PERSPECTIVE

Educational Research and Scholarship in India: The Way Forward

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Medical education research (MER) aims to improve the practice of medical education by applying the theory of educational research. Internationally, medical education research has grown exponentially and has established itself as a distinct field. In contrast, in India, the medical faculty is either bogged down by clinical responsibilities, or is busy with biomedical research. The recent initiatives such as implementation of competency-based medical education (CBME) for medical undergraduates, and push coming from regulatory agencies besides National Education Policy have become game changers. The emerging concept of scholarship, takes in to account all scholarly activities in a fair manner. The scholarship of teaching and learning (SoTL) is helpful in connecting teaching with better patient care outcomes through evidence based approach. It also promotes a community of practice to boost research and publication activities. Finally, there is a need to enlarge the scope of research from treating sick children to promoting total wellbeing, which requires interdisciplinary and interprofessional approach to research.

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Medical education research (MER) is a relatively new field, which aims to improve the practice of medical education through application of research methods drawn from educational and social sciences [1]. It uses quantitative, qualitative and mixed-methods to solve research questions [2]. However, being an offshoot of medical education, it has been influenced by quantitative approaches. Of late, the untapped potential of MER is being explored, which forms the theme of this paper [3].

India is one of the largest producers of medical manpower, albeit there is shortage of specialists in many areas. Indeed, medical education has grown exponentially during the post-independence era, both in terms of number of medical colleges and student enrolment. However, it is a matter of constant debate for its relevance, access, quality, outcome and impact on health care delivery. Paradoxically, the research in this field (MER) is yet to take off in a big way, in comparison with the international arena. According to a report based on the number of Google citations, only 5003 papers were published from Indian researchers during the last five decades (1971-2020) [9]; whereas, international journals, published more than 100,000 papers during the same period. As per ten Cate [5] "*medical education research today, has grown across the world, and it has been established as an independent discipline - health professions education scholarship.*" The number of international journals in this field has grown from 3 to 35, during the last fifty years, publishing more than 100,000 articles, contributed by a community of more than 20,000 scholars. Mega international conferences are held by organizations such as Association of Medical Education in Europe (AMEE), attracting more than 3800 participants, every year. More than 26 Masters programs and several PhD programs are in place; Maastricht University alone enrolling more than 100 PhD scholars. On top of it, this field has led several epoch-making innovations like problem-based learning (PBL), objective structured clinical examination (OSCE), Simulation pedagogy, Quality assurance, and Workplace based assessment (WPBA) [5].

In contrast, India has very few journals exclusively devoted to medical education, and very few institutes engaged in research. Publication in reputed international journals of medical education is not easy, and article processing charges (APC) are high. Researchers from India and other low- and middle-income countries (LMICs) also face language, geographical and cultural barrier in reaching out to international journals. The developed countries' contexts are different and the editorial boards do not have adequate representation from LMICs. This has been called as 'the leaky pipeline of publications' [9]. However, some specialty associations in India regularly publish papers in medical education, the Indian Academy of Pediatrics (IAP) being a notable example.

NAILING THE PROBLEM

Lack of awareness about the power and utility of MER is a major hurdle. Though faculty development programs (FDP) have become popular, they are focused on peda-

gogy of instruction and assessment, rather than educational research. There is no in-depth training in the 'what' and 'how' of MER. The courses and fellowship programs in this area are limited. Some of the existing initiatives include courses conducted by National Teacher Training Centre (NTTC) linked with actionable project, Advanced Course in Medical Education (ACME) launched by MCI/ NMC, fellowship program run by four Foundation for Advancement of International Medical Education and Research (FAIMER) regional centers located at Ludhiana, Mumbai, Coimbatore and Manipal, certificate programs run by MEU-INDIA, and Diploma, Masters and PhD programs run by a few health sciences universities. For a faculty member, overloaded with teaching or clinical work, MER is not appealing, as there is no incentive, protected time or additional weightage for publication for the purpose of promotion [4]. Even while assessing research contribution, the regulatory bodies are obsessed with easily measurable criteria thus glossing over intangible criteria of validity, quality, outcome and impact of the research study [6]. The gross indicators like number of publications, and funds generated through research are commonly used. Even the criteria of number of citations and impact factor of the journal can be deceptive. What is needed is valid criteria for assessing the overall contribution of a faculty member to the subject area, by using the 360° approach [7].

Poor research design and flawed methodology are other lacunae [1]. Research problems are often repetitive, convenience-based, and frequently not relevant. Too much emphasis is laid on data collection, without attention to the theory (how the intervention works). A systemic analysis of original papers in medical education published from India over a 10-year period (2006-14) reveals that most of the studies (74.6%) are focused on undergraduate education, using quantitative methods. Only 18.3% of studies used mixed methods, and 7% used qualitative methods [8]. Another limitation in the Indian context is the lack of mentoring support from the leaders, and absence of strong network to support capacity building.

In spite of the limitations cited above, MER has its own unique features which are outlined in **Box I**.

Converting Problems in to Opportunities

Since 2019, the implementation of competency-based medical education (CBME) for the MBBS course has raised several issues, which provide a golden opportunity to the teachers to conduct systematic inquiry and research. The research questions that emerge are – how can we organize foundation course, bring curricular integration, use simulation effectively, teach and assess attitude ethics and communication (AETCOM) modules, redefine our assessment, introduce clinical clerkship, and strengthen internship [10]? There is a vast scope for exploring new interventions and to evaluate their efficacy.

The new postgraduate (PG) regulations have mandated the submission of thesis, poster and one original paper as requirements for awarding PG degree [11]. This has stimulated a large number of training programs (online and offline) and production of books and resources on research, including MER [12]. Thanks to the emergence of open access journals and online platforms, the problem of shortage of literature is being resolved [13]. However, new applications such as Chat GPT using artificial intelligence, have posed new challenges to circumvent their misuse by unscrupulous elements. This is an area of concern to the researchers.

THE SCHOLARSHIP OF TEACHING AND LEARNING

Scholarship, in common language, means monetary support, a fund or grant for pursuing higher studies. But scholarship in academics means a scholarly activity leading to a valuable contribution to the academic community [13]. To be considered as a scholarly activity, it must satisfy five criteria, called the five Ps: Product of high quality, whose process is explained, peer reviewed, placed under public domain, and which serves as platform for further work. Traditionally, only research satisfied all these criteria and was therefore, considered as gold standard for measuring scholarship [15]. Boyer [16] questioned why research alone is considered as the scholarship, and why not teaching or clinical work, which are on par with research. He, therefore, defined four types of scholarships: scholarship of research, teaching, application and integration [16]. Scholarship of teaching has been later expanded as scholarship of teaching and learning (SoTL) to capture all activities of a teacher that are of high standard, process explained, peer reviewed, and serve as a platform for further work. SoTL differs from scholarly teaching, in that it assumes high value because of peer review process and wider application for practice [17].

The concept of SoTL is gaining wide acceptance because of its potential to form a network of scholars. This is referred to as community of practice, which can mentor, support, handhold, and empower new researchers [18]. The experience of FAIMER fellowship program is an example of community of practice. The professional associations like IAP already serve as a community of practice.

The assessment of SoTL achieved by a faculty member is a contentious issue. It requires Multiple Source Feedback (MSF), a 360° approach, which includes a wide variety of evidence such as workshops organized, presentations

Box I Unique Features of Medical Education Research

Purpose and scope

MER can address five types of research questions:

- Descriptive (How is smart phone used in community health?)
- Explanatory (Why does the use of smart phones help/hinder the student performance?)
- Exploratory (How can the smart phone be used effectively for enhancing doctor – patient communication?)
- Predictive (Can use of smart phone predict future performance of doctors?)
- Evaluative (What is the impact of a 'smart phone training program' on the performance of final year MBBS exam?)

Methods used

Quantitative methods (focus on numbers), but more often Qualitative methods (focus on words), and mixed methods.

Ethical issues and sampling

Focus on giving benefit to the whole class/cohort, informed consent, and sensitivity of teacher-student relationship while using observation or interview; Universal or purposive sampling.

Research setting and cost

Classroom, laboratory, field or community; no need for sophisticated equipment or resources; hence, cost effective.

Tools, and techniques employed

Experiments are not feasible in MER as many variables cannot be controlled. Descriptive studies, observations, case studies and program evaluation are commonly used.The tools and techniques include, questionnaire, interview, focus group discussion, tests, checklist, rating scales, documents, photography, videography etc., Tools are unlimited, depending upon the purpose

Data collection, analysis

Only quantitative data deploy statistics; qualitative data follows transcription, coding, identification of themes and triangulation to establish authenticity.

Interpretation

Focus on contextualization rather than generalization

made at local, national and international conferences, role played as speaker, moderator and chairperson, publication of articles in peer-reviewed journals, member of a cross-institutional or national committee, reviewer, member of editorial board, editor of journal or book, and role played as expert or consultant at various level [17]. For documenting the achievement on a regular basis, it is necessary to introduce a portfolio. The portfolio helps in self-reflection. It should be reviewed periodically, by a mentor who gives feedback, and motivates the mentee for enhancing the scholarship.

THE WAY FORWARD

Conventionally, research in pediatric education has addressed pedagogical issues related to teaching, curriculum, or assessment of students. It is time for a change. In recent times we hear a lot of behavioral and psychosocial problems of children beyond physical health. Growing examination stress, delinquent behavior, bullying in schools, besides child abuse, child labor and trafficking, early marriage and assaults on girls. There is a need to address mental, emotional, social and moral development of children in a holistic manner. The overall growth and development of children, including cognitive, emotional development combined with human values, is a joint responsibility of pediatricians, parents, schools and civil society.

This implies enlarging the focus of curriculum and research from treating sick children (curative approach or pathogenesis) to promote wellbeing of children (salutogenesis) in a holistic manner. One may argue that this task is 'utopian and beyond the scope of medical education', especially in view of the shortage of pediatric specialists. The present workforce of pediatric faculty and researchers is too little to handle the 444 million child population of India. However, this agenda is futuristic and unescapable in the national interest.

The way out is to collaborate with the schools, colleges, universities and non-governmental organization (NGO) at large, to take up interdisciplinary and interprofessional research to address overall wellbeing of children. This augurs well with the spirit of National Education Policy, 2020 [19]. The welfare programs should be supported by program evaluation for evaluating such programs and determining their impact [15]. It is a robust area of research utilizing both qualitative and quantitative approaches to take decision alternatives.

It is heartening to note that steps are already being taken in this direction. A notable example is Health Promoting Schools [20]. This is a school health program linked with accreditation of schools undertaken jointly by Non Communicable Disease Prevention Academy (NCDPA) and IAP. A statement of 10 commandments was

endorsed by the Executive Board of IAP in March, 2022 [21]. Besides physical fitness, the program addresses hygiene, food safety issues and provi-sion for counselling children with learning disorders. Development of human values among children is a matter of universal concern. Pediatricians being the healers are uniquely empowered to chip in this ambitious program, with some orientation programs in ethics and medical humanities.

A large number of NGOs and voluntary organizations are working in India for the welfare of children [21]. For example, Sri Sathya Sai Seva Organization (SSSO), works for the development of five core human values: truth, righteousness, peace, love, and non-violence, and one of their main wings is called Balvikas. The weekly training imparted by their trainers includes story-telling, prayer, group singing, meditation (silent sitting), and service (*seva*) activities [22]. The researchers in pediatrics can establish fruitful collaboration with such organizations, especially in the area of growth and development, program planning and evaluation. This results in a holistic approach, minimizes the cost of research and maximizes the outcome and impact.

In conclusion, there is a need to redefine our research priorities, polish our research methodologies, and reimagine the system of assessing the research. The faculty should be proactive in understanding and applying MER in their diverse settings. The managements and regulatory authorities should go out of the box to look at research contribution from a broader perspective of overall benefit to the society [23]. With concerted efforts from faculty, professional organizations, government and the civil society, India could make a sea change in the content and the contours of future MER. This ascribes a bigger role for researchers to focus on interdisciplinary and interprofessional research. Hopefully, this will help Indian pediatric educators to become game changers, and be on par with international leaders.

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