

Attitude Towards Research Among Undergraduate and Postgraduate Medical Students

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ABSTRACT

Background and Objectives: Research plays an essential part in academic advancement of medical students. At student level research experience is highly associated with future career achievements. This study was carried out to determine attitudes towards research among undergraduate and postgraduate students and also among male and female students.

Methods: It was a cross-sectional descriptive study conducted at Wah Medical College, Pakistan Ordinance Factory Hospital from January to June 2018. The study was carried out on 192 students, 64 postgraduate and 128 undergraduate students. They were selected by simple random sampling technique and a pre-tested attitude towards research (ATR) scale questionnaire was used for data collection. The first part of the questionnaire included demographic information and second part comprised of 30 questions to assess their attitude towards research. The questions were to be responded on seven points Likert scale from strongly disagree to strongly agree after taking informed consent. Data was analyzed by using Statistical Package for Social Sciences version 20.0 Means and standard deviations of each question and five different components i.e. research usefulness, research anxiety, positive attitude towards research, relevance to life and difficulty in research were calculated. Independent sample T test was applied on total mean scores of ATR scale and mean scores of all components of undergraduate and postgraduate students and the test was also applied on mean scores of ATR scale between male and female students.

Results: The means and standard deviations of ATR scale of undergraduate and postgraduate students were 125.15 ± 21.131 and 137.69 ± 22.371 respectively and the P value came out to be < 0.001 . Other factors studied also varied significantly among undergraduate and postgraduate students; research usefulness ($P = < 0.001$), research difficulty ($P = 0.027$) and positive attitude towards research ($P = 0.005$).

Conclusion: The postgraduate students showed more positive attitude towards research than the undergraduate students and no difference was noted among male and female students.

KEYWORDS: Attitude towards research scale, Students, Education, Medical, Undergraduate, Postgraduate.

INTRODUCTION

Research is a systematic method to attain new knowledge, science or invention and it plays vital role in our existence. With the help of research, inventions have been made possible and effective cure of many diseases is established employing new technologies and solutions.¹

Research in medical field is very important because there are many questions that are raised during patient dealing; these questions and peculiarities must be answered for better and effective patient care. Previously doctors were either clinicians or researchers but now it is realized that a good clinician is the one who is a good researcher and to build competent physicians & scientist, research training is integrated in undergraduate and post

graduate curricula by the higher authorities.² The aim of medical education is to train students in such a manner that they are able to perform their roles as clinicians, educators as well as clinical researchers.³

Research plays an essential part in academic advancement of medical students. At student level, research experience is highly associated with future career achievements but conducting research is a difficult task at student level. Many hurdles are described like lack of support from the senior faculty, lack of motivation, deficient time and scarcity of funds.⁴⁻⁶ Participation of medical students in research is related with the gain of transferable skills in the areas of communication, group work, time management and also improving critical thinking of students. Moreover, research experience during

medical education is strongly related to post graduate research initiative and future professional attainment.⁷ It is very important to assess the attitude of students towards research and discover the problems and challenges faced by them. The objectives of the study were to determine the attitude towards health research among undergraduate & postgraduate medical trainees. Findings of this study will assist in identifying their attitude and provide an insight into necessary measures for enhancing research activities by students.

METHODS

A cross-sectional study was conducted at Wah Medical College and Pakistan Ordinance Factory Hospital, Wah Cantt; from January to June 2018 after approval from Institutional Ethical Board. A total of 64 postgraduate trainees and 128 undergraduate students were randomly selected. A pre-designed validated structured questionnaire was used for collection of data; secrecy and confidentiality were maintained during the study. The questionnaire included demographic data like age, gender, living area, level of education and 30 questions of Attitude towards Research (ATR) scale. The Cronbach alpha reliability of the scale was calculated as 0.88. The questions were responded on seven points Likert scale from strongly disagree to strongly agree, 1 point given to strongly disagree and 7 to strongly agree while eleven questions (1, 6, 8, 9, 14, 16, 21, 23, 24, 26 and 30) were analyzed in reverse order. The cut off 5 was taken for declaring attitude of students positive towards research.

STATISTICAL ANALYSIS

Statistical Package for Social Sciences (SPSS) version 20 was used for analysis of data. Frequencies and percentages of categorical variables were calculated. The 30 questions were also categorized and analyzed in terms of research usefulness, research anxiety, positive attitude towards research, relevance to life and difficulty in research. The means and standard deviations of each question and the five categories of the questionnaire were calculated. Independent sample T test was applied on mean scores of attitudes towards research scale and mean scores of five categories of attitude towards research scale separately among undergraduate and postgraduate students. The present study also mapped any gender-based difference in research attitude by applying independent sample T-test. The criteria of significance were considered at *P-value* of less than or equal to 0.05.

RESULTS

The research was conducted on 192 students of which

128 (66.7%) were undergraduates and 64 (33.3%) were postgraduate students. A total of 126 (65.5%) students were in the age group of 20-25, 54 (28.1%) in the age group of 25-30 and 12 (6.3%) were in the age group of 30-35. The female students were 111 (57.8%) and 81 (42.2%) were male students. Out of 64 postgraduates, 14 (7.3%) were in first year, 19 (9.9%) in second year, 9 (4.7%) in third year and 22 (11.5%) were in the fourth year of training.

The mean score of 30 items of ATR scale came out to be 4.31 ± 1.55 which was low than the cut off, showing low attitude towards research. Means and standard deviations of individual items of the scale are presented in (Table- 1).

Table- 1: Descriptive statistics of Attitude Towards Research Scale.

S. No.	Attitude Towards Research Scale	Mean	Standard Deviation
1.	Research makes me anxious	3.00	1.542
2.	Research should be taught to all students	5.37	1.557
3.	I enjoy research	4.42	1.670
4.	Research is interesting	4.72	1.553
5.	I like research	4.42	1.593
6.	Research scares me	3.94	1.576
7.	Research is useful for my career	5.46	1.493
8.	I find difficult to understand the concept of research	4.17	1.629
9.	I make many mistakes in research	3.35	1.439
10.	I love research	4.09	1.662
11.	I am interested in research	4.53	1.585
12.	Research is connected to my field of study	5.17	1.568
13.	Most students benefit from research	5.30	1.514
14.	Research is stressful	2.92	1.459
15.	Research is very valuable	5.28	1.583
16.	Research makes me nervous	3.42	1.430
17.	I use research in my daily life	3.94	1.651
18.	The skills I have acquired in research will be helpful in future	5.16	1.454
19.	Research is useful to every professional	5.51	1.410
20.	Knowledge from research is as useful as writing	4.99	1.514
21.	Research is irrelevant to my life	4.39	1.496
22.	Research should be indispensable in my professional training	4.71	1.492
23.	Research is complicated	3.10	1.390
24.	Research thinking does not apply to my personnel life	3.77	1.465
25.	I will employ research approaches in my profession	4.95	1.531
26.	Research is difficult	3.01	1.451
27.	I am inclined to study details of research procedures carefully	4.87	1.514

28. Research is pleasant	4.23	1.615
29. Research oriented thinking plays an important role in my daily life	4.67	1.484
30. Research is complex subject	2.87	1.454
Total score	129.33	22.96

Table- 2: Difference in means of ATR scale factors across undergraduate and postgraduate students.

Factors	Undergraduate Students		Postgraduate Students		P value*
	Mean	Standard Deviation	Mean	Standard Deviation	
Research usefulness	44.54	8.881	50.58	8.083	0.000
Research difficulty	7.23	2.582	8.05	1.889	0.027
Relevance of research to life	16.36	3.775	17.53	4.197	0.052
Positive attitude towards research	35.16	9.226	39.31	9.970	0.005
Research anxiety	22.05	6.868	22.48	5.989	0.665

*Independent sample T-test

The attitude towards research and its five components separately (Table-2) were assessed among undergraduate and postgraduate students. The means and standard deviations of ATR scale of undergraduate and postgraduate students were 125.15 ± 21.131 and 137.69 ± 22.371 respectively and the *P-value* came out to be < 0.001 . The mean scores of research usefulness, research difficulty, relevance of research to life and positive attitude towards research of post graduates were more than undergraduate students and they were found significantly different by applying independent sample T-test while no significant difference was reported relating to research anxiety among the two groups (Table- 2). The attitude towards research was also compared among male and female students which was found to be insignificant ($P = 0.285$).

DISCUSSION

Scientific progress depends upon research promotion activities and evidence-based decision are more beneficial in every aspect of life. Health care providers, who are research oriented, offer better care to the community if they keep abreast with latest research. Furthermore, research exposure to students increases their critical thinking skills, team work and deeper understanding of the subject. This study was conducted with an aim to evaluate the attitude of undergraduates and post graduate students towards research. The study revealed that the attitude was significantly lower among undergraduate students in contrast to the postgraduate students. The results were contradictory to a study carried out in Iran which revealed that undergraduate students had significantly better attitude towards research as compared to the

postgraduate students.⁹ Abu-Zaid et al.¹⁰ assessed perceived attitudes of undergraduate students and demonstrated that almost all students had positive attitude towards research. Moraes et al.¹¹ reported that 81.7% medical students had interest in research but only 4.7 % gave importance to it. Another study conducted in Saudi Arabia favored our results; according to them only 44.4% undergraduates showed positive attitude towards rearsrch.¹² Ismail et al.¹³ compared the interest in research in two medical universities and they revealed that majority of the students had interest in research. Habib et al.¹⁴ evaluated the attitude of undergraduate dental students showing that mean attitude score of 3.87 and it was considered positive attitude.

Regarding attitude of postgraduate students, few studies are comparable with our study results. Pawar et al.¹⁵ and Gupta et al.¹⁶ found that 76% and 73.3% students respectively had an opinion that training in research should be made compulsory during their postgraduate training. Habineza et al.¹⁷ discovered that both the interns and residents of Rawanda University realized the significance of research but the interns showed significantly higher score to educational benefits of research as compared to the residents.

The present study also analyzed the different components of ATR scale. Firstly, regarding the usefulness of research, postgraduates showed significantly higher score and they believed that research conduction is very useful for them in future and it should be a part of professional training. The result is supported by other studies. Giri et al.¹⁸ reported that 64% postgraduate students thought that the training in research should be made obligatory. Kini et al.¹⁹ concluded that undergraduates also thought that research practice should be a part of medical curriculum and it will help them to excel in various competitive exams. It depicts that fundamentals of research should be included in the curriculum of undergraduate students while advanced research skills may be made a mandatory part of postgraduate curriculum.

Regarding the relevance of research to life, the postgraduates got higher score which was supported by Meraj et al.²⁰ According to them 66% students thought that research was related to their daily life and also for their profession.²⁰ Siamian et al.²¹ also reported concordant results with the present study.

The attitude towards research was also compared among male and female students and it was found insignificant. The results were supported by Siamian et al.²¹ but some literature showed contradictory results. Noor Elahi et al.²² and Althubaiti et al.²³ disclosed that female students showed more positive attitude while Stockfelt et al.²⁴ revealed that male students were more interested in doing

research.

The research anxiety was found to be equal in both types of students so it is recommended that there must be appropriate counseling of students and their fears or myths relating to research may be removed. The institutes should facilitate the students regarding their needs and difficulties in research work, so that research anxiety can be dragged to its minimum level.

Professional development activities may be initiated to bring positive change among students. There must be promotion of research culture because it is not only valuable for students' professional pathway but also for the health of patients and the community where they will serve.

CONCLUSION

It is concluded that the attitude towards research is better among postgraduate students and they also considered it to be very useful and relevant to their profession while research anxiety was almost equal in both the groups. Moreover, no difference in attitude towards research was noted among male and female students.

LIMITATIONS OF STUDY

There are few limitations of the study. Firstly, the study sample was taken from a single institution so its results cannot be generalized. Secondly, the attitude cannot be assessed at one point in time that's why it's better to use longitudinal study design. Thirdly, as we used Likert scale to assess the attitude towards research, the central tendency bias and acquiescence bias cannot be eliminated.

RECOMMENDATIONS

Seminars should be held regularly to increase awareness about research benefits among undergraduate students. Undergraduates should join active research networks such as Research-gate, Medline, Scholar One, Elsevier etc. The colleges should modify their policies and faculty should take part in developing research culture in their institutions. The students should also be motivated to become a part of research projects carried out in their institutions.

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AUTHOR'S CONTRIBUTION

SSI: Conception and design, Analysis and interpretation of the data, Drafting of the article, Final approval and guarantor of the article.

MN, WD, UA, RS, QS, MZ: Collection and assembly of data.

CONFLICT OF INTEREST

None to declare.

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