IFMSA Policy Proposal
Access to Research and Research Education

Proposed by Team of Officials
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Policy Statement

Introduction

Research provides strategies aimed at improving quality health care and promoting equity. The importance of research to the advancement of health care and the achievement of Universal Health Coverage (UHC) and Sustainable Development Goals (SDGs) indicates the obligation of including Research Education in the medical curriculum. In 2018, IFMSA launched a global survey to assess the exposure of medical students worldwide to Research Education and research opportunities and their satisfaction with research in their medical curriculum. The study showed that less than 20% of the participants agree that Research Education is sufficiently addressed in their medical curricula.

IFMSA position

The International Federation of Medical Students' Associations (IFMSA) perceives research as one of the cornerstones of society, science, and health evolution. The IFMSA affirms that medical students everywhere should have access to research and research education during their undergraduate studies. These should include evidence-based medicine, understanding and being able to employ research methodologies, the capacity to read and interpret research findings and scientific papers, and developing their critical thinking and academic writing skills as future health professionals. The IFMSA also affirms that research with minimal needed resources should be included in curricula worldwide.

Call to Action

Therefore, the IFMSA calls on:

- Governments, Health Ministries and other relevant Ministries to:
    - Allocate sufficient funds to national health research systems tackling global and public health problems;
    - Establish a research-based evaluation system measuring the impact and efficacy of national health strategies;
    - Implement research outcomes in the health policy and decision-making processes;
    - Support educational institutions to incorporate Research Education into their curricula.

- The World Health Organization (WHO) and Civil Society to:
    - Set research priorities and coordinate global efforts to accelerate research;
    - Promote Open Access platforms to enable research results dissemination;
    - Develop platforms and events for dialogue, communication, and sharing of outcomes of research projects between researchers.

- Medical Schools and Academia to:
    - Incorporate a framework on essential research competencies in their medical curricula;
    - Create opportunities for all medical students to get involved in medical research;
    - Provide all medical students with the opportunity to undertake research projects, offering the necessary support (including, but not limited to financial support);
    - Support and Promote student-led initiatives around research with other researchers and institutions;

- Offer the necessary research education and resources for medical students to be confident in taking part in research projects;
- Ensure free subscriptions in medical journals for medical students;
- Recognize IFMSA Research Exchanges as part of the medical curriculum;
- Support IFMSA Research Exchanges with both human and logistical resources;
- Take an active role in implementing and promoting open access and open education.

- Research Institutes and Journal Editors to:
  - Make their databases accessible without paywalls;
  - Give preference to publishing in Open Access Journals;
  - Promote and provide learning opportunities to students, such as recruiting graduate students to perform technical analysis or copyediting.

- National Member Organizations to:
  - Implement and develop Research Exchange Programs accessible to all medical students;
  - Take an active role in implementing and promoting outcome-based capacity building initiatives between the Standing Committee on Research Exchange (SCORE) and the Standing Committee on Medical Education (SCOME);
  - Advocate for the inclusion of evidence-based medicine in all the courses of medical curricula and the development of competencies for evidence-based practice (EBP);
  - Promote meaningful student involvement in research initiatives such as, but not limited to, projects, committees, and academic opportunities;
  - Create educational experiences that meet students' needs around research and evidence-based medicine;
  - Actively support SCORE initiatives such as, but not limited to, campaigns, research camps, exchanges, and its development in less-developed research contexts.

- Medical students and Student Organizations to:
  - Advocate for the inclusion of Research and EBM in the medical curricula;
  - Collaborate with institutions, research centers, and other stakeholders to build the capacity of healthcare students;
  - Promote student-led initiatives around research with other researchers and institutions;
  - Take an active role in implementing and promoting open access and open education research resources;
  - Create open education resources with the relevant stakeholders for less-developed research contexts.

Position Paper

Background information

Biomedical Research is crucial for the future of medicine as the insights provided promise today to lessen the impact of the most significant health problems. The positive effects of research on quality and expectancy of life have made it an essential tool in humanity's development all around the globe. As evidenced by the COVID-19 pandemic, the health research system has a vital role in controlling and managing any widespread disease. [1]

Increased research exposure and training in medical curricula have a positive impact on a student's professional pathway, their evolving practice, and, most importantly, on the health of the patients and communities they serve. [2][3] Research-active healthcare professionals can provide better care and achieve better patient outcomes, [4] highlighting the potentially high importance of investment of time in research training for medical students in building a healthier society in the long term.

Medical schools and institutions worldwide have been suffering from a dearth of research-based opportunities and mentorship. Barriers to Access to Research and Research Education have been under discussion for many years, particularly in low-income countries. When it comes to access to research, an enormous chasm has been observed between the people doing research and possibly even publishing it further down the road representing a relatively homogenous population. It is crucial to keep in mind that conducting research and publishing means two different feats: the current costs of publishing and all research being done, let alone published. This is because the publishing of conducted research is not guaranteed due to the current expenses of publishing scientific articles posing a threat to junior researchers trying to establish themselves in their field.

With some developments occurring in the last decade (e.g., the open access (OA) movement), there is a worldwide consensus that these difficulties persist widely, mainly because paywalls limit access to approximately 75% of scholarly documents. [5] These are walls that health professionals face and struggle with every day, as well as students in the health sciences and related fields, resulting in discouragement and distancing from research in part due to financial impossibilities.

Discussion

Barriers and Struggles Students face to get involved in Medical Research

After consulting multiple studies that were conducted in Lebanon [6], the UK [7], Saudi Arabia [8,9], Kuwait[9], Bahrain [9], Pakistan [10], and Nepal [11] to determine the barriers medical students face to get involved in research, the main obstacles identified were the lack of mentoring and guidance, the lack of knowledge and expertise and the lack of time. The other barriers noted are inadequate funding, training, skill, and limited access to databases. A few participants reported a lack of interest and motivation in some of these studies, while others did not report a lack of motivation at all.

Medical students also believe that research would help them better understand their subjects, offer evidence-based health care for patients [11], enhance their critical thinking and knowledge, and improve their career prospects [6,12].

Many medical students claim they have a positive attitude towards research and are interested in it [8,9,12,13]. However, the barriers they stumble into during the process might prevent them from pursuing medical research and acquiring the knowledge, skills, and opportunities they and their

medical schools can benefit from, namely an increase in the publication output of their medical school and more skillful graduate doctors [14].

Open Access, Open Data, and Open Education

The 21st century brought many new technologies. However, the research system has not incorporated those innovations and still operates in an outdated model. In its vast majority, research data and outcomes are kept behind technical, legal, and financial walls, inherited from the print-based model. The restricted access to research and data impairs the progress of discoveries worldwide as information is not available to everyone.

According to the Scholarly Publishing and Academic Resources Coalition (SPARC), "Open Access is the free, immediate, online availability of research articles combined with the rights to use these articles fully in the digital environment."[15]

With the constant growth in knowledge also comes an increased wish for access to it and a willingness to educate oneself on new advancements. Unfortunately, it is challenging to fulfill this need since the educational resources (just as the research resources) are restricted to those who can afford to pay for them, increasing the social abyss between countries and researchers. Instead of using technology to make education more accessible, it is often used to raise barriers and profit.

What is IFMSA doing to promote Access to Research and Research Education?

IFMSA, thanks to its Standing Committee on Research Exchange, offers over 3000 research projects to provide over 8000 medical students worldwide with the opportunity to participate in the IFMSA research exchange program. In this program, students can learn the basic principles of medical research such as literature studies, data collection, scientific writing, lab work, statistics, and ethical aspects related to medical sciences. It is essential to mention that all exchanges are initiated and coordinated entirely by medical student volunteers. IFMSA further developed its Research Exchange Program by releasing three Educational Activities Toolkits on the Basic Principles of Medical Research, Research Methodology and Study Designs and Critical Appraisal, and made them openly accessible for its members.

Furthermore, IFMSA has made recent efforts to share educational tools surrounding research with its members and medical students worldwide through a database of useful online courses, open-source textbooks, and educational videos.

On top of that, IFMSA previously released two Policy Documents on Access to Research and Research Education and Open Science to express its stance on these topics and advocate for openness across all published research outputs and Access to Research and quality Research Education. Following the same principle, IFMSA launches a Research Awareness Campaign every year to encourage medical students to get involved in research and celebrates Open Access Week to advocate for Access to Research and Research Education and their importance.

ARRE, Universal Health Coverage (UHC), and global health

The world is striving towards achieving universal access to services needed by all people when and where they are through UHC and its relevant SDGs. Over the past 19 years, publications tackling UHC have increased, showing the growing global interest in working strategically towards health equity [22].

Research has proved to be essential for the implementation of UHC. While scientific research is most known as a generator of information, it can be molded to fit additional roles serving health care and global health. New forms of research have evolved, such as global health research, implementation research, and health policies and systems Research (HPSR). Each of these guides health problem-solving and policy-making processes [16,17,20]. The medical world is governed by the evidence-based approach making research crucial for healthcare services and innovations [20]. Not only does research evaluate and measure the impact of health practices, but it also helps to answer the challenges UHC implementers and countries' leaders face, such as the variability of health outcomes between communities and the search for the most efficient plan to adapt according to their regions [16,17]. Research simply offers an "interdisciplinary approach to global health problems", arming policymakers with relevant knowledge and, at the same time, reviewing their outcome indicators and holding them accountable [17,20].

Even though research is key to reaching UHC and improving global health, it still lacks accessibility. In 1982, a study was published in the Annals of Virology, mentioning the risk of Liberia's Ebola endemic and warning the world of a "potential outbreak". However, since this journal was subscription-based, the limited research access led to the surprising and unpredicted 2014 epidemic. [21] 69% of global health research is not available without a subscription [21] despite the advantages of Open Access, such as increased knowledge dissemination, citation rates, and improved health outcomes. The majority of health studies come from middle-high income countries. [22] This highlights how ARRE is one of the vital answers to the obstacles facing UHC work.

Research during the COVID-19 pandemic

Over the past few decades, the number of infectious diseases outbreaks has increased. [23] The outbreak of the COVID-19 pandemic had a considerable impact on research, especially clinical research. Clinical trials had to adapt and become more flexible for them to continue under the COVID-19 restraints. Clinical trials initiated during the pandemic had to be time-efficient and flexible due to the high contagiousness of the virus, the significant number of reported deaths, and the time constraints needed to perform high-quality clinical trials with adequate sample sizes. [24] Collaboration between different countries and implementation of innovative clinical trial designs was essential to complete such initiatives during the current pandemic. Conducting research during health emergency situations is an ethical responsibility for researchers, institutions, and countries. In some countries, ethics reviews can take months; therefore, in emergencies, institutions must accelerate review processes of research protocols while maintaining quality. [25] It is important to note that most medical research-allocated resources and funding happened during the disease outbreak. Unfortunately, lack of funding after the outbreak has led to the disruption of many clinical trials assessing preventative, diagnostic, and therapeutic strategies.[26] One of the most critical barriers during the COVID-19 pandemic is the patients' understandable anxiety and hesitancy towards enrolling in clinical trials, as well as participants and personnel having to quarantine after testing positive, leading to the disruption of the trial.[27] Moreover, societal benefits may no longer be available for trial participants due to COVID-19 restrictions.

The World Health Organization developed the WHO Research Road Map, a global imperative for the research community to maintain a high-level discussion platform that enables consensus on strategic directions, nurtures scientific collaborations, and supports optimal and rapid research to address crucial gaps without duplication of efforts. [8] Analysis of research papers with keywords "Coronavirus" over the last 20 years shows that there has been an increase in the COVID-related research after major Coronavirus spread like SARS, MERS, etc. Most of the research focuses on virology, immunology, and epidemiology. However, there is little research on linking biological hazards to disaster response, covering a holistic response approach. Therefore, new research needs

to focus on different aspects of the pandemic response, recovery, and long-term development, including information, risk communication, citizen behavior are areas that need additional research.[28]

Research and evidence-based decision making

Evidence-based decision-making constitutes a practice that allows decisions about a practice or policy to be supported and guided by the best available research without neglecting to consider the empirical evidence of the processes and the context in which they are to be applied. [29] In the medical sciences, the use of evidence translates into evidence-based medicine that seeks to provide optimal care to the individual patient by integrating the best current evidence, clinical experience, and patient values and needs. One of the primary examples occurs in public health, which seeks to develop, implement, and evaluate effective public health programs and policies based on the evidence available from different disciplines. [30]

According to the CanMEDS competency framework for a medical expert, physicians should identify evidence relevant to their patient's needs, critically appraise it, and apply it in their practice and scholarly activities. [31] This is important for recognizing gaps in knowledge and dealing with the uncertainty of limited evidence. This requires skills such as the systematic search for information and tools to critically evaluate the integrity, reliability, and applicability of health-related research and literature. Other documents highlight core competencies for evidence-based practice, starting from the rationale for EBP, formulation of research questions, development of research strategies, critiquing and interpreting, application of evidence, and finally, evaluation of the whole process. [32][33]

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