

Developing Research Skills in Medical Students- Experience from Research Methodology Workshops for Indian Medical Graduates

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DOI: 10.55489/njcm.151120244743

Keywords: Research skills, research workshops, India, Medical students

ARTICLE INFO

Financial Support: None declared

Conflict of Interest: None declared

Received: 30-09-2024, **Accepted:** 22-10-2024, **Published:** 01-11-2024

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Sir,

Research plays an essential role in medical learning, evidence-based medicine, scientific innovations and clinical decision-making.¹ Need of research in more than a billion populated country and poor research outcomes from India are two sides of coin. With advancement in technology, demographic and epidemiological transitions of diseases, pandemic reported, there are big spaces to be filled by Indian researchers in conduct of research for better health services.^{2,3,4} So, it is crucial to instil and encourage the growth of logical thinking in medical students from the outset of their careers, through biomedical research training.^{1,4} In India, the ICMR initiated the STS program in the year 1979 for undergraduate medical students to promote research in MBBS students.⁵ Recently, Graduate medical education regulations, 2023 (GMER 2023) introduced Integrative medical research as a subject and states that Indian medical graduate should pursue research to learn evidence, learn basic, clinical and translational research and apply principles of bioethics.⁶

However, in many developing nations including India, research is not regarded an integral element of the medical curriculum and students have unfavourable attitude for it. Reasons for negative attitude and

poor research at MBBS level includes; lack of awareness, insufficient training, time constraints, indifference of mentors or supervisors, no or very few student conferences and research workshops, lack of funding and opportunities.^{7,8,9} Thus, the need of the hour is for research workshops for students to adapt the present conventional training curriculum to the realities of evidence-based scientific practice. This paper explains the nuances of organization and outcomes of research methodology (RM) workshops in medical college for undergraduate students. We conducted RM workshops with the objectives to raise awareness about importance of research, promote the interest and aptitude of research in Indian Medical Graduate (IMG) and to provide training to understand the basics of research methodology.

Two-days research methodology workshop was organized in our medical college for undergraduate's students for two consecutive years (2022,2023). Two days program was conducted with sessions like selection of topics for any research work, research study types, sample size, plagiarism, ethical considerations and why to publish. Each topic of workshop was designed to focus on how to draft good quality research proposal for different purposes with emphasis on undergraduate students. Exercises (Google forms shared in group) were given to students after

How to cite this article: Singh G, Srivastava D, Singh AP. Developing Research Skills in Medical Students- Experience from Research Methodology Workshops for Indian Medical Graduates. Natl J Community Med 2024;15(11):998-999. DOI: 10.55489/njcm.151120244743

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www.njcmindia.com | pISSN: 0976-3325 | eISSN: 2229-6816 | Published by Medsci Publications

each session, interactive sessions, question & answer (Q&A) sessions were held and feedback was taken from students.

All the students who participated submitted research question after first day of workshops. upon conclusion of the workshop, WhatsApp group link was shared with all students and faculty members (mentor-mentee group) with a message that 'those who are interested to submit STS-ICMR proposal kindly join group'. The WhatsApp group was then created to add interested students and faculty members to facilitate all timeline for submission of STS- projects, discussion from topic of proposals to submission and problem solving of various queries. From the formation of WhatsApp group to submission of proposals, all information was shared in group, each step reinforced and supervised.

Presentation of proposals was done with all mentors and mentees before submission; another skill which students acquired during drafting of their proposals. This exercise was helpful in improvement of proposals and detailed discussion on all aspects of proposals. Three STS projects (Reference ID-2023-09558, 2023-02999, 2023-01252) were selected from department of community medicine and microbiology in 2023. For selected proposals, another group of mentors & mentee (STS-submission group) was made to facilitate final report submission. One STS report got accepted for grant (Ref ID -2023-01252). Students also attended various workshop and conferences and presented research paper showcasing their knowledge and skills gained from research methodology workshops. (PHASECON 2023, at PGI, Chandigarh, INSIGHT 2023, at AIIMS, New Delhi; MEDSICON 2024, at VMMC, New Delhi. One student recently published paper under guidance of her mentor in NMC indexed paper.¹⁰

Research in medical education is essential in today's medical environment for fostering critical thinking, self-directed learning, professional decision making, critical evaluation of medical literature, and the acquisition of analytical skills necessary for health care providers to provide overall patient care. This unique study highlights the need of research methodology workshops, its organization and outcomes. The one of objective of workshop on research methodology for undergraduate was to raise awareness about importance of research, promote the interest and aptitude of research in every Indian Medical Graduate (IMG). The research methodology work-

shops conducted for MBBS students concluded with significant mobilization of students, increase in knowledge and skills development which reflected in submission of good quality proposals, presenting papers in conferences and writing papers for publication. It is recommended that research activities be made integral to undergraduate curricula and student participation in mandated. Initiatives are being done to encourage medical students to pursue careers in research in order to address the shortage of physician-scientists in developing nations.

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