ORIGINAL ARTICLE

A thirteen year audit of manuscripts related to medical education published in leading medical journals of Pakistan

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Abstract

Objective: To audit the number and type of published articles related to medical education in leading Pakistani biomedical journals.

Methods: The audit covered the period from January 2001 to December 2013. Journals either indexed in Medline or having an impact factor were selected. The audit was done in two phases. First, articles related to medical education were screened by reading the titles. Then abstracts were studied and articles were placed into several pre-defined categories based on article type and research topic. Data was analysed using SPSS 20.

Result: A total of 118 relevant articles were published. Of them, 60(51%) articles were published in the Journal of Pakistan Medical Association, 42(35.6%) in the Journal of College of Physicians and Surgeons Pakistan, 4(3.4%) in Pakistan Journal of Medical Sciences, and 12(10.2%) in the Journal of Ayub Medical College. Articles related to curriculum development were 33(28.0 %), teaching 28(23.7%), assessment 29(24.6%), faculty training 5(4.2%), continuous medical education 4(3.4%), ethics 3(2.5%), and others 16(13.6%).

Conclusion: There is a need to increase the quality of health profession education research, documentation and audit of the global contribution of Pakistani medical educationists.

Keywords: Audit, Medical education, Health professions education. (JPMA 66: 439; 2016)

Introduction

When Pakistan came into being in 1947 there were only two medical colleges with approximately 500 medical students. This improved substantially and in 2012 it was estimated that the number of medical colleges in the country was 88 with more than 170,000 undergraduate medical and dental students.[1] This implies that the standards of medical education in the country have to be on a par with international standards, and research should be carried out on different aspects.

Medical education has evolved as a separate discipline in recent years all around the globe. New and better assessment techniques are replacing traditional essay and viva voce exams. Specialised licensure exams such as United States Medical Licensing Examination (USMLE)[2] in the United States of America (USA), Professional and Linguistic Assessment Board (PLAB) in the United Kingdom (UK)[3] and Medical Council of Canada Evaluating Examination (MCCEE) in Canada[4] have been designed and are constantly being modernised. Problem-based learning (PBL) methodology is being adopted at medical schools around the world to bring medical degree programmes in consonance with modern guidelines.

There is a growing concern among the medical fraternity to strengthen the bond between what doctors learn and what they practice.[5] Research in different aspects of medical education such as curriculum development, teaching methodologies, assessment and evaluation techniques, has started gaining a steady momentum globally.[6-9]

The current study was planned to audit the number and type of articles related to medical education being published in leading Pakistani biomedical journals.

Material and Methods

The audit covered the period from January 2001 to December 2013. The total number of biomedical journals published in Pakistan is estimated to be 75.[10] Only Institute of Scientific Indexation (ISI)-Thomson scientific Pakistani journals[11] or journals indexed in Medline were selected for the audit. These included the Journal of Pakistan Medical Association (JPMA), the Journal of College of Physicians and Surgeons Pakistan (JCPSP), the Pakistan Journal of Medical Sciences (JPMS), and the Journal of Ayub Medical College (JAMC).

The articles published in these journals during the period under audit were accessed through online archives present on their respective websites and Pakmedinet

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journal index. The audit was done in two phases. First, articles related to medical education were screened on the basis of their titles. Then, their abstracts were read and these articles were placed into several predefined categories based on article type and research topic. The articles were documented in categories that included: original research, review articles, editorials, letter to editor, short communication, student's section, and other (commentary, opinions and debates etc.).

Pre-defined research categories were curriculum development, assessment, teaching, faculty training, continuous medical education (CME), ethics and others. Affiliations of corresponding authors were also noted. Data, after having been compiled, was re-checked.

Data were analysed using SPSS 20. Frequencies for type, research category, city and affiliation of authors were calculated. A line graph was created to represent the year-wise trend for publication of articles related to medical education in Pakistani biomedical journals.

Results

A total of 118 relevant articles were published in the four leading biomedical journals: 60(50.8%) in JPMA, 42(35.6%) JCPSP, 12(10.2%) JAMC and 4(3.4%) PJMS. Articles related to curriculum development were 33(28.0 %), teaching 28(23.7%), assessment 29(24.6%), faculty training 5(4.2%), CME 4(3.4%), ethics 3(2.5%), others16(13.6%). Distribution of articles according to type was Original research articles 71(60.2%), Reviews 7(5.9%), Special Communication 4(3.4%), Letter to Editor 4(3.4%), Editorial 16(13.6%), Students' Corner 5(4.2%), others 11(9.3%). Contributions from Pakistan were 93(78.8%), while global contributions were 25(21.2%). Among the national publications, Karachi produced 57(61.29%) articles and Lahore 15(16.13%) (Table). A line graph was generated to reflect the 13 year trend (Figure).

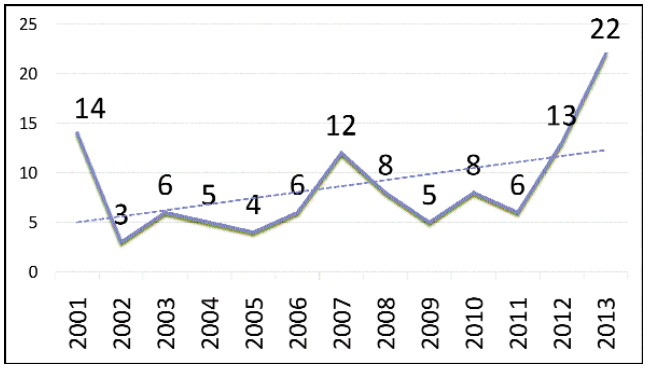

Figure: Trend of published articles related to medical education over 13 years.

Table: City-wise distribution of articles related to medical education from Pakistan published in Pakistani journals (n =93).

City (%)	Frequency (n)	Percentage
Karachi	57	61.29%
Lahore	15	16.13%
Islamabad	5	5.34%
Peshawar	3	3.22%
Rawalpindi	2	2.15%
Faisalabad	1	1.07%
Bahawalpur	1	1.07%
Abbottabad	1	1.07%
Jamshoro	1	1.07%
Multan	1	1.07%
No city mentioned	6	5.1%

Discussion

Currently there are 90 recognised medical and dental colleges in Pakistan.[12] The number of manuscripts related to medical education published during the 13 years in the leading four medical journals was 118. Most of the manuscripts (72, 61%) were published by few medical institutes /colleges (notably, Aga Khan University and Ziauddin Medical College), while a majority of the medical colleges did not contribute even a single manuscript on medical education in national and international biomedical literature. This should be a matter of concern to all involved with medical education in the country.

Recognising the importance of medical education, several universities around the world are offering postgraduate and doctorate programmes in Health Profession Education (HPE).[13] Medical journals solely dedicated to medical education are being published regularly. Medical fraternity in Pakistan has also taken several steps to strengthen HPE in Pakistan. The College of Physicians and Surgeons, Pakistan (CPSP) also offers a fellowship and diploma programme in this specialty. Several universities such as University of Health Sciences, Lahore, University of Lahore, Lahore, Khyber Medical University, Khyber Pakhtunkhwa, Riphah University, Rawalpindi, and Aga Khan University, Karachi, are also offering postgraduate programmes in HPE. JCPS published a supplement on medical education in October, 2013. Several international conferences on medical education have been organised in Pakistan in the last five years. Keeping in view this development, it can be predicted that HPE will develop in Pakistan in future.

Most of the articles published were related to curriculum development (28%), teaching techniques (23.7%) and assessment methodology (24.6%). This is an important finding as these three are important components of

medical education. International collaboration was involved in 21% manuscripts. With increased globalisation and international collaboration, it is expected to increase in the future.

The graph shows that there has been a sharp decline in the number of articles on medical education/HPE in the target journal from2001 onwards. One can hypothesise that the level before 2001 was reasonably high and dropped when the CPSP started standardised and reorganised Department of Medical Organisation (DME) in 2000 and researchers realised that now articles on medical education can be checked for validity and reliability.

There has been a gradual evolution of under and postgraduate medical education in Pakistan. One decade ago DME was not present in most medical colleges, but now DMEs are being established all around the country. In addition, successful national and international conferences on medical education are being held regularly by the Aga Khan Medical University, Karachi; Association for Excellence in Medical Education, Islamabad; Fatima Jinnah Medical College, Lahore, and CPSP, Karachi.

The published research on HPE in Pakistan is very little and this trend is unsatisfactory. Medical faculty should be educated about the significance of this field. DME should be established in every medical college to improve research output in this field. They should be managed by dedicated and qualified personnel in medical education/HPE instead of the busy clinical faculty which mostly manages DME on an ad-hoc basis. To truly understand the potential of research in this field, the stakeholders should revisit the revolution brought about by Flexner's report (1910) in medical education in North America.[14]

There were a few limitations of the study. First, we included only articles published in the leading four medical journals of Pakistan. There is a possibility that many more medical education/HPE related articles would have been published in other non-indexed, zero impact factor (IF) journals of Pakistan which were left out by this audit. Secondly, many experienced authors, especially those working in established institutes, prefer to publish their research articles in indexed international biomedical journals with IF. These articles were also excluded by the current study. An online search will reveal many medical education/HPE articles published in international reputable medical education journals authored by Pakistan-based medical educationists. Thirdly, an in-depth audit incorporates both quantitative and qualitative analysis of the manuscript including research methodology, statistical analysis, results and conclusions. This was not carried out by the study and only parameters like the number, category, institutional affiliation and the city were audited.

Conclusion

The number of manuscripts related to medical education in Pakistani journals in the last 13 years was very low compared to the number of medical colleges in the country. Still the number of manuscripts has increased steadily in the last decade. This reflects an increased awareness of this field. It is expected that this trend will grow, resulting in better and more effective curriculum development and teaching methods.

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