

ORIGINAL ARTICLE

Factors Causing Lack of Interest in Clinical Research Among Postgraduate Trainees at Peoples University of Medical & Health Sciences for Women, Shaheed Benazir Abad. A Mixed Method Study

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Background: Conduct of clinical research requires time, resources, dedication, enthusiasm, willingness, knowledge, training of research methodology, and practical skills. Postgraduate medical students show lack of interest towards clinical research attributed to a diverse group of causes.

Objectives: The objective of current mixed method study was to evaluate factors contributing to lack of interest in clinical research among PG trainees at PUMHSW SBA.

Study Design: This is a Mixed Method Study.

Place and Duration of Study: This study was conducted at Peoples University of medical & health sciences for women Shaheed Benazir Abad Sind (PUMHSW - a public sector medical university) from September to November 2022.

Methodology: After taking approval from the Institutional Ethical review committee and obtaining written informed consent from the 50 participants selected by purposeful sampling. Two focus group discussions (FGD) were arranged, which were recorded and transcribed. Thematic content analysis of these transcripts was carried out. In the subsequent phase the predesigned validated questionnaire was used and analyzed using descriptive statistics.

Results: A total of 92% (46/50) responded, of those 21 were females. The knowledge regarding research and its methodology was 89-93%. Eighty-nine percent strongly agreed to include research in the curriculum and believed that it would facilitate better patient outcome and clinical practice (89.1%). All respondents opined that faculty and mentors play a crucial role in the conduct of research. Factor hindering interest in research were lack of previous exposure to research (54.3%), lack of research curriculum (45.7%), deficient statistical support (43.5%), disinterested faculty (30.4%), lack of time due to heavy ward duties (39.1%), and family commitments (37%).

Practical Implication: Conduct of clinical research requires time, resources, dedication, enthusiasm, willingness, knowledge, training of research methodology, and practical skills. Current study will provide help to the new researchers to solve their research hazards for new and innovative developments.

Conclusion: Majority of the participants had some knowledge about research and its positive impacts on clinical practice. Factors identified to cause lack of interest included lack of research curriculum, statistical support, time, previous knowledge, financial and family issues.

Keywords: Clinical research, factors, lack of interest, attitude, post graduate trainees.

INTRODUCTION

Clinical research is a part of medical and health research planned to produce knowledge required to understand human disease, preventing and treating illnesses, and promoting health.¹ Thus clinical research is vital in the advancement and improvement of quality of care provided in healthcare environment and it contributes to continuing professional development and health system strengthening.² Nowadays health professional are doing evidence based practice to solve complex problems effectively but postgraduate (PG) trainees are found more focused on acquiring knowledge and learning clinical procedural skills rather than taking interest in scientific research.³

Tiyuri, et al. found a linear relationship of research self-efficacy to academic performance of PG students, refining the former will significantly improve the later.⁴ Research keeps them up to date with the recent advances and enhance their critical thinking, deep understanding and communication skills. Regardless of these advantages, persistent and significant declined interest in research exists among health professionals.⁵

Conduct of clinical research requires time, resources, dedication, enthusiasm, willingness, knowledge, training of research methodology, and practical skills.⁶ So far, the subject or teaching of 'research' is not incorporated or prioritized in the medical curriculum at any level.^{2,6}

Several studies were conducted to identify the knowledge, barriers and distracting attitudes of undergraduate as well as postgraduate medical students towards research and recognized a huge diverse group of causes leading to lower level of interest in research including inadequate awareness, motivation and training, resources, financial and time constraints, lack of incentives, age, gender, marital status and insufficient mentorship.⁵⁻¹⁶

The rationale of this study was absence of local statistics regarding factors responsible for lack of interest of PG trainees in conduction of original clinical research. There is also existence of a research gap in this field, though various studies have been carried out to identify the reason of this problem and ample data is available about the factors deviating undergraduate medical students from research but there is limited data available about PG medical trainees.

This study was conducted to identify the major contributory factors, focusing the problem in a women medical university for the very first time. The purpose of this sequential exploratory study at Peoples University of Medical & Health Sciences for Women (PUMHSW) Shaheed Benazir Abad (SBA), was to obtain statistical, quantitative results about the factors causing lack of interest among PG trainees from various medical disciplines in a women university and probing out the more prevailing factors in detail while suggesting few possible remedial proposals.

METHODOLOGY

This study was conducted at Peoples University of medical & health sciences for women Shaheed Benazir Abad Sind (a public sector medical university) from September to November 2022. After taking permission from Institutional ethical committee, possible participants were identified from the record of postgraduate medical center. The participants included in the study were second and third-year PG trainees of FCPS/MS/MD courses from various disciplines using Purposeful sampling technique with maximal variation. For FGD, 50 PG Trainees of FCPS/MS/MD Programs were selected from various disciplines and the purpose of the research was explained. The participants i.e., second and third-year PG trainees divided into two for FGD were arranged at

postgraduate medical center. Each FGD was carried out with 25 PG trainees from various disciplines putting forth both close ended and open ended questions for discussion. FGD was augmented by taking written notes and audio recording to develop themes and subthemes for developing the questionnaire for the quantitative part.

In the subsequent phase, a written informed consent was obtained from all PG trainees fulfilling the inclusion criteria i.e., second and third-year PG trainees who have not submitted their synopsis. A self-administered predesigned validated questionnaire with 14 close-ended questions and 18 questions to be graded on Likert scale of agreement was provided to the participants, which was modified from similar studies conducted by Khan et al.¹⁷, Pawar et al.¹⁸, Sharma et al.¹⁹, with sufficient time to fill it. Questionnaire was comprised of three parts, the first one reveals general demographic information about the participants like age, gender, course they are enrolled in, duration of training, specialty and marital status. The second part of questionnaire assessed participant's knowledge, practice and attitude towards research. The third part is related to identification of the factors responsible for hampering interest of PG trainees in clinical research. The filled questionnaires were collected and assessed to evaluate the perception of participants using SPSS version 23.

Data Analysis: Qualitative data obtained from FGD, was analyzed by using classical content analysis and discourse analysis to develop themes and sub themes, used to develop Questionnaire based on Yes/ No response and 5 point Likert scale of agreement levels while quantitative data obtained from questionnaire, was analyzed by using SPSS version 23. Mean and standard deviation was calculated for numerical variables like age, gender, course admitted, field of specialization, duration of training and marital status. Categorical variables were assessed by percentages, frequencies and correlation between categorical variables was tested by using Chi square test. The statistical significance was set at P-value < 0.05.

Exclusive Criteria: Various questions were asked about the perception of PG trainees about research and it is evident that majority of trainees were acquainted with the term research but mostly found unfamiliar with MEDLINE and never done literature search 37.

Inclusion Criteria: The participants included in the study were second and third-year PG trainees of FCPS/MS/MD courses from various disciplines, who have not submitted their synopsis to Postgraduate Medical Center PUMHSW.

RESULTS

The study was initiated by conducting two FGD with 50 PG Trainees from various disciplines fulfilling the inclusion criteria. In the second phase the questionnaire was distributed to these 50 postgraduate trainees and 46 of them returned the completed questionnaire form (response rate; 92%). Statistical analysis of demographic variables is given in table 1. The male and female distribution in various courses is shown in Figure 1. Majority of the respondents belonged to age group of 25 to 30 years (71%). Only 4% were above 40 years of age. Majority of the respondents, 12/46, were from Gynae/Obstetrics (26%), followed by Medicine (19.6%) and Surgery (17.4%). Twenty-eight (60%) trainees were unmarried with predominance of females 15(71.0%). Majority, 41 (89%) were second year trainees.

Table 1

Demographic characteristics	Number (n = 46)	Percentage
Age (in years)		
25-30	33	71.7
30-35	7	15.2
35-40	4	8.7
40-50	2	4.3
Gender		
Male	25	54.3
Female	21	45.7
Course		
FCPS	17	37
MS	20	43.5

MD	9	19.5
Specialization		
Medicine	9	19.6
Surgery	8	17.4
Gynae/obs	12	26.1
Anesthesiology	1	2.2
Paediatric medicine	7	15.2
Urology	1	2.2
Ophthalmology	3	6.5
Cardiology	3	6.5
Orthopedics	1	2.2
Neurosurgery	1	2.2
Marital status		
Married	18	39.1
Unmarried	28	60.9
Year of training		
Second year	41	89.1
Third year	5	10.9

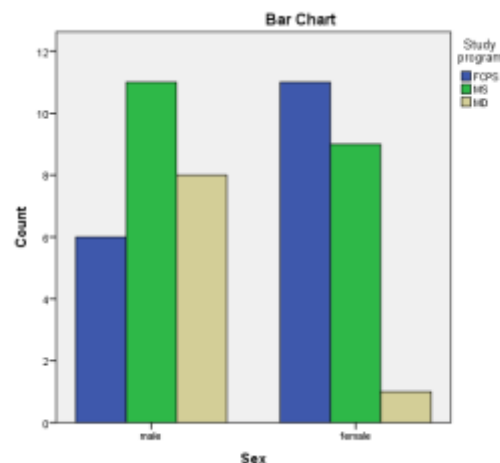


Figure 1

Table 2: Questions to assess knowledge, attitude and practice about conduction of clinical research

Assessment of Knowledge, Attitude and Practice of Clinical Research	Yes (%)	No (%)
Do you know definition of research?	43(93.5)	3(6.5)
Do you know what MEDLINE stands for?	12(26.1)	34(73.9)
Do you know from whom to look for approval before starting a clinical research project?	35 (76.1)	11(23.9)
Do you know how to take an informed consent?	41(89.1)	5(10.9)
Have you ever done literature search?	9(19.6)	37(80.4)
Do you read journal related to your specialty regularly?	24(52.2)	22(47.8)
Research methodology training must be made mandatory for postgraduate trainees?	41(89.1)	5(10.9)
Does patient outcome improve with continued medical research?	41(89.1)	5(10.9)
Do you think proper supervision & guidance is compulsory for postgraduate trainees to conduct research project?	46(100%)	-
Should separate time must be assigned to conduct research while designing curriculum?	38(82.6)	8(17.4)
Are you willing to participate in workshop on research methodology?	42(91.3)	4(8.7)
Have you presented research paper or poster in a conference?	8(17.4)	38(82.6)
Do you have knowledge of writing research paper?	6(13.0)	40(87.0)
Do you have publications in journals?	4(8.7)	42(91.3)

Various questions were asked about the perception of PG trainees about research, the resultant statistics is provided in TABLE 2. It is evident that majority of trainees were acquainted with the term research 43(93.5%) but mostly found unfamiliar with MEDLINE 34(73.9%) and never done literature search 37(80.4%). Majority knew the role of ethical review committee 35(76.1%) and the procedure of taking informed consent for research 41(89.1%). Reading of specialty relevant journals has nearly equal positive 24(52.2%) and negative responses 22 (47.8%). Equivalent percentage of agreement is visible with the mandatory inculcation of research methodology training in curriculum 41(89.1%) that will ultimately lead to improved patient outcome 41(89.1%), meanwhile

allotting separate time for research activities 38(82.6). All trainees 46(100%) agreed unanimously that conduct of research cannot be accomplished without proper supervision and majority 42(91.3%) showed positive attitude towards research and intended to take part in the related workshops. Most of PG trainees did not have publication in journals 42(91.3%), show lack of experience in writing research paper 40(87.0%) and have not put up any research paper or poster in a symposium or conference 38(82.6%).

Table 3 highlights the influence of institutional factors on the attitude of PG trainees towards research measured on a Likert scale of agreement. The factors with highest score were lack of research curriculum 21(45.7%) and lack of statistical support 20 (43.5%) which indicates that majority of the participants were of the view that institute must include research as a part of their core curriculum and the support of statistician should be available whenever required. Questions concerned with the lack of interest by the faculty was agreed by 14 (30.4%) and inadequate support by the mentors was disagreed by 15(32.6%), while 11(23.9%) trainees gave neutral response without agreeing or disagreeing with these factors. It was exhibited that faculty play an essential role in developing interest of research among trainees but still proficient knowledge and skill of faculty about research methodology was required to achieve the maximum yield as majority of the trainees 16(34.8%) disagree with the deficiency of expert faculty. Inadequate financial support from the institution to conduct research was also identified as an important contributing factor 15(32.6%). Allocation of sufficient time for research in the

training schedule was agreed and strongly agreed by majority of trainees 18(39.1%) and 10(27.1%) respectively.

The top most personal factors deterring trainees from research were identified as lack of previous exposure to research 25(54.3%), inadequate facilities to conduct research 19(41.3%) and lack of time due to heavy ward duties 18(39.1%) as evident from frequency and percentages of agreed and strongly agreed columns shown in Table 4. Overloaded curriculum also remained a major contributor to the problem 17(37.0%). It identifies that trainees perceive that they are overworked in ward duties and as they have not exposed previously to research in the past thus have not developed interest in research. Lack of interest in research revealed an equal response of trainees in terms of agreement, neutral and disagreement to the factor 12(26.1%). Majority disagreed with the question that research is a useless entity 20 (43.5%). Most of the respondents agreed that lack of self-motivation 20 (43.5%), personal or family commitments identified as main hinderer 21(45.6%) for active participation in research among married trainees (figure 2). Lack of internet experience was strongly disagreed by most of the trainees 16(34.8%). It was found that majority of the trainees who have not submitted synopsis, belongs to Gynae/ Obs specialty (26.1%), followed by Medicine and surgery (figure 3).

Personal or family commitments was main hinderer for active participation in research not only by married (61%) but unmarried trainees (35.7%) as well same is seen with lack of self-motivation which was more significant in unmarried trainees (60.7%), Fig 4 and 5.

Table 3: Institutional factors affecting the level of interest in conduction of research

Institutional factors	Strongly disagree n(%)	Disagree n(%)	Neutral n(%)	Agree n(%)	Strongly agree n(%)
Lack of interest by the faculty	6(13.0)	11(23.9)	11(23.9)	14(30.4)	4(8.7)
Inadequate support by the mentors	7(15.2)	15(32.6)	11(23.9)	12(26.1)	1(2.2)
Lack of research curriculum	1(2.2)	10(21.7)	6(13.0)	21(45.7)	8(17.4)
Inadequate financial support	1(2.2)	11(23.9)	10(21.7)	15(32.6)	9(19.6)
Lack of time	1(2.2)	10(21.7)	7(15.2)	18(39.1)	10(21.7)
Lack of statistical support	1(2.2)	10(21.7)	7(15.2)	20(43.5)	8(17.4)
Deficient faculty research knowledge and skill	3(6.5)	16(34.8)	14(30.4)	11(23.9)	2(4.3)

Table 4: Personal factors affecting the level of interest in conduction of research

Personal factors	Strongly disagree n(%)	Disagree n(%)	Neutral n(%)	Agree n(%)	Strongly agree n(%)
Lack of interest	6(13.0)	12(26.1)	12(26.1)	12(26.1)	4(8.7)
Consider research as useless	9(19.6)	20(43.5)	10(21.7)	6(13.0)	1(2.2)
Lack of time due to huge curriculum of PG subjects	2(4.3)	10(21.7)	6(13.0)	17(37.0)	11(23.9)
Lack of time due to ward duties	2(4.3)	8(17.4)	4(8.7)	14(30.4)	18(39.1)
Inadequate facilities for research	1(2.2)	10(21.7)	5(10.9)	19(41.3)	11(23.9)
Personal and social commitments like marriage, family	5(10.9)	8(17.4)	12(26.1)	17(37.0)	4(8.7)
Lack of previous exposure / knowledge	1(2.2)	6(13.0)	7(15.2)	25(54.3)	7(15.2)
Lack of internet experience	5(10.9)	16(34.8)	8(17.4)	11(23.9)	6(13.0)
Lack of mutual support and self-motivation	2(4.3)	11(23.9)	8(17.4)	20(43.5)	5(10.9)
Financial constraints	1(2.2)	12(26.1)	16(34.8)	12(26.1)	5(10.9)
Lack of interpersonal communication	2(4.3)	11(23.9)	11(23.9)	19(41.3)	3(6.5)

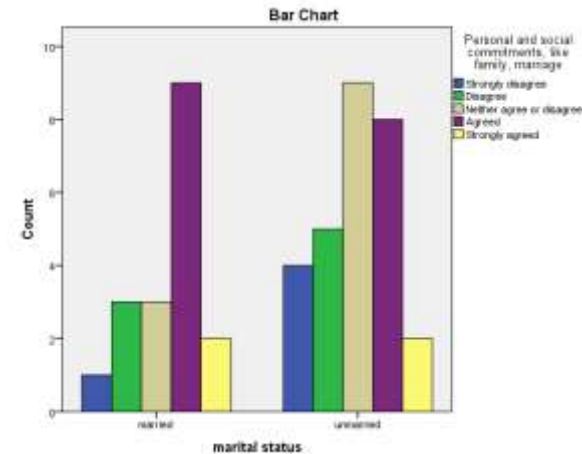


Figure 2

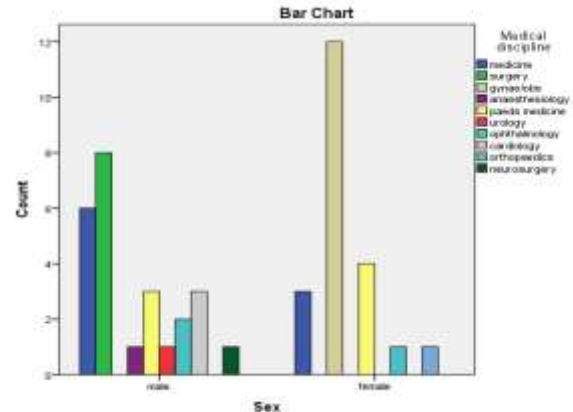


Figure-3

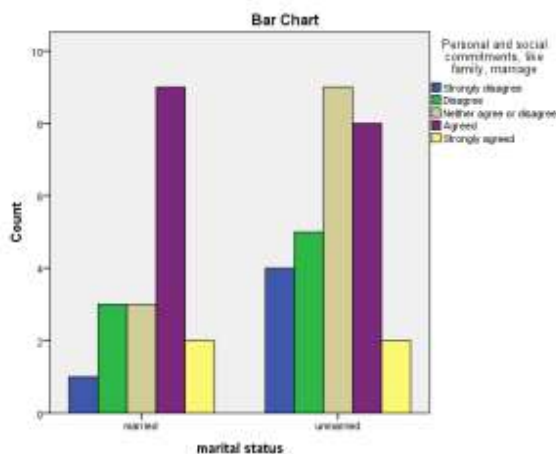


Figure 4:

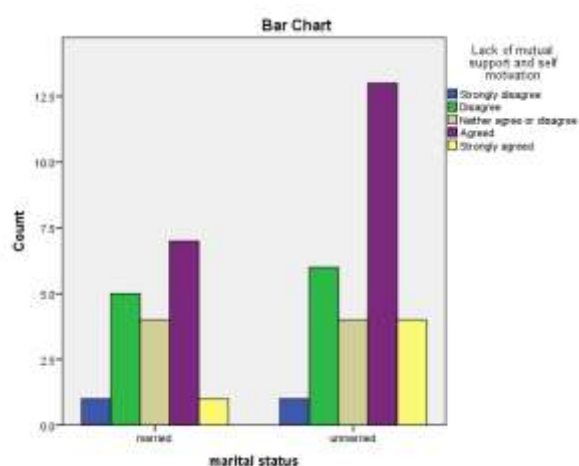


Figure 5:

DISCUSSION

In many developed countries research is being incorporated as an integral part of medical curriculum at under as well as postgraduate curriculum.^{20,21} In Pakistan, PG trainees are required to submit their research work as thesis and or in the form of dissertation being a mandatory prerequisite for their exit exam.^{22,23} But still it is being observed that this practice does not assure to develop interest to conduct clinical research in future when they will be required to serve as faculty in various institutions.^{24,25} Through this study, we intended to assess the knowledge and to probe the major contributory factors causing lack of interest in research among the postgraduate trainees of Peoples University of medical & health sciences for women Shaheed Benazir Abad. Among the approached Postgraduates, majority (92%) showed interest to participate in the study.

This study highlighted several factors impeding their interest in research as lack of research curriculum, statistical & financial support, previous exposure and poor knowledge, time shortage due to heavy duties and vast subject curriculum. Our results are analogous with Aslam et al. who indicated lack of skill (91%), lack of time (89%), lack of supervision and mentoring (86%) and lack of interest (32%) as the major barriers faced by postgraduate dentistry residents in conducting research.²⁶ Another study, exhibited that majority of post-graduate trainee doctors from various teaching hospitals in Karachi Pakistan, 78.3% required training to improve statistics skills, 54% required training in medical ethics, 53.3% in protocol writing and 45.7% in proposal writing.²⁷

Similar results were found in the study conducted by the Behera S et al. in second and third year postgraduate students, who regarded thesis writing difficult due to trouble in following up with the patients 69.2%, lack of internet access in the department 48.2%, stressful 46.2%, time consuming 44.1%, unavailability of samples / patients 42.9%, interference with clinical work 29.6%, lack of significance in clinical practice 16.6% and lack of recognition in authorship 13%.²⁸

Present study revealed that trainees think that there should be mandatory inculcation of research methodology training in curriculum along with allocation of separate and sufficient time for it, will improve their skill and practice. This is compatible with the results of Shashiraj et al. and Aslam et al., who found that conduction of research by postgraduate students helps to make indigenous solutions for local health problems, improves their career prospects, expand knowledge and quality of patient service.^{29, 30} All respondents agreed consistently that conduct of research cannot be accomplished without proper supervision and mandatory training for research methodology must be made mandatory for postgraduate trainees because it improves knowledge and skill which is consistent with the study conducted by Sabzwari S et al. which showed that physicians with the prior research training were more likely to participate in research.³¹

In current study it was found that majority of the trainees who have not submitted synopsis, belongs to Gynaec/ Obs specialty (26.1%), followed by Medicine and surgery. It was attributed to heavy ward duties by 90% respondents. The same is also found in the results of Shahab et al. that awareness (23.75%) and involvement (17.5%) in research was less in female students though they show more interest in doing research (91.25%).³² Our study also shows that though female constitute only 45.7% of the total participants but still they hold the highest percentage in discipline wise distribution of respondents. In current study it was found that very few trainees had published a research paper (17.4%) or presented a research poster in a conference (8.7%), nearly same result was shown by Aslam et al., among postgraduate residents in dentistry to assess current productivity in research and research challenges, the result revealed that 32.7% published paper(s), few (17.7%) delivered oral lecture and 28% participated in poster presentation in any conference.²⁶

In the present study, we reported significant problem in time management was due to heavy ward duties and vast theoretical curriculum was one of the most cited issue among the other mentioned factors. This finding was also similar to that found in the study of Kyaw et al. and Giri et al, who identified that lack of time due to vast curriculum of PG subjects as a major barrier for research in PG trainees (59.5%).^{33, 34} Our study found that reading of specialty related journal was found in 52.2% and interest in literature search was limited to only 19.6% trainees. This result is also consistent with the study conducted by Waqar et al. where result revealed that 15% of postgraduate residents (PGRs) had never ever read a medical journal. None of them read a medical journal on daily basis and 43 % did not know how to do literature search.³⁵

In accordance with our study lack of internet experience and inadequate support from mentors were also found to affect the interest of trainees in research but not to a significant level 34.8%. Same was found in the study conducted by Sheikh et al. that though inexperience in computer and internet or non-availability of mentor encumbers the growth in research and research-oriented careers but do not essentially affect the level of interest of students in research activities.³⁶ This study identified personal or family commitments as main hinderer for active participation in research not only by married (61%) but unmarried trainees (35.7%) as well same is seen with lack of self-motivation which was more significant in unmarried trainees (60.7%). In the study conducted by Saeed et al., lack of motivation was observed in 85.9% unmarried residents and statistically significant correlation was found between marital status of postgraduate trainees and family/social commitments among 84.8% married residents.³⁷

Neena et al. identified that there was significant statistical difference in the nonclinical disciplines having higher extrinsic motivation as compared to the postgraduate students of clinical branches ($t = 2.886$, $P = 0.004$) same was also reflected in the total score on motivation scale ($t = 2.92$, $P = 0.0024$) though no major differences were seen in the intrinsic motivation subscale.³⁸

From the results of the current study, it is recommended that regardless of the factors involved in the lack of interest shown by trainees in clinical research, it is important to internally motivate them and to create and foster an environment suitable and fertile for the conduct of research that will ultimately influence their self-efficacy and positively affect their academic performance. The institutional environment can be transformed by organizing workshops on innumerable aspects of research such as study design, statistical methods, scientific misconduct, ethics etc., arranging regular journal clubs, assigning group research projects and inculcating research into the main curriculum. This will indeed bring an era of change in our local milieu and will encourage trainees to continue the practice of research in their clinical practice also.

Limitations of Study: This was a single center-based study conducted in a public sector women university; thus, results cannot be generalized. Validity and Reliability would have been jeopardized due to purposive sampling and the small sample size as only second and third year PG trainees were included in this research. Therefore, to make causal relation-based recommendations a multicenter detailed study design is required.

CONCLUSION

Majority of the participants had some knowledge about research and its positive impacts on clinical practice. Factors identified to cause lack of interest included lack of research curriculum, statistical support, time, previous knowledge, financial and family issues.

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Author's Contribution: TR is responsible for the generation of idea, literature search, conduct of study, statistical analysis of data and drafting of manuscript. Final draft is read and approved before submission.

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