during the later years of their life. They have to face multiple problems affecting almost all aspects of their life. The number of SCI treating health-care institutes and the services available are often inadequate to meet the population’s demand. Acute care, bladder care, bowel care and sexuality, and fertility management all add to the challenges of SCI and the apparent issues in locomotion.^[18] Lower limb amputations form a considerable number, with

5436,000 Indians having a locomotor disability. Most members of this group are young, active, earning members. The primary cause of amputation is road traffic accidents, railway accidents, other trauma, and diabetes. Diabetes and vascular insufficiency are likely to lead to an increased risk of amputations with increased longevity.^[19]

Disability certification

“Disability certificate” is necessary to access benefits accorded under India’s Rights of Persons with Disabilities Act. A proper assessment of the persons is of utmost importance. The curriculum should include adequate training as PM and R doctors invariably form a part of the disability certification boards. Disability certification is intricately linked to the reservation in educational institutes, jobs, concessions in tickets and taxes, opportunities to avail of loans at reduced interest rates, and monthly pensions. The hallmark of a just society is that it treats its citizens fairly.

Scarcity of rehabilitation services

A 2018 literature review found significant unmet needs for rehabilitation across all world regions, and in some countries, more than 50% of people who require rehabilitation services do not receive them. Data in India are not available. Several studies from Africa, for example, show that between 62.5% and 82.5% of those needing rehabilitation services don’t receive them (Mozambique 62.3%, Malawi 76.2%, Zambia 62.5%, and Lesotho 82.5%).^[20]

Lack of prioritization of rehabilitation services, inadequate funding, and lack of trained rehabilitation professionals, with less than 10 skilled practitioners per 1 million population in many low- and middle-income settings, hinder the delivery of high-quality rehabilitation. In addition, there is a need for more research and data on rehabilitation. Lack of resources leads to imbalances in the available rehabilitation services across the country, with services concentrated in a few urban areas. High out-of-pocket expenses in resource-poor countries result in a lack of assistive technologies and devices.^[20]

Proposed undergraduate education in PM and R

PM and R was inadequately represented in the MBBS curriculum. PM and R has been included in both the national and institutional goals of the revised (2019) MBBS curriculum. Topics such as cardiac rehabilitation, pulmonary rehabilitation, rehabilitation of persons with cerebral palsy, therapies for spasticity including medications, serial casts, nerve blocks, botulinum toxin injections, commonly used drugs in neuropathic bladder, and prevention of falls in the elderly have been included. The rights and entitlements of differently abled persons have been emphasized. Skills such as intra-articular injections are planned to be taught. There are other competencies also, and this list is not exhaustive.^[21] Lack of PM and R faculty in most medical colleges may turn out to be a hindrance in implementing this curriculum.

Postgraduate education and research in PM and R

PG training is imparted through MD, DNB, and Diploma PM and R courses. The PG curriculum emphasizes the prevention, diagnosis, evaluation, and treatment of disorders, particularly those of the neuromusculoskeletal, cardiovascular, and pulmonary systems, at any age, acquired or congenital, that may produce temporary or permanent activity limitation, disability, or participation restriction in society including reduction of quality of life. Production of PM and R specialists is far less compared to the demand. Referral systems are still not in place. Standard and universal referral for rehabilitation is probably the essential policy to be implemented. It should be at par with international institutes of repute. Trauma, SCI, brain injury, stroke, etc., need to be compulsorily transferred to PM and R to achieve superior outcomes.^[21] In the developed world, stroke patients are transferred to PM and R after meeting clinical stability criteria as soon as possible.

No specific system of research, training, and development is in place to improve the lives of individuals with disabilities. A large amount of data are being generated by medical colleges, institutions, and research organizations in disability. These have not been analyzed to create scientific evidence, which policy planners can use. To integrate appropriate technical intervention for reducing the disability burden in national programs, it needs researched proof before they are implemented in national public health programs.

Subspecialty training

PM and R is a varied and vast subject and requires subspecialty training. This will not only improve patient care but also boost interest in young aspirants. Fellowship in trauma rehabilitation and neurorehabilitation is present in two central government institutes. Fellowships in pain medicine are present in a few hospitals. In the United States, board-certified subspecialties after PM and R residency includes SCI medicine, brain injury medicine, sports medicine, palliative medicine, pediatric rehabilitation, and pain medicine.^[22,23] Subspecialty training will ensure better patient care and enhance interest among young aspirants as we go forward.

Future—Looking at the data from the United States as a surrogate for the India of tomorrow?

Physician compensation and satisfaction data are not available in India. A 2020 report in the United States, done on over 17,000 doctors, depicts that the mean wage of PM and R specialists was placed at the 17th place amongst more than 30 clinical specialties. It was ahead of well-known specialties such as Obstetrics and Gynecology, Pediatrics, Rheumatology, and Endocrinology. Nearly 80% of the PM and R doctors mentioned that they would like to choose PM and R as their career option again if given an opportunity.^[24] These data may be used as a surrogate of India of the future to prioritize efforts to prepare human resources in the field of rehabilitation.

Discussion

The shortcomings in the PM and R curriculum stem from the fact that there is virtually no exposure to this subject in the UG curriculum. There is a giant leap after a grueling five and a half years of reading other subjects and running around during internship. This is usually followed by a highly competitive PG entrance exam cracking, which takes a year or two, if not more, in most cases. Students opting for PM and R usually have no clue about this subject. The subject chooses them rather than the other way around, as most wished to do postgraduation in another stream. This scenario is likely to improve if the proposed UG curriculum is appropriately implemented. The problems are compounded by the fact that society does not recognize the subject at par with other subjects, partly due to its nonexclusivity as far as diseases are concerned. There is almost always another specialist who provides that service, albeit at a less comprehensive level, particularly when it comes to quality of life. This is more so in developing countries such as India, where only a few specialists are concerned with top doctors. Specialization is increasingly becoming more rampant, and PM and R lacks subspecialization.

As there are plenty of jobs in the government sector, almost everyone gets absorbed in the system. There is no presence in the private sector barring a few people who can be counted on the fingers of one hand. These professionals are fewer than the number of PGs passing out each year.

Anyway, there lies an opportunity in every crisis, and the time was never better for the advancement of the subject. As the saying goes, a rising tide lifts all boats and would lead to personal growth. The need of the hour is sensitizing UG's about the subject so that they take it up voluntarily out of passion rather than because nothing else was available to them. We need to implement the UG curriculum to explain the basic concepts while also creating aspirations in their minds. This is a difficult task due to the lack of role models that other subjects have cultivated, but the start has to be made.

The PG curriculum as it stands today varies so much across the country that while disability certification may be taught well at one institute, the same institute will provide no exposure to the surgical skill set required. Some institutes have good neurorehabilitation exposure, but then, that is all that is taught there. We need uniformity across institutes as far as the curriculum is concerned. This imbalance gets reinforced as pass-outs of these institutes develop the subject along these same lines wherever they join as faculty members. They are not open to new ideas.

PCPs provide care across the continuum, beginning with primary prevention and progressing to secondary management and beyond. A collaborative effort with rehabilitation specialists who are sometimes at the other end of the spectrum is likely to provide the most comprehensive care for patients.

Conclusion

While the need for rehabilitation is growing, modernization of PM and R education in India is needed with a paradigm shift of policies. Awareness in part of the general population and fellow physicians needs to be done. A standard referral protocol for patients to gain access to rehabilitation services, including appropriate subspecialization expertise at par with developed nations, is the need of the hour.

Key Points

1. PM and R specialists play an important role in addressing functional limitations in order to improve quality of life.
2. Together, PCPs and PM and R specialists will aid in achieving the most comprehensive form of treatment.
3. PM and R competencies should be an integral part of the UG curriculum.

Take home message

The rising prevalence of noncommunicable diseases and their consequences necessitates a shift in emphasis to functional limitations and their impact on quality of life. The time has come to include rehabilitation as an essential component of management strategies. These services can be provided by PM and R specialists in a comprehensive manner.

Novelty

This article focuses on an unmet need that is likely to worsen unless intervention in the form of PM and R competencies is introduced into the curriculum.

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Conflicts of interest

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