



## Original Research Article

## Perception among undergraduate medical students towards health research methodology & publications in a tertiary care hospital of Assam

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## ABSTRACT

**Introduction:** Research experience gained by medical students during their under graduate tenure plays a significant role in their future endeavours in the field of medical research. The aim of the present study was to assess the level of knowledge about attitudes regarding biomedical health research and publications among medical students.

**Materials and Methods:** A cross-sectional descriptive study was conducted and randomly selected among 200 undergraduate medical college students of Tezpur Medical College, Tezpur, Assam in 2018 to assess the knowledge about their attitudes on health research and scientific publications. A pretest preformed was employed to assess the knowledge and attitudes of the students. Informed consent was duly taken. The data thus obtained was then analyzed using MS Excel.

**Results:** Among the 200 study participants, only 70(35%) students feel confident in interpreting and writing a research paper, and 135(67.5%) students feel lack of their knowledge on research methodology and is the cause of less publication & research, while 102(51%) and 120(60%) says lack of senior's knowledge and mentors respectability is the cause of less publication. Interestingly only 5(2.5%) participants had published in journals and 195(97.5%) says that they were never written any scientific paper. Majority of students 174(87%) had not participated in a research project (apart from mandatory academic projects). A good number students do feel that lack of funds and facilities, and mentorship are important causes of no publication and research in medical colleges.

**Conclusion:** Medical colleges should emphasize more on health research among the undergraduate students. There is a need to reform the medical curriculum with more weightage towards research methodology awareness, workshops and planning in order to improve the situation in the field of medical education and research.

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### 1. Introduction

Health Research is vital for the progress of modern medicine and has created an ever evolving medical world for improving global health and health equity, as well as economic development. Research at an earlier stage enables

students' early exposure to ethics, which is an integral part of medical research and practice. It also allows the student to think in a broader and systematic way to enhance their scientific and statistical knowledge.<sup>1</sup>

Medical students must be encouraged to make the most of research training and skills<sup>2</sup> opportunities in medical programs and beyond, take time out of their busy curriculum, not only for their professional benefits, but

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in contributing to the health of their patients and to the community at large they serve.<sup>3-5</sup> The growing evidence on the importance of the involvement of students in research cannot be over emphasized.<sup>6</sup> The health research is thus an integral part of medical education.

Research skills development and the medical healthcare are complementary to each other. That's the reason why the research experience is lacking during conventional undergraduate medical education programs. It's therefore necessary that research methodology be integrated in the core medical curriculum.<sup>7</sup>

Literature says that postgraduate research initiatives and future career achievements in medicine are closely associated with research experience gained during medical school.<sup>8</sup> The development of research capacity is imperative at the individual and institutional levels.<sup>9</sup> The void of physician-scientists in research in developing countries should be filled by recruitment of more and more medical students through motivation.<sup>10</sup>

In this study, it has been aimed to assess undergraduate medical students' knowledge and attitude level in principles of research methodology and scientific publications.

## 2. Materials and Methods

A descriptive cross-sectional study was conducted. The sample size of study was taken as 200 and was randomly selected, from the undergraduate MBBS students of Tezpur Medical College and Hospital, Tezpur, Assam in the year 2018. To assess the knowledge about attitudes on health research and scientific publications, participants were asked to fill a pre-tested structured questionnaire based on DebBarma et al,<sup>7</sup> modified following thorough peer review and discussion. The questionnaire consists of two part namely student's brief demographic profile details including age, gender and year of study and the second part includes 10 closed questions to assess student's knowledge and attitudes towards Health Research. Informed consent was taken. The data thus obtained was analysed using MS Excel. Required ethical clearance was taken from the institutional ethics committee.

## 3. Result

All the 200 students were responded to the questionnaire; therefore, the response rate of 100% was observed. 110(55%) of participants were female and 90(45%) were male as shown in Table 1 and responses to questionnaire in Table 2.

**Table 1:** Gender-wise distribution of participants.

Sex	Nos of Students	Percentage (%)
Male	90	45%
Female	110	55%
Total	200	100%

Among the 200 study participants, only 70(35%) students feel confident in interpreting and writing a research paper, and 135(67.5%) students feel lack of their knowledge on research methodology and is the cause of less publication & research, while 102(51%) and 120(60%) says lack of senior's knowledge and mentors respectability is the cause of less publication. Interestingly only 5(2.5%) participants had published in journals and 195(97.5%) says that they were never written any scientific paper. Majority of students 174(87%) had not participated in a research project (apart from mandatory academic projects) A good number students do feel that lack of funds and facilities is also a reasonable cause of no publication and research in medical colleges.

## 4. Discussion

Medical students should be enough capable to carry out the Research projects of its own. Our study shows that 70(35%) of undergraduate medical students have low-to-moderate knowledge about principles of biomedical research and publications which is similar to the findings, in a study by Windish et al.<sup>11</sup> was (41.4%) on understandings of medical residents of biostatistics and interpretation. Our study reported poor participations in research projects apart from mandatory academic projects and less scientific publications in peer review journals (3%). Similar findings, was surveyed at medical studies at Malabar Medical College and Hospital, Calicut in the year 2015. They observed that only (31%) students feel confident in interpreting and writing a research paper, but generally lack publications writings.<sup>7</sup> Our study is comparable to the study conducted by Madhavrao at Kulsekharam at Tamil Nadu,<sup>12</sup> and only (7.69%) participants had an experience of publishing scientific journals. Also a survey at Andhra Pradesh reported a low level of knowledge as well as a poor participation of PG students.<sup>13</sup> Similar findings were also observed among undergraduate first-year Croatian medical students,<sup>14</sup> Pakistani medical students,<sup>15</sup> and medical students in South-East Europe.<sup>16</sup>

In our study, more than 50% participants feel that there are many barriers in conducting a research work or in enlisting publications in peer review journals. These are lack of knowledge (67.5%), time, funds (54%), mentors (60%) and well equipped laboratories and instruments (61%). Our study is comparable to the findings of a cross-sectional study conducted among third and fourth year MBBS students at KS Hegde Medical College, Mangalore during August 2014 by Sanjay Kini et al.<sup>17</sup>

The study reports are limited to the one institution that cannot be generalared for the whole population. The study can be served as a pilot study for a larger scale research. These findings should help policy-makers and administration to effect necessary changes so as to encourage more and more students into biomedical

**Table 2:** Participants' responses to questions against knowledge and attitudes towards health research.

Statement	No. of students (%)		
	Yes	No	Undecided
Are you confident in interpreting and writing a research paper?	70(35%)	94(47%)	36(18%)
Have you ever participated in a research project (apart from mandatory academic projects)?	23(11.5%)	174(87%)	3(1.5%)
Have you ever written a scientific paper?	5(2.5%)	195(97.5%)	0(0%)
Lack of mentor is the cause of no publication or lack of research participations?	120(60%)	22(11%)	58(29%)
Do you think UG can plan and conduct a research project and write a scientific paper?	128(64%)	58(29%)	14(7%)
Do you think that lack of facility is the cause of no publication or lack of research participations?	132(66%)	36(18%)	32(16%)
Lack of fund is the root cause of no scientific research or lack of publication?	108 (54%)	69(34.5%)	23(11.5%)
Lack of knowledge of research methodology is the root cause of no publication or lack of research participations?	135(67.5%)	38(19%)	27(13.5%)
No future benefit or privileges from Govt. of doing research and scientific publication is the cause of all?	140(70%)	42(21%)	18(9%)
Lack of knowledge of seniors in research and publication is the cause of demotivation leading to all these problems?	102(51%)	80(40%)	18(9%)

research.

## 5. Conclusion

Medical colleges should emphasize more on health research among the undergraduate students. There is a need to reform the medical curriculum with more weightage towards research methodology awareness, workshops and plannings in order to improve the situation in the field of medical education and research.

## 6. Ethics Considerations

All data were treated with confidentially and the study was conducted in accordance with the Declaration of Helsinki. Required clearance was taken from the institutional ethics committee.

## 7. Conflict of Interest

No conflict of interest.

## 8. Source of Funding

None.

## References

- Shrestha A, Shrestha A. The importance of doing research as a medical student. *Kathmandu Univ Med J.* 2007;5(1):138.
- Jamali A, Fatemeh AA, Hassanpour K, Kamyar MM. Undergraduate Medical Students' Knowledge About Principles of Research Methodology and Impact of Extracurricular Principles of Research Workshops: A Cross-Sectional Study in Tehran University of Medical Sciences. *Thrita Stud J Med Sci.* 2012;1(1):8–12.
- Laidlaw A, Aiton L, Struthers J, Guild S. Developing research skills in medical students: AMEE guide no. 69. *Med Teach.* 2012;34(9):754–71. doi:10.3109/0142159X.2012.704438.
- Lawson PJ, Smith S, Mason MJ, Zyzanski SJ, Stange KC, Werner JJ, et al. Creating a culture of inquiry in family medicine. *Fam Med.* 2014;46(7):515–21.
- Hather GJ, Haynes W, Higdon R, Kolker N, Stewart EA, Arzberger P, et al. The United States of America and scientific research. *PLoS One.* 2010;5(8):12203. doi:10.1371/journal.pone.0012203.
- Solomon SS, Tom SC, Pichert J, Wasserman D, Powers AC. Impact of medical student research in the development of physician-scientists. *J Investig Med.* 2003;51(3):149–56.
- Antara D, Putul M, Thakuria KD. Undergraduate medical students' knowledge about principles of research and publications. *Int J Health Res Medico Leg Prae.* 2018;4(2):93–5. doi:10.31741/ijhrmlp.v4.i2.2018.22.
- Reinders JJ, Kropmans TJB, Cohen-Schotanus J. Extracurricular research experience of medical students and their scientific output after graduation. *Med Educ.* 2005;39(3):237. doi:10.1111/j.1365-2929.2004.02078.x.
- Sadana R, D'Souza C, Hyder AA, Chowdhury AMR. Importance of health research in South Asia. *BMJ.* 2004;328(7443):826–30. doi:10.1136/bmj.328.7443.826.
- Bickel J, Morgan TE. Research opportunities for medical students: an approach to the physician-investigator shortage. *J MedEduc.* 1980;55(7):567–573.
- Windish DM, Huot SJ, Green ML. Medicine residents' understanding of the biostatistics and results in the medical literature. *Jama.* 2007;298(9):1010–1032.
- Madhavrao C, Bai MK, Menon RN, Babu SK, Asir PA. Knowledge attitude and practices towards principles of research among medical postgraduates in a teaching tertiary care centre. *Int J Cur Res Rev.* 2016;8(2):4–9.
- Reddy M. Attitudes and practices of students towards the National Premarital Screening Program of Saudi Arabia. *Indian J Basic Appl Med Res.* 2016;5(3):513–9.

14. Vodopivec I, Vujaklija A, Hrabak M, Lukic IK, Marusic A, Marusic M, et al. Knowledge about and attitude towards science of first-year medical students. *Croat Med J.* 2002;43(1):58–62.
15. Khan H, Khawaja MR, Waheed A, Rauf MA, Fatmi Z. Knowledge and attitudes about health research amongst a group of Pakistani medical students. *BMC Med Educ.* 2006;6(54). doi:10.1186/1472-6920-6-54.
16. Burazeri G, Civljak M, Ilakovac V, Jankovic S, Majica-Kovacevic T, Nedera O, et al. Survey of attitudes and knowledge about science in medical students in southeast Europe. *BMJ.* 2005;331(7510):195–6.
17. Kini S, Muthukumar R, Rakesh G, Maiya N, Krishna K, Kiran NU, et al. Attitudes and perceptions towards research among final year medical students in a private medical college of coastal Karnataka: A cross-sectional study. *J Health Allied Sci NU.* 2017;7(1):7–11. doi:10.1055/s-0040-1708687.

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