

UNDERGRADUATE MEDICAL RESEARCH IN PAKISTAN: NEW FRONTIERS WITH OLD BOUNDARIES

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“We all must keep the ‘U’ alive in Undergraduate Medical Research”¹

(Keynote address, Sixth UMR Fair-2013, at Peshawar Medical College)

It seems only yesterday, that a new medical college in Peshawar called upon her students to perform research projects and held a small one-day competition called the “UMR Fair-2007”. Students and faculty received the event in a positive light. They termed it a refreshing and innovative effort by the UMR department, then in its infancy. By 2008-09, undergraduate medical research was adopted as part of the five year MBBS curriculum at PMC. A detailed “Manual of Undergraduate Medical Research”,² was compiled, complete with five-year curriculum details, authorship policies, rules for ethical reviews of student’s proposals, budgeting proposals and evaluation forms for research electives at other institutions.

It is felt and mostly agreed upon by the wise ones in medical academia, that there is dire need to teach research to undergraduate medical students in order to prevent an acute deficiency of doctor-scientists in the field.³ Medical curricular initiatives such as, Tomorrow’s Doctors, the Scottish Dean’s Curriculum group and the Guide to Good Medical Practice, USA, recommend development of transferable skills,

such as communication, teamwork, time management and critical thinking as well as fostering of research-specific skills among undergraduate medical students.^{4,5} Keeping in tandem with developed world, a small number of initiatives were taken to inculcate basic research methodology and epidemiology in medical curricula in Pakistan. Although aimed at creating physicians sensitive to their community needs, Community Oriented Medical Education (COME), became the forerunner and most well-known national level, WHO-supported and actually implemented initiative for medical curricular reforms.⁶ COME had all the essential ingredients of preparing future doctors with a sound albeit preliminary understanding of epidemiology and systems’ research.⁶ COME was implemented in four government sector medical colleges in 1999.⁷ Unfortunately, COME, with its promise of bright new horizons, failed to be implemented in any medical institution in Pakistan, as reported by the original team.⁷ All the original pioneers reported that in spite of concerted efforts from government, the WHO and the COME team, the initiative failed to be implemented due to lack of an active needs assessment at the outset before actual implementation that could prevent later stop-gap modifications, poor institutional preparedness, absence of commitment to change on part of administrative heads and poor communication amongst all stakeholders leading to absence of faculty buy-in and student involvement.⁷

Higher Education Commission (HEC) of Pakistan mandates research publications for all academics for appointments and to climb the academic hierarchy through promotions.^{9,10} There is no doubt that HEC issued this directive in 2002 in good faith and its implementation was meant to

motivate the higher academia to perform original research in their respective fields. Unfortunately, it led to some very serious repercussions adversely affecting quality of our medical academia, such as: plagiarism, publishing in non-indexed, sub-standard journals,¹⁰ unfair authorship allocations, refusals to share public data, undocumented use of patient information and expense to collect data, unacknowledged use of junior doctors and undergraduate students to contribute, and sometimes, even write up the entire paper. These are just a few problems out of a long list, that were seen as a result of the race-to-publish for hierarchical promotions.

Pakistan Medical & Dental Council (PM&DC) issued its first recommendation about undergraduate medical research in 2010.¹¹ Pages 50, 52 and 82 of the PM&DC MBBS Curriculum contained around ten small points addressing basic epidemiology, demography and bioethics; there have been no revisions, till date. Additionally, these points come without any pre-set standards for measuring impact of implementation. There is no allocation of exam content or scores towards medical research in any undergraduate curriculum, PM&DC or otherwise. If PM&DC gave concrete steps for measuring research output of medical colleges, research would be taught better. Unfortunately, PM&DC does not even recognize, “Medical Research” as a specialty for medical post graduates in its register of recognized specialties.¹²

In view of above background, one would expect Undergraduate Medical Research (UMR) to be a lost cause in Pakistan. Surprisingly No! The Aga Khan University Medical College in Karachi tops the list of institutions known for inculcating medical research in their undergraduate curriculum throughout five years. Department of UMR in Peshawar Medical College is ten years old, this year. Their annual conference is a vibrant and well known platform for

undergraduate medical students from across the country to present their research projects and participate in research oriented competitions. Rehman Medical College, Peshawar, commissioned an active Department of Medical Research (DMR) in 2010.^{13,14} They also became pioneers in undergraduate publications by starting a Journal of Medical Students (J Med Stud., www.jms.rmi.edu.pk) at institutional level.¹⁵ Several other medical colleges in the country have established research departments for undergraduates. Journal of Pakistan Medical Students (JPMS) was published from Dow University of Health Sciences. Unfortunately, according to the Directory of Open Access Journals (DOAJ), they ceased publication in 2013.¹⁶

It is not hard to deduct from failure of COME implementation that curricular reforms need to be planned and implemented with extra precaution and precision in a country like ours, where firstly, academic hierarchies not only exist, but are very strong and inhibitory to any innovation.⁷ Most Heads of Departments in present day medical colleges were appointed more than twenty years ago. It is imperative that they understand the concept of “Decentralization of health systems”. Today, enhanced local autonomy in healthcare education and services has led to a very different job description for “Heads of Departments”, based on versatility of leadership.¹⁷ Health organizations, as well as academia, have become more horizontal and less hierarchical.¹⁷

Secondly, the role of Institutional Review Boards (IRBs) needs to be addressed and audited meticulously at the national level. Pakistan Health Research Council (PHRC) constituted the National Bioethics Committee (NBC) which was approved by Ministry of Health of Pakistan in 2004.¹⁸ NBC was directed to address bioethical issue in health services delivery, health research, health education and medical journalism in

Pakistan. NBC was to be the “umbrella body” for other IRBs and similar bodies, country wide.¹⁸ NBC developed local guidelines for reviewing research projects after one year of its formation; however, NBC’s role as an umbrella body remains disappointing.¹⁸ Recently, institutions have employed senior academicians holding degrees in Bioethics as IRB members. Unfortunately, majority of IRB members in Pakistani institutions remain without any formal training in Bioethics.¹⁹ This is the state of IRBs dealing with overall institutional research. Undergraduate research does not have any documented channels in Pakistan that are dedicated to reviewing research proposals exclusively from undergraduate students.

Pressures such as the well known “Publish-or-Perish” of senior faculty members, conflict of interest within IRB leadership and inconsistent standards of acceptance or rejection undermine the reliability of entire process. Institutional leadership, itself contributes to some of the most serious threats to transparency and unbiased functioning of these boards.²⁰

Undergraduate medical research is definitely a promising, bright new horizon in the current state of affairs in Pakistani medical education. Every step must be taken by its proponents to help the existing body of medical students in visualizing and engaging in the vast arena of new medical discoveries.

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