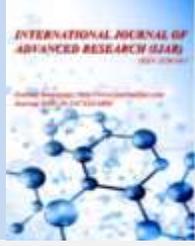


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RESEARCH ARTICLE

AWARENESS, INTEREST AND LIMITING FACTORS IN MEDICAL RESEARCH: MEDICAL STUDENT'S PERSPECTIVE IN A NORTH INDIAN MEDICAL COLLEGE

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Abstract

Introduction: In recent times there is decline in the number of clinicians involved in research activities all over the world including India. A medical student having the knowledge of scientific concepts along with his clinical experience can serve a key role in the advancement of medical science. Introduction of research methodology at an early stage will help medical students to inculcate the aptitude of evidence-based decision-making in their clinical practice.

Methods: We designed a cross-sectional study, in which 198 students (98 female and 100 male) from the 1st year M.B.B.S batch of Pt. B.D. Sharma Post Graduate institute of medical sciences, Rohtak, Haryana, India, completed a self-administered questionnaire to assess their awareness, interests and possible limitations in medical research.

Results: Out of 198 students, more females were aware about the scope of research in medical education than males. Females showed more interest in participating in Under Graduate research projects as compared to males. Lack of time and burden of studies were considered limiting factors more in females than males. Students coming from rural background were lagging behind the ones from urban background in their awareness and interest in research.

Conclusion: Though majority of students were aware and showed interest in participating in research activities, lack of time and burden of studies were the major limiting factors in their research participation.

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Introduction:-

Research is defined as a systematic process to attain new knowledge, skill or invention by the use of standard procedures. Research can be conducted in various fields. Scientific research is the systematic approach by which theories and hypotheses can be proved or disapproved [(Mehrapouretal 2015)]. Health research which is done in the field of medical sciences has a huge impact on the prevention, diagnosis and treatment of diseases and especially on framing and modifying health care programs and to help in framing policies for the benefit of patients as well as the general population (Lavis eta 2008l)

It becomes very important in today's era that tomorrow's clinicians are equipped with adequate research training during their undergraduate studies to promote critical thinking, develop critical appraisal skills and become research-

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oriented. Undergraduate students should be aware of the methodology for carrying out research as they will be future doctors who will have to practice evidence-based medicine in patient care [Mehrpour et al 2015]. Research experience is strongly linked to postgraduate research initiatives and future career achievements [Alghamdi et al 2014, Segal et al 1990, Reinders et al 2005, Brancati et al 1992].

There has been tremendous advancement in the field of biomedical research and the development of scientific studies in the biomedical areas has increased the necessity to employ more and more number of health professionals to the area of research [Zier et al 2006]. Studies have shown that early involvement in research promotes a tendency to continue the same in later stages of the medical profession [Segal et al, Ejaz et al 2011].

In the medical colleges, undergraduate involvement in research is less as can be attributed by analyzing the previous studies conducted in the past in India as well as other countries like New Zealand. [Pallamparthi et al 2019, Serena et al 2010]

There has been a considerable decline in the number of researchers in the basic sciences biomedical field in Japan which is quite alarming. [Yamajhaki et al 2013]

Although few studies suggest a higher percentage of interest in research among undergraduate students as depicted by an American medical school study where 97 % of students considered research a useful alternative to electives [Frishman 2000].

The studies in favour of increased involvement in research among the medical school undergraduates is far less in number than those revealing decreased interest in research among the medical school undergraduates across the globe. There can be several factors influencing the attributes of undergraduate medical students' awareness, interests and possible limiting factors about pursuing research. The present study is therefore conducted to identify the awareness, interests and possible limiting factors about pursuing research among the medical college undergraduate students in a health university in Haryana. The findings of the present study will contribute in identifying attributes of undergraduate medical students in the field of research that will be further helpful in formulating means for improving research involvement among the medical school undergraduate students.

Material and Methods:-

Participants:-

The study included 198 undergraduate medical students from first-year M.B.B.S course studying at a health university in northern India. The mean age of the participants was 19.7 ± 1.2 years. The survey was anonymous and confidential. The participation in the study was purely voluntary and prior consent was taken from the participants. The study was conducted in accordance and approval with the rules of the institutional ethical committee of the university.

Data Collection:-

Google forms platform was utilized to collect the data and the students were invited to participate on the online platform via Email and WhatsApp message. A gentle reminder was sent to respondents to ensure the attainment of maximum responses. Informed consent was taken from every participant before taking part in the study.

All the participants were provided with a self-administered validated study questionnaire which was without any intervention by the authors or any other specific person. The students who did not choose to participate were excluded from the study.

Questionnaire Design:-

The questionnaire consisted of four sections;

1. demographic details and place of current residence,
2. awareness about research in the medical field,
3. interest in research in medical field,
4. limiting factors in pursuing research in medical field.

The questionnaire was available in English language.

Statistical Analysis:-

The recorded data was transferred on Excel database and analyzed by using SPSS Statistic 23(IBM SPSS Statistics, New York, United States). The qualitative data was reported as frequency (percentage) and quantitative data was reported as mean±SD, median, IQR. The various subgroups based on gender and residence were compared using Chi-Square test/Fischer-Exact test.

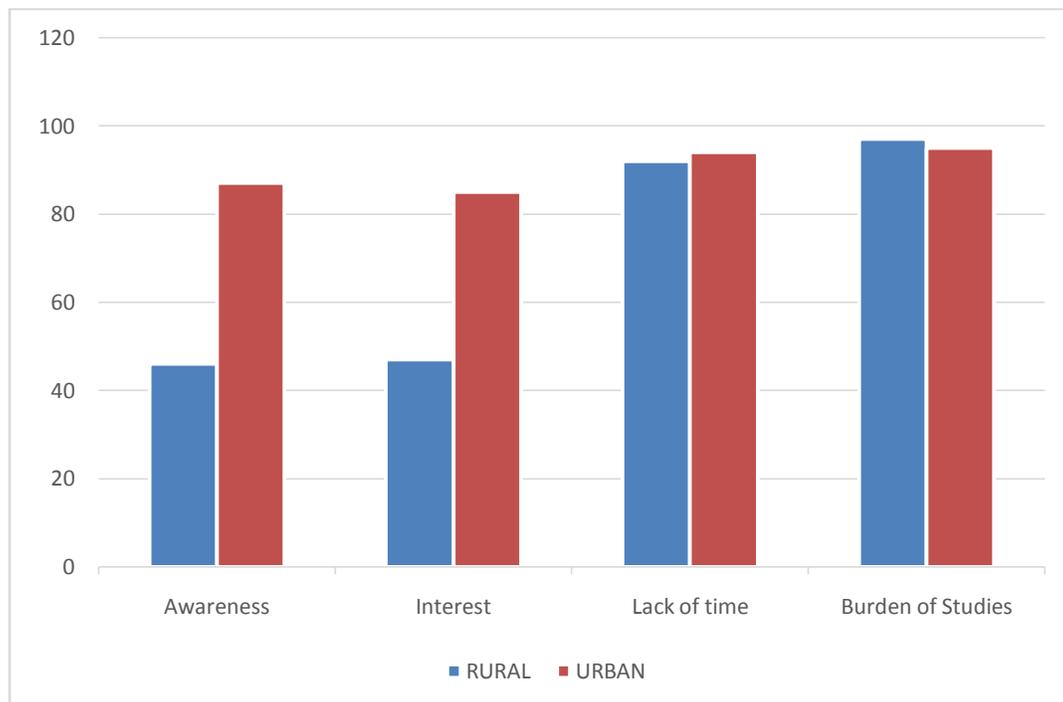
Results:-

The present study comprised of a total one-hundred-ninety eight first year medicalundergraduates studying at the University of Health Sciences, Rohtak, Haryana, India. Most students were living in nuclear family (n=124), and belonged to urban background (n=111). The mean age, gender distribution and place of living of participants is given in table 1.

Out of the total 198 students, 95.70% females were aware about the scope of research in medical education while 94.06% of males knew about it. Females (89.81%) showed more interest in participating in Under Graduate research projects as compared to males (85.15 %) but were less enthusiastic in choosing research as a career option (88.18%) in comparison to males (91.09%) table 2. Lack of time was considered a limiting factor more in females (92.48%) than males (85.15%) while burden of studies hampering research participation accounted for (87.11%) in females and (82.18%) in males. Students coming from rural background were lagging behind the ones from urban background in their awareness and interest in research table 3.

Table1:- Socio demographic Profile of Participants.

		MBBS(first year) (n198) Percentage
Age		19.7±1.2
Gender	Male	82 (41%)
	Female	116(59%)
Family	Nuclear	124 (62%)
	Joint	74 (38%)
Residence	Urban	111 (56%)
	Rural	87 (44%)

**Table 2:-** Showing the awareness, interests and limiting factors among the rural and urban population.

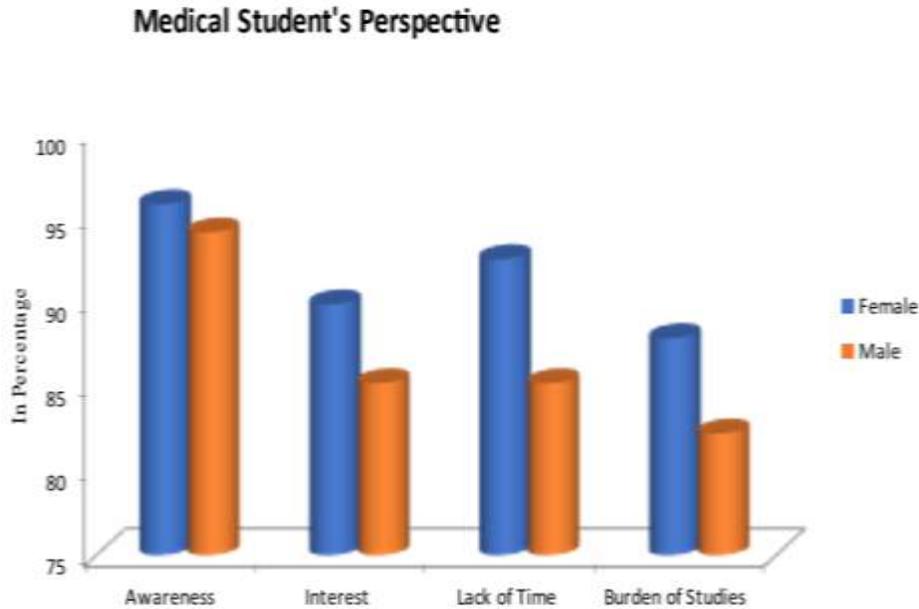


Table 3:- Showing the awareness, interests and limiting factors among the male and female population.

Discussion:-

The present study aimed at assessing the awareness, interest and possible limiting factors in pursuing research in the medical field among the first-year undergraduate students in a health university at Haryana, India

There can be many influencing factors among undergraduate medical students towards pursuing research. One of them is level of motivation of the faculty itself[Burgoyne etal 2010] Another factor is the level of prior training and skill development of the students and the staffin the field of research [Khan etal 2006], and the motivationalenvironment at the institution comprising of some reward or incentives given to those doing well[Shewan etal 2005].

At the graduate level, there have been several studies assessing students' perceptions and attitudes towards medical research. A study conducted by Vodopivec et al. [Vodopivecetal 2002] assessed medical students' knowledge and attitude towards scientific research in Croatia. Students expressed a positive attitude towards research in this study. Other studies assessing undergraduate students' perception towards research also generated higher response rates (100 and 74%, respectively)[Arifetal2018,Lopatto 2004].

The present study was conducted on the first-year medical undergraduates and according to a study conducted By David etal,most students entering medical school are unaware of how scientific research functions and its importance, and interest in scientific activity tends to emerge during the course itself[David etal 2016]. This has been contradicted by the findings of the present study where 89.81% of females and 85.15% of males showed interest in the field of research.

Many otherstudies have shown that some students have inadequate knowledge of research and are unaware of its importance which results in a compromised exposure to research training [Osman 2016]. In fact, a study by Funston et al. 2016 revealed that, among 1625 responses collected from 38 countries, less than half of medical students believed that their medical schools provided opportunities to be involved in mentored research.

However, there are only a few studies [Vodopivecetal2002,Noorelahietal 2015] assessing the nature of the barriers faced by graduate or undergraduate students while conducting medical research. According to the present study, lack of time and the burden of studies were the most common limiting factors in pursuing medical research among the medical first-year undergraduates.

It is essential to inculcate critical thinking and reasoning skills and to develop positive attitudes towards scientific research amongst medical students from the beginning of their careers [Khan 2006]. According to the present study,

a large number of students are showing interest in research in medical sciences. However, because of their vast curriculum and lack of time, these students are not able to take interest in research activities and pursue research in undergraduate period. Similar observation was found in another study conducted by Pallamparthi et al., where the students were interested in research but due to the lack of time and vast course, they were not taking part in the research. Adequate knowledge and a positive attitude toward research is an essential component toward increasing research among them [Pallamparthi et al. 2019].

The results of the study provide a firm basis to recommend that medical students are very well interested in pursuing research but the lack of time and burden of studies comes out to be the most important limitation. As students of today are future clinicians a greater focus on research education and promotion within medical school curricula should be done to boost the research involvement of future clinicians, develop the skills necessary to practice evidence-based medicine, and provide the benefits of research training to all medical graduates and in turn to the patients and general population.

Limitations of the study:-

The data were collected using a non-validated, self-applied questionnaire. The respondents who volunteered for the survey, maybe those individuals who already are predisposed to the field of research. Nevertheless, the study objectives were to assess the awareness, interests and limiting factors in pursuing research among the undergraduate medical students, which has been met in the present study.

Conclusion:-

The study conducted showed that first-year medical students studying at the University of Health Sciences Rohtak, Haryana, India are inclined toward research activity. The possible limiting factors which stopped the students from pursuing research were mainly lack of time and the burden of studies. Further studies may be conducted among the other professional years and among the same study population in later years of their undergraduate curriculum to assess any increased interest or disinterest among them at that stage regarding pursuing research as a career option.

Conflicts of Interest:-

None.

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