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# PERCEPTIONS OF STUDENTS REGARDING RESEARCH WORK DURING MBBS COURSE

Community Medicine

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## ABSTRACT

This cross-sectional descriptive study was conducted using the chain sampling technique on 108 medical students (56 females: 51.85% and 52 males: 48.15%) who were enrolled in the MBBS course in various colleges in the state of Maharashtra. A pre-tested and pre-validated questionnaire was administered via Google forms. The mean age of female participants was 19.95 +/- 1.03 years while that for their male counterparts was 20.19 +/- 1.77 years, without significant gender difference in mean age (Z=0.852; p=0.393) . A significantly higher number of female respondents (Z=3.087; p=0.002) held the view that research work should commence from the first year of the MBBS course. There was highly significant gender difference (Z=6.748; p<0.0001) in the perception that research work during MBBS course will foster deeper understanding of clinical subjects. A significantly higher proportion (Z=2.213; p=0.027) of female respondents opined that senior students should motivate juniors for doing research.

## KEYWORDS

MBBS, Perceptions, Research, Undergraduate

## INTRODUCTION

Historically, there have been many examples where medical students have been successful in research and their achievements can be attributed to encouraging institutional environment and support from their teachers. [1] Most of the medical student researchers belong to the developed world. [2] Jay Mclean was a second-year medical student at John Hopkins University in 1916, when he discovered Heparin. [3] Lorenzo Bellini was a medical student when he published his discovery (1662) of the kidney tubules. [4] Paul Langerhans (1869) discovered the Islets of Langerhans. [1]

The medical education system in India focuses chiefly on producing allopathic doctors, but rarely promotes research activities. [2] The current Bachelor of Medicine and Bachelor of Surgery (MBBS) curriculum does not promote research aptitude in under-graduates and medical students' research is considered as an "extra-curricular" activity by most of the medical college authorities. [2, 5]

The involvement of medical students is also dependent on funding, autonomy, and collaborations in basic research, which varies widely between government and private medical colleges. [6] In 2007, the Department of Health Research estimated that about 96% of the research publications in India originated from only nine medical colleges. [7] 57 % of the medical colleges in India did not have a single publication between 2005 and 2014. [8]

Researchers [9, 10] have pointed out that senior-most author is usually the first author in research publications due to their premium position and that the practice of denying credit and first authorship in research publications discourages the medical students and thus their interest in research starts declining. Frequently, the research contribution of junior researchers, such as, medical students, is frequently the highest. [9, 10]

By and large, there are no formal channels for medical students in India to become physician-scientists or academicians. [6] The Indian Council of Medical Research (ICMR) launched the Short Term Studentship (STS) program in 1979 to promote interest and aptitude for research among medical undergraduates and to provide an opportunity to undergraduate medical students to familiarize themselves with research methodology and techniques by being associated for a short duration with their seniors on ongoing research program or by undertaking independent projects. [11] In 2014, the Mahatma Gandhi Institute of Medical Sciences, Sewagram, Maharashtra instituted an annual award for undergraduate research ("Dr. Sushila Nayar Undergraduate Research Award") which is named after its Founder-Director, Dr. Sushila Nayar, in order to cultivate the research ethos among undergraduate medical students in that institution. [5]

The present cross-sectional study was conducted on undergraduate medical students to determine their perceptions regarding doing research during the MBBS course.

## MATERIALS AND METHODS

This cross-sectional descriptive study was conducted using the chain sampling technique. A pre-tested and pre-validated questionnaire was administered via Google forms to students aged 18+ years, of either gender, who were enrolled in the MBBS course in various colleges in the state of Maharashtra. Informed consent was taken on the Google forms. The data were adapted to Microsoft Excel spreadsheet (Microsoft Corporation, Redmond, WA, USA) and analyzed using SPSS statistical software Windows Version 25.0 (IBM Corporation, Armonk, NY, USA). The percentage of responses and the standard error of difference between two sample proportions were calculated. For continuous data, the standard error of difference between two means was calculated. 95% Confidence interval (CI) was stated as: [Mean-(1.96)*Standard Error)] - [Mean+(1.96)* Standard Error)]. The statistical significance was determined at p<0.05.

## RESULTS AND DISCUSSION

A total of 108 medical students (56 females: 51.85% and 52 males: 48.15%) participated in this study. The mean age of female participants was 19.95 +/- 1.03 years (95% CI: 19.68 – 20.22 years) while that for their male counterparts was 20.19 +/- 1.77 years (95% CI: 19.71 – 20.67 years). The gender difference in mean age was not statistically significant (Z=0.852; p=0.393). The minimum age, first quartile, median and third quartile of the age distribution was identical for females and males, but the maximum age was higher for male participants (Fig-1).

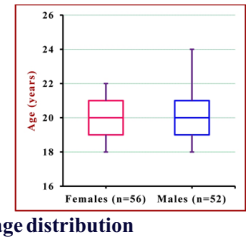


**Fig-1: Box plot of age distribution**

Among the respondents, 22 females (39.29%) and 21 males (40.38%) had attended workshops on Research Methodology, with no significance in gender difference (Z=0.116; p=0.904). Eight females (14.29%) and five males (09.62%) had participated in Short-term studentship program conducted by the Indian Council of Medical Research. The gender difference was not statistically significant (Z=0.745; p=0.453).

**Table-1: Gender differences in perceptions towards research**

| Perception toward research | Females (n=56) | Males (n=52) | Z value | 'p' value |
|---|---|---|---|---|
| Need to allocate specific time for research in the MBBS curriculum | 50 (89.29%) | 45 (86.54%) | 0.438 | 0.659 |
| Need to upgrade MBBS curriculum and introduce research component | 52 (92.86%) | 50 (96.15%) | 0.747 | 0.453 |
| Lack of adequate resources for research | 30 (53.57%) | 32 (61.54%) | 0.836 | 0.400 |
| Research activities are currently neglected in MBBS course | 31 (55.36%) | 25 (48.08%) | 0.756 | 0.447 |
| Participation in research will diminish the time available for leisure activities | 25 (44.64%) | 28 (53.85%) | 0.955 | 0.337 |
| Research work should begin from the first year of the MBBS course | 43 (76.79%) | 25 (48.08%) | 3.087 | 0.002 * |
| Research during MBBS course will foster deeper understanding of clinical subjects | 11 (19.64%) | 44 (84.62%) | 6.748 | <0.00 01 * |
| Senior students should motivate juniors for doing research | 53 (94.64%) | 42 (80.77%) | 2.213 | 0.027 * |

Z = Standard error of difference between two proportions; *Significant

In the present study, more than three-fourths of female respondents and nearly one-half of male respondents held the view that research work should commence from the first year of the MBBS course. The gender difference was statistically significant (Z=3.087; p=0.002). There was highly significant gender difference (Z=6.748; p<0.0001) in the perception that research work during MBBS course will foster deeper understanding of clinical subjects. A significantly higher proportion (Z=2.213; p=0.027) of female respondents opined that senior students should motivate juniors for doing research. (Table-1)

An Irish study [12] reported that medical students are largely unaware of the research activities in their host institutions. 32% of the students in an Irish study [12] felt that medical research would enable them to make advances and improvements in the medical field. 26% students opined that a research would be isolating and uninteresting. The remaining students indicated that they were still unsure. Studies have reported that involvement in undergraduate medical research motivates students to pursue further research. [13, 14] A study [15] has highlighted the community and parental expectations that medical students ought to qualify and become clinicians who live an affluent life and care for their family. Such community and parental expectations also deters students from pursuing an academic or research-based career. [15]

Students' perceptions regarding research differ across their backgrounds, especially amongst those from developing countries compared to their developed counterparts. [16] Although research work is conducted during postgraduate period of Indian medical training, research ethos has neither percolated to undergraduate medical education nor has inspired a significant proportion of graduates to take up academic or research career, despite efforts by governmental organizations and universities. [17]

A study [18] from Shillong, Meghalaya has reported that undergraduate medical students can be motivated to carry out research when provided with suitable encouragement by the administration and faculty. Students tend to conduct research in an academic subject when they hold positive attitudes toward that subject and the result of their research in the form of a publication imparts reassurance and recognition of their work. [19]

## CONCLUSION

Due to a variety of reasons, there is a global decrease in the number of undergraduate medical students taking up research. It would be challenging to change the mind-sets of various stakeholders in situations where the priorities are dissimilar for medical students, families, communities and governments. Multiple institutions and organizations ought to conduct structured mentored medical student research programs that would encourage research among medical students and skills for writing articles in medical journals. Likewise, undergraduate students who undertake research work may be given credit in the form of internal assessment.

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