



European Medical Students' Association

Association Européenne des Étudiants en Médecine

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Research in Medical Education

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The European Medical Students' Association (EMSA) represents medical students across Europe. We envision a healthy and solidary Europe in which medical students actively promote health. EMSA empowers medical students to advocate health in all policies, excellence in medical research, interprofessional healthcare education and the protection of human rights across Europe.

EMSA. HEALTH. EUROPE. TOGETHER.

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Problem statement.

Medical research is the backbone of evidence-based healthcare, yet its incorporation in undergraduate medical education is inconsistent worldwide. Despite the widespread benefits of research exposure – such as critical thinking, scientific literacy, and problem-solving skills – a significant proportion of medical students graduate with minimal or no formal research training. For instance, 25% of medical schools in Europe do not include research-related subjects in their curriculum, and the majority of the remaining institutions lack formalized means of scientific education (Hren et al., 2013). Furthermore, while 73.6% of medical students are aware of the importance of conducting research work during their studies, 62.6% report that their instructors do not encourage them to engage in such pursuits (Guillén-Grima et al., 2023).

This educational gap not only limits the ability of future physicians to contribute to health innovations but also limits physician-scientists who can bridge the gap between scientific discovery and clinical practice (Stockfelt, Karlsson & Finizia, 2016). Although economic factors may be at play, the inability of proper and effective mentoring programs worsens this scenario and becomes a necessary barrier to establishing a research-based strategy in the medical profession.

In support of this, numerous research studies have established that students exposed to systematic research programs during their undergraduate studies have a higher likelihood of continued academic activity and research productivity (Amgad et al., 2015). Training in research also helps in acquiring required skills such as hypothesis formulation, data analysis, and scientific writing – skills critical for both clinical and scholarly practice (Laidlaw et al., 2012). Moreover, medical students who engaged in research while still in medical school are also more likely to pursue evidence-based practice in their clinical practice (Ahmed et al., 2023; Mokhtari et al., 2024).

These results are reinforced by University's of Malta study, which showed that engagement in research projects improved students' understanding of research approaches and increased their interest in research careers. Interestingly, mentoring was a deciding factor in more than 90% of students reporting a positive impact of guidance by faculty members. At the same time, online research courses have also proved to be effective in educating students in advance for research knowledge and confidence, in favor of incorporating digital tools in medical research training (Cuschieri et al., 2023).

Recognizing the pivotal place of research in the development of medicine and healthcare, several international organizations promote its integration into the curriculum of undergraduate medical education. The World Medical Association (WMA), for instance, recommends educating students in

basic research concepts and illustrating the clinical importance of research, while exposing them to the opportunities of conducting research (WMA, 2020).

Similarly, the World Federation for Medical Education (WFME) in its 2015 Global Standards for Quality Improvement in Medical Education puts special emphasis on establishing research literacy as among the key results of medical education. It recommends the offering of structured opportunities for students to engage with scholarly work, understand research techniques and ethics, and critically evaluate scientific literature (WFME, 2015). These recommendations foster a culture of inquiry and innovation, the hallmark of modern medical practice.

The same is also supported by the International Association for Health Professions Education (AMEE). According to its 2012 guidelines, it recommends the incorporation of fundamental research skills – data interpretation, scientific writing, and project design – within the basics of medical curricula. Further, AMEE fosters experiential education in research through curricular research tracks or elective courses with the aim of equipping students with the ability to implement scientific evidence into practice and forging a future generation of clinician-scientists (Laidlaw et al., 2012).

Despite the general consensus of the importance of early introduction to research, there are still several obstacles that act as deterrents to students from engaging. These include a shortage of time, inadequate training, limited opportunity, and suboptimal mentorship (El Achi et al., 2020). Other results from the European Medical Students' Association (EMSA), based on surveys conducted in 2014 and 2021, reveal other challenges such as financial constraint, absence of faculty support, and fewer interactions with open educational resources (EMSA, 2021). Collectively, these difficulties undo efforts to develop a culture of research involvement for undergraduate medical education.

Our view. Aim

EMSA recognizes the need for increased accessibility and integration of research education in medical curricula. Research participation fosters analytical thinking, evidence-based practice, and academic curiosity, ultimately improving patient care and advancing medical science. However, without proper support mechanisms, the full potential of medical research education remains untapped.

Addressing these challenges requires a structured and sustainable approach that makes research education more accessible, practical, and integrated into medical curricula. This policy paper aims to

reaffirm our commitment to strengthening research education by addressing key barriers, particularly the lack of mentorship, training, and institutional support.

By fostering a culture that prioritizes research from the early stages of medical training, we seek to empower future physicians with the skills and opportunities necessary to advance medical science.

Recommendations

EMSA urges European Institutions to;

- Promote initiatives that can successfully implement research education strategies into medical curricula and educational systems;
- Develop International Grant and Scholarship Programmes for students motivated to do research as a way to decrease financial barriers;
- Promote people's access to Grants for research in developing and non-developed countries.

EMSA urges Medical Education Associations to;

- Conduct a European study to identify key barriers to student research participation,
- Develop credible and online accessible databases to connect students directly with research opportunities,
- Expand scholarship and grant programs for student-led research initiatives,
- Increase funding allocation for academic institutions to strengthen research opportunities,
- Develop AI-based research simulations and other digital tools that provide students with research ideas, inform them about the current literature, and create a roadmap for projects.

EMSA urges National Governments, Ministries of Health and other relevant ministries to;

- Increase the budget allocation for Research Centers associated with Higher Education Institutions, to boost their attractiveness and scientific development,
- Establish a system of government-appointed, online mentors for students who are motivated to do research but have difficulty finding a physically-based mentor,
- Ensure the existence of an Organizational Unit in each Medical School to promote the integration of students into research projects, centralizing information and providing targeted support for their needs.

EMSA urges Medical Schools & Universities to;

- Establish dedicated research units to centralize information and support student engagement,
- Integrate basic research concepts and skills into the Mandatory Curriculum and promote the creation of electives that enhance interest in and/or contact with research,
- Provide free access to scientific databases, research tools, statistical analysis software, and other essential tools for research practice,
- Develop credit-based research internships and facilitate national and international research mobility programs,
- Ensure faculty training in mentorship to guide students effectively,
- To create incentives for research facilities to take on inexperienced students, by offering additional funding.

EMSA urges Medical Associations & Professional Bodies to;

- Establish a framework outlining essential research skills for medical students,
- Recognize and accredit student research contributions within professional development programs,
- Advocate for institutional policies that prioritize student involvement in medical research,
- Organise internships, with shadowing experiences, for students to know about a researcher's day-to-day and to build bridges between scientists and students,
- Organise career summits that bring together scientists who started research during their student years and university students who are just starting out on this journey.

Definitions

AMEE: International Association for Health Professions Education

EMSA: European Medical Students' Association

WFME: World Federation for Medical Education

WMA: World Medical Association

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