

ORIGINAL ARTICLE

Postgraduate Trainees Attitudes Towards Research

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ABSTRACT

Background: A limited number of researchers in the field of medicine over recent years in Pakistan has aroused interest to inquire into the causes leading to it. Thus, the objective of this study is to promote and preserve research culture amongst the young doctors by assessing the attitude of postgraduate trainees towards research.

Methods: It was a descriptive, cross-sectional study in which an anonymous questionnaire, comprising of 32 questions on a 4-point Likert scale was distributed to surgical, medical and allied residents of six institutes. SPSS was used to calculate the descriptive and inferential statistics of the responses.

Results: Out of 240 participants 135 (56%) postgraduate trainees from various institutes responded to the questionnaire. The mean score for research usefulness was 3.25; for research anxiety was 2.64; for positive attitude was 2.74; for relevance to life was 2.47; and for research difficulty was 2.70. The overall mean was 2.76. Although majority of the postgraduate trainees perceived research useful to their professional lives but at the same time experienced research anxiety, difficulty during the process and thought it was irrelevant to their personal lives. The differences between the mean scores for different genders, age groups and specialty were not significant.

Conclusion: The results of the study concluded that overall postgraduate trainees view research with a negative attitude. Steps must be taken to address their anxiety related to research work and to help them develop a positive attitude towards research.

Keywords: Postgraduate trainees, research, attitude

Introduction: Health research is integral to society. It provides important information about disease trends, risk factors, treatment outcomes and interventions in public health; which leads to remarkable improvement in health care as a result of significant discoveries and the development of new therapies (Nass & Levit, L. A. Gostin, 2009); However, it has been noted that over past few decades the number of physician/clinicians/scientists is declining. Dr. James Wyngaarden went as far as declaring them as an “endangered species” (Wyngaarden, 1979). These dwindling numbers of physician scientists is of great concern not just to the society but also the medical profession; as they contribute to the advancement of medical knowledge, provide foundation for evidence-based medical training and serve as teachers to the new generation of medical students (Vincent W. Yang, MD, 2006). In order to promote and preserve research culture amongst young doctors, Pakistan

Medical and Dental Council in its MBBS curriculum (2011) has defined “researcher” as one of the generic competencies and desired outcomes required of a medical graduate. Apart from this, the competency framework of PMDC also mentions critical-thinker and problem-solver as one of the qualities of a seven-star doctor, which can only be inculcated as a result of systematic research. Attitude may be defined as a established way of thinking and feeling about something, and ranges from positive to negative. Positive attitudes, in contrast to the negative, brings constructive changes to one’s life and contribute towards success (Hill & Stone, 2010). These attitudes determine the amount of effort one is willing to expend towards learning and carrying out research. It has been revealed by prior studies that generally research is viewed with negative attitudes. (Solaja, Skinner, McGregor, & Siemens, 2018). Therefore, assessing postgraduate trainees’ attitudes towards research is important in order to enable supervisors to develop instructional techniques leading to more positive attitudes toward the subject (Waters, Martelli, Zakrajsek, & Popovich, 1988).

Numerous studies have been conducted all over the world to determine the attitude towards research of undergraduates and postgraduates (medical and non-medical students) (Amin et al., 2012; Ismail, Bazli, & O’Flynn, 2014; Khan, Khawaja, Waheed, Rauf, & Fatmi, 2006; Shaukat, Siddiquah, Abiodullah, & Akbar, 2014; Siemens, Sanoj, James, & Nimira, 2010). A similar study, “A national survey on urology residents’ attitudes towards

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research during training”, was carried out in Canada. However, there is still limited research into the attitude towards research of postgraduate trainees in Pakistan; and to our knowledge no such study has ever been conducted in Pakistan.

Method: This was a prospective, cross-sectional descriptive study in which postgraduate trainees working in surgery, medicine and allied residencies were surveyed.

Study Population: Postgraduate training were selected from six institutions across Punjab, including Allama Iqbal Memorial Teaching Hospital, Sialkot; Sardar Begum Teaching Hospital, Sialkot; Jinnah Hospital, Lahore; Services Hospital, Lahore; Akhtar Saeed Hospital, Lahore and Lahore General Hospital, Lahore. The sample consisted of 135 participants from 6 different teaching hospitals using convenience-sampling technique.

Instrument: A pre-validated questionnaire “Attitude towards Research” Scale (ATR) (Papanastasiou, 2005) was used. It comprised of 32 questions, which were differentiated into five factors: research usefulness, research anxiety, positive attitudes, relevance to life, and research difficulty. All these questions were in Likert scale format, and a higher number signified greater level of that particular attitude. Apart from this, the questionnaire consisted of a demographic section which included age, gender, institute of training, inducted residency and year of residency. All incomplete forms were discarded before data entry and analysis.

Data Collection: Participation was entirely voluntary, and confidentiality of the respondents was maintained during the survey. Prior to the survey informed consent, which was a part of the questionnaire, was taken. Also, Ethical approval was attained from University of Lahore’s Ethical Review Board.

Data Analysis: Statistical Package for the Social Sciences (SPSS) program Data was used during analysis. Descriptive and inferential statistics were utilized. Average mean scores and standard deviations of each factor were calculated.

Further, Tests of Normality (Kolmogorov-Smirnov and ShapiroWilk tests) revealed the p-value to be less than 0.05 (significant). Thus, the mean scores differences in the research attitudes of postgraduate trainees having different demographic variables were determined using non-parametric test (Man-Whitney U test).

Results: Out of 240 participants 135 postgraduate trainees from various institutes responded to the questionnaire. The overall response rate to the questionnaire was 56% (No. of responses=135/ Total no. of questionnaires distributed=240*100). Table 1 presents the demographic information of the respondents.

The average mean score and the standard deviation for all of the five factors and overall mean is shown separately in Table 2.

The factor “research usefulness” explored postgraduate trainee’s views regarding the importance of research to their profession. The mean score was 3.25 (SD=0.61), which shows a high attitude towards research usefulness of postgraduate trainees.

The second factor “research anxiety” looked into the fear and stress associated with research as well as the difficulty they experience in comprehending research. The mean score 2.64 (SD=0.72) indicated high research anxiety amongst the post graduate trainees. The third factor “positive attitudes” mean score was calculated to be 2.74 (SD=0.63), showing that the postgraduate trainees do not like and enjoy research or find it interesting. They also believe that research is not beneficial, thus indicating a negative attitude towards research. The fourth factor “relevance to life” again has a low mean score of 2.47 (SD=0.63), therefore establishing that postgraduate trainees deem research to be irrelevant to their lives. The fifth and last factor “research difficulty’s” mean score of 2.70 (SD=0.72) can be interpreted as that the postgraduate trainees have difficulty understanding the key concepts of research and face problems during research process. Therefore, it can be deduced from the overall mean for the five factors 2.76 (SD=0.39) that the residents have negative attitude towards research.

Table 3 presents the differences in the average mean scores in the attitudes towards research of postgraduate trainees with different demographic variables. The mean scores of males and females for the five factors were not significantly different as the p value was > 0.05. The attitude “relevance to life” had the lowest mean score for males and females of 2.45 (SD=0.62) AND 2.48 (SD=0.64), respectively, showing that both the genders considered research irrelevant to their daily lives.

There was again no meaningful difference in the average mean scores for different age groups of <30 years and >30 years. However, it is seen that “research usefulness” and “positive attitude” has slightly better mean scores in age group > 30 years. Therefore, attitude towards research and perceived usefulness of research for profession was slightly superior in older age groups of the postgraduate trainees. Also, mean scores for “research anxiety”, “relevance to life” & “research difficulty” were somewhat lower in age groups >30 years; providing evidence to establish that elder age groups of postgraduate trainees experience lesser stress and fear during the research process, consider it more relevant to life and face less trouble and problems during research as compared to younger age groups.

The results for difference between the mean scores for different specialties, surgical and allied and medicine and allied, were also insignificant.

Table 1: Demographic information of the respondent

Variables		Frequency	Percentage (%)
Age (N=135)	<30 years	119	88.1
	>30 Years	16	11.9
Gender (N=135)	Male	55	40.7
	Female	80	59.3
Institute (N=135)	Allama Iqbal Memorial Teaching Hospital & Sardar Begum Teaching Hospital	59	43.7
	Services Hospital	15	11.1
	Jinnah Hospital	50	37
	Akhtar Saeed Trust Hospital	9	6.7
	Lahore General Hospital	2	1.5
Specialty (N=135)	Surgery & Allied	97	71.9
	Medicine & Allied	38	28.1
Year of Training (N=153)	1 st	51	37.8
	2 nd	36	26.7
	3 rd	28	20.7
	4th	20	14.8

Table 2: Mean score and Standard deviation for five factors

Factors	N	Mean (M)	Standard Deviation (SD)
Research Usefulness (RU)	135	3.25	0.61
Research Anxiety (RA)	135	2.64	0.72
Positive Attitudes (PA)	135	2.74	0.63
Relevance to Life (RL)	135	2.47	0.63
Research Difficulty (RD)	135	2.70	0.72
Overall	135	2.76	0.39

Table 3: Mann-Whitney U tests for comparison of mean scores in the research attitude of postgraduate trainees with different demographic variables.

Factors			Mean (M)	Standard Deviation (SD)	P value
Research Usefulness (RU)	Gender	Male	3.30	0.70	0.149
		Female	3.22	0.54	
	Age (Years)	<30	3.23	0.60	0.256
		>30	3.40	0.65	
	Specialty	Surgery & Allied	3.22	0.62	0.418
		Medicine & Allied	3.33	0.57	
Research Anxiety (RA)	Gender	Male	2.57	0.73	0.618
		Female	2.69	0.72	
	Age (Years)	<30	2.66	0.70	0.295
		>30	2.47	0.84	
	Specialty	Surgery & Allied	2.60	0.71	0.356
		Medicine & Allied	2.74	0.76	
Positive Attitude (PA)	Gender	Male	2.81	0.74	0.363
		Female	2.69	0.55	
	Age (Years)	<30	2.73	0.61	0.523
		>30	2.81	0.82	
	Specialty	Surgery & Allied	2.74	0.60	0.862
		Medicine & Allied	2.75	0.72	
Relevance to Life (RL)	Gender	Male	2.45	0.62	0.741
		Female	2.48	0.64	
	Age (Years)	<30	2.47	0.63	0.754
		>30	2.42	0.63	
	Specialty	Surgery & Allied	2.49	0.65	0.418
		Medicine & Allied	2.41	0.54	
Research Difficulty (RD)	Gender	Male	2.58	0.84	0.140
		Female	2.78	0.62	
	Age (Years)	<30	2.73	0.71	0.249
		>30	2.50	0.77	
	Specialty	Surgery & Allied	2.70	0.71	0.982
		Medicine & Allied	2.70	0.76	

Discussion: The research attitudes of postgraduate trainees were determined through this study on five areas: research usefulness, research anxiety, positive attitudes, relevance to life, and difficulty of research. Although majority of postgraduate trainees perceived research useful to their professional lives but at the same time experienced research anxiety, difficulty during the process and thought it was irrelevant to their personal lives. According to few studies (Ismail et al., 2014; Siemens et al., 2010), no prior involvement in research during medical school; participation in research during medical school just to facilitate acceptance into a residency of choice; lack of adequate allotted time for research endeavors; insufficient training in research methodology in medical school; difficulty in attaining a research supervisor, are few of the numerous reasons that can explain these attitudes.

Another study conducted to determine level of anxiety during research method course showed that the students who found their research courses easy were more likely to have lower levels of anxiety (Papanastasiou, n.d.). Thus, there is a dire need to facilitate research experiences at medical school level by developing proper research courses (that includes appreciation of research methodology and subsequent critical appraisal of medical literature) and inducting well-trained research supervisors. A second result of the same study also shows that students who considered research to be important for their profession had higher levels of anxiety; which could very well justify our results of high research usefulness and research anxiety amongst the postgraduate trainees.

Our study further inquired the effects of demographic variables on the postgraduate trainees' research attitudes. There was not much disparity seen between males and female postgraduate trainee's attitude towards research. However, it could be seen from the mean scores that males considered research slightly more useful to their professional lives, experiences lesser anxiety and difficulty during the process and had more positive attitude towards research than females. The study "Postgraduate students attitude towards research", (Shaukat et al., 2014) establishes that females had significantly poor attitudes towards research than males. Similarly, a study found that the interest of female clinicians in research was considerably lesser as compared to the males (Sabzwari, Kauser, & Khuwaja, 2009).

Although, there was no major difference between the genders attitude towards research in our study; the slight inconsistency could be due to multiple reasons. Males are more inclined towards mathematics and statistics, which constitute a major chunk of research process. Also, females in Pakistan have different sociocultural expectations than males like domestic responsibilities, due to which research is considered merely as a degree and promotion requirement. In a study conducted in US,

Women physicians consistently rated their abilities to perform or apply knowledge and skills related to clinical research lower than men rated themselves (Bakken, Sheridan, & Carnes, 2003), thus low self-ability could also be one of the barriers for females involvement in research.

In this study, it was seen that the younger (<30 years) and elder (>30 years) age groups had no significant difference in their attitudes. However, still the mean scores for "research usefulness" and "positive attitude" were slightly better in elder age groups. The main cause behind better attitude towards research of >30 years age group respondents could be that they are at a crucial point in career and hence more involved in research activities (Shaukat et al., 2014).

Finally, the study compares the attitudes towards research amongst residents of surgery and medicine, which are not remarkably different from one another.

Conclusion: In conclusion, it was seen that overall postgraduate trainees view research with a negative attitude. Although, majority of the respondent perceived research to be useful; they still suffered from research anxiety, were challenged in developing positive attitude towards it as well in applying it to their practical lives. These kinds of attitudes might hinder their participation in the research activity, which is an alarming state of affair for the medical profession which builds upon evidence gathered from clinical research.

Limitations: There were some unavoidable limitations during the conduction of this study. Firstly, in order to generalize a result to a larger group, the study should involve more participants (Lee & Baskerville, 2003). However, due to time constraint, only a small subset of population was included in the survey. Also, due to busy and hectic duty schedule of the postgraduate trainees, a lot of difficulty was faced to convince and motivate them to fill the questionnaire; leading to a low response rate.

Way Forward: Considering the limitations of this study, in order to improve the results, I'd like to continue the study to include postgraduate trainees from different cities and provinces of Pakistan; also elder age group of the residents will be targeted. Further work should include a comparative analysis of how location of the residents affects their attitudes; and correlation of it with their prior training and barriers faced.

Declaration of interest:

The authors report no conflict of interest.

(Questionnaire included at the end)

Author's contribution:

- Dr. Remsha Mustafa : Conception and design of the work; & the acquisition, analysis, & interpretation of data for the work
- Dr. Arooj Zafar : Drafting the work & revising it critically for important intellectual content
- Dr. Ahsan Sethi : Critical Review and final approval of the version to be published

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