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CONDUCTING RESEARCH IN MEDICINE

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Abstract: Research is the foundation of medicine, and advances in research play a crucial role in improving the quality of health care provided to the general population. In general, the process of developing research skills by medical institute students can be accomplished by combining research programs within the curriculum or by encouraging specific activities or by handing out materials throughout the course depending on a clearly defined plan. Like any other competent person, medical students should have criteria to assess their research skills to determine their qualifications. In conclusion, medical students should be given a sufficient number of study opportunities to develop their research skills during their undergraduate years. However, this requires that research-related competencies be included in the curriculum and that a clear broad framework focused on research-related attributes be developed.

Key words: Assessment, curriculum, medical students, research.

Research is the foundation of medicine, and advancements in the field of research play a crucial role in improving the quality of medical care provided to the general population. Medical institutions are entrusted with the important task of training future physicians who must be sufficiently qualified to meet society's healthcare needs.To fulfill this role of social responsibility, interventions by administrators and faculty members are necessary during the training of medical students to expose them to and engage them in patient care and research. However, given that medical curricula are already densely packed, ensuring that students at all levels of education receive adequate learning opportunities to develop research skills remains a significant challenge for stakeholders.

Strategies for Developing Research Skills In general, the process of developing research capabilities among medical university students can be implemented by integrating research programs within the curriculum, encouraging specific activities, or distributing course materials according to a well-defined plan.

At the curriculum level, adopting a student-centered approach—such as project-based learning, case-based learning, and problem-based learning—significantly motivates students to enhance their research abilities. A combination of traditional approaches and student-centered methods is highly effective, as it helps students acquire critical thinking, communication, and teamwork skills.

Another curriculum-oriented approach involves planning and implementing integrated teaching, as this enables medical students to connect theoretical knowledge with practical applications. A

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holistic curriculum that incorporates scenario-based learning plays a crucial role in acquiring and improving research skills.The Importance of Research in Medical Education Furthermore, raising awareness among medical students about the significance of evidence-based medicine and encouraging them to engage in research helps them develop critical thinking skills. It also enhances their ability to search for literature, strengthens clinical reasoning, and improves teamwork skills. Additionally, students can explore situational and experiential learning methods to develop research-related skills during their studies. It is always recommended that medical institutions integrate ongoing research activities into education to benefit students.

In German medical institutions, the Department of Public Health has dedicated statistical staff. This is highly beneficial for medical students interested in conducting research.

These statistical specialists not only increase medical students' awareness of various aspects of biostatistics (within the framework of their curriculum requirements) but also help them understand the significance of sample size in research, methods for calculating samples, data entry techniques, and general statistical tests used for analysis. Moreover, we cannot overlook the role of student-organized conferences in medical education.

These conferences provide students from different medical institutions the opportunity to participate, explore various aspects of research, and stay updated on the latest developments. Despite being newly established, the Fergana Institute of Public Health organized an International Science Olympiad on May 20, 2021. This event saw participation from medical students across the country, as well as from Russian medical universities and neighboring countries, including Kyrgyzstan and Kazakhstan. The International Science Olympiad was conducted entirely in English, offering a unique opportunity for academic growth. The organization of international conferences is also essential, as it helps students enhance their understanding of scientific research and fosters deeper exploration and interest in the field. Participation in Scientific Projects An ideal approach to fostering research skills is to encourage medical students to independently conduct a scientific project at the postgraduate level.

In fact, research projects can be incorporated into the core curriculum, ensuring that all students are motivated to engage in them. Another option is to establish research faculties within medical institutions, allowing students to learn the fundamentals of research and carry out independent projects. It is crucial for students to gain knowledge about scientific research. In many foreign countries, undergraduate research projects are widely recognized and supported, with students receiving both financial assistance and academic supervision from faculty members.

Implementation of Research Projects in Medical Institutions In medical institutions, all students sent for practical training in urban and rural centers should be required to complete a short research project. In this process, student groups will define a research topic, review relevant literature, develop a questionnaire under the supervision of the responsible faculty at the center, participate in data collection and analysis, and finally present their findings. At the same time, these research projects should be integrated with all levels of scientific research and related events should be organized accordingly. This will provide students with a significant opportunity

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to enhance their knowledge and potential. A well-structured plan for these activities must be developed and properly organized.

The successful implementation of such initiatives requires the dedicated efforts of the faculty members of medical institutions. Evaluation of Research Skills Like any other professional field, there must be an established criterion for assessing the research skills of medical students to determine their competencies. This assessment can be conducted through maintaining a research portfolio (which includes documentation of learning, evidence of studies, and self-reflection on learning), during an objectively structured clinical examination (OSCE), through peer review of critical evaluations, or even as a summative assessment. Although summative evaluation of research skills may seem challenging, educators can assess students by framing research questions within problem-based learning scenarios (e.g., testing their ability to interpret data). Additionally, literature review sessions related to research topics should be incorporated into practical training.

Conclusion

Providing medical students with sufficient learning opportunities to develop research skills during their academic years is a necessity of modern education. However, for this to be effectively implemented, research-related competencies must be integrated into the curriculum, and a well-defined framework focused on research attributes must be developed.

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