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ORIGINAL RESEARCH

Knowledge, Attitude, and Practices in Research among Postgraduate Students in Dental Schools of Udaipur, Rajasthan, India

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ABSTRACT

Introduction: "Research" is obtained from the French word "recherche," intending to approach seeking.[1] In its broadest sense, it signifies "any gathering of information, data and facts for the progression of learning" and characterized as "a studious request or examination aimed at the discovery and interpretation of facts."[2]

Objective: This study was carried out to assess the knowledge, attitude, and practices toward dental research among the postgraduate (PG) students in dental schools of Udaipur city, Rajasthan.

Materials and methods: A cross-sectional study was conducted among 133 PGs of two recognized dental schools offering PG courses in Udaipur city, Rajasthan, during the period between November and December 2016. A pretested, structured questionnaire was developed based on our study objectives, taking guidance from the previous literature.

Results: In the present study, 27.7% from second year and 45.6% from third year PGs know the definition of research hypothesis, and this difference was statistically significant ($p < 0.05$). The difference in research practice of second and third year PG students was statistically significant for all parameters except presented poster or research paper in a conference and experience in writing research protocols. The lack of time due to vast curriculum of PG students (37.7%) and lack of interest (36.6%) were the personal reasons, and lack of time (28.1%) and inadequate support by mentors/assistant (23.5%) were among the institutional reasons for not conducting research.

Conclusion: In the present study, it was found that PG students had lack of knowledge of dental research. They had positive attitude toward research, with the third year having a more positive attitude, yet they neglected to change their learning and attitude in real practices because of lack of time and inadequate support by mentors and assistants.

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INTRODUCTION

"Research" is obtained from the French word "recherche," intending to approach seeking.[1] In its broadest sense, it signifies "any gathering of information, data and facts for the progression of learning" and characterized as "a studious request or examination aimed at the discovery and interpretation of facts."[2]

In the field of dentistry, advance and extension of learning through research are going on at an astronomical pace, although in India, research is not given the most elevated significance in instruction and in educational programs, as there is gross lack of assets, both cash and manpower.[3] In human service sciences, understanding biostatistics may have critical proof-based symptomatic and treatment application. Likewise, in academics, adequate information of epidemiological standards is required to effectively lead a review and accurately obtain information from clinical examinations.

Cognizance of biostatistics and standards of research configuration is imperative for writing assessment and evidence-based practice in dentistry and also for scientists wishing to have their publications acknowledged by international journals.[4] Subsequently, a fundamental comprehension for standards of research outline and biostatistics is included in the postgraduate (PG) educational module by the Dental Council of India for every subject.[5]

Dental students in India are educated to excel hypothetically; however, there seems to be a separate module between what is knowledgeable and what is applied in the clinics. A portion of the progressions that may convey dental education to the following level in India

could incorporate selecting highly energetic students for dentistry, altering the teaching methodology with some significance given to treatment planning, and bringing research into educational modules. Research has changed the face of dentistry and obviously exchanged the act of dentistry in recent years.[6] Till now, studies have been led to record the information of health care experts on biostatistics and the study of disease transmission, and additionally to recognize affecting factors.[7]

However, similar information among dental professionals are deficient. It is felt that the existing level of knowledge and awareness among the second- and third-year PG students who have conducted/are conducting at least one research study for their dissertation should be evaluated. The reason for this cross-sectional study was to survey the research-related knowledge, attitude, and practice among the PG students in dental schools of Udaipur city, Rajasthan. Furthermore, this study also points out the difficulty and the reasons for not conducting the research by the PG students amid their PG course while completing the research.

MATERIALS AND METHODS

Study Design, Area, and Population

A cross-sectional study was conducted among 133 PGs of two recognized dental schools offering PG courses in Udaipur city, Rajasthan, during the period between November and December 2016.

Official Permission and Ethical Clearance

Ethical approval and official permission were obtained from the Ethical Committee of Pacific Dental College and Hospital. Permission was obtained from the concerned authorities and the principal of the respective colleges.

Informed Consent

A written informed consent was obtained from the study subjects.

Inclusion Criteria

Second- and third-year PG students from all the specialties.

Exclusion Criteria

- Undergraduate students and interns were excluded as they do not conduct research regularly.
- First-year PG students were excluded as they do not have experience of writing research protocol for their dissertation and scientific presentation.

Data Collection Tool

A pretested, structured questionnaire was developed based on our study objectives, taking guidance from the previous literature.[8,9]

The questionnaire consisted of several parts. The first part pertained to a collection of demographic information of the PGs: Age, gender, specialty, year of postgraduation, and marital status.

The questions in the second part of the questionnaire assessed the PGs' knowledge, attitude, and practices about dental research among study population. The answers required a dichotomous response of yes and no.

The third part of questionnaire addressed questions related to reasons among PG students for not conducting research. The PGs were asked to choose the options which apply to them the most.

Sample Size

In Udaipur city, it was found that only two dental schools offer PG courses. The total number of second- and third-year PG students was found to be 142 in two dental schools in Udaipur city, out of which 5 students were absent on the day of conducting study and 4 students gave incompletely filled questionnaire, who were excluded from the study. So, the final sample size came to be 133.

Survey Methodology

The questionnaire was distributed to the second- and third-year PG students and further informed about the purpose and methods of the study. Ten to fifteen minutes was taken by the PGs to complete the questionnaire. Filled questionnaire proforma was collected and analyzed.

Statistical Analysis

The data were entered in the Microsoft Excel spreadsheet and processed using Statistical Package for the Social Science version 20 (Inc. Chicago, Illinois, USA). Statistical difference between second- and third-year knowledge, attitude, and practices was analyzed using chi-square test. Descriptive statistics was used, including frequency and percentages of reasons among PG students for not conducting research.

RESULTS

Table 1 shows demographic distribution of second- and third-year PG students. Among the study population, 40.5% respondents were males and 46.4% females; 38.6% were in the age group 26 to 28 years, followed by 29.4% in the age group >29 years. Majority (66.0%) of the PG students belonged to clinical departments, while only 20.9%

Table 1: Demographic distribution of study subjects (n = 133)

Demographic variable	*Number (n%)*
Age (in years)	
23–25	29 (19%)
26–28	59 (38.6%)
>29	45 (29.4%)
Sex	
Male	62 (40.5%)
Female	71 (46.4%)
Specialty	
Clinical	101 (66%)
Pre–paraclinical	32 (20.9%)
Year of PG	
Second year	65 (42.5%)
Third year	68 (44.4%)
Marital status	
Married	25 (16.3%)
Unmarried	108 (70.6%)

were from pre- and paraclinical departments. Among the study group, 42.5% students were in their second year, while 44.4% were from third year.

Table 2 shows comparison between second- and third-year PG students in each item of knowledge on research methodology. Assessment of research-related knowledge was done using a set of five questions in the questionnaire, which was answered on a dichotomous scale.

Moreover, 27.7% from second- and 45.6% from third-year PGs knew the definition of research hypothesis, and this difference was statistically significant ($p < 0.05$); 13.8% from second-year and 44.1% from third-year PGs knew from whom to seek approval for conducting clinical research using new drugs in India, and this difference was statistically significant ($p < 0.05$); 49.2% from second- and 95.6% from third year knew when should consent for a trial be obtained, and this difference was statistically significant ($p < 0.05$).

Table 3 shows comparison between second- and third-year PG students in each item of attitude on research methodology. It was observed that the difference was not statistically significant for all parameters ($p > 0.05$).

Table 4 shows comparison between second- and third-year PG students for each item of practices on research methodology. The difference in research practice of second- and third-year PG students was statistically significant for all parameters except presented poster or research paper in a conference and experience in writing research protocols.

Table 5 shows the frequency distribution of reasons among PG students for conducting research. The lack of time due to vast curriculum of PG students (37.7%) and lack of interest (36.6%) were the personal reasons, and

Table 2: Comparison between second- and third-year PG students in each item of knowledge on research methodology

Items	*Response*	*Second year n (%)*	*Third year n (%)*	*Total n (%)*	*p-value*
Do you know the definition of research hypothesis?	Yes	18 (27.7%)	31 (45.6%)	49 (36.8%)	0.032*
	No	47 (72.3%)	37 (54.4%)	84 (63.2%)	
Do you know the full form of MEDLINE?	Yes	20 (30.8%)	27 (39.7%)	47 (35.3%)	0.281
	No	45 (69.2)	41 (60.3%)	86 (64.7%)	
Do you know the full form of MEDLARS?	Yes	20 (30.8%)	28 (41.2%)	48 (36.1%)	0.212
	No	45 (69.2%)	40 (58.8%)	85 (63.9)	
From whom to seek approval for conducting clinical research using new drugs in India?	Yes	9 (13.8%)	30 (44.1%)	39 (29.3)	0.000*
	No	56 (86.2%)	38 (55.9%)	94 (70.7)	
When should consent for a trial be obtained?	Yes	32 (49.2%)	65 (95.6%)	97 (72.9%)	0.000*
	No	33 (50.8%)	3 (4.4%)	36 (27.1%)	

*$p < 0.05$ significant

Table 3: Comparison between second- and third-year PG students in each item of attitude on research methodology

Items	*Response*	*Second year n (%)*	*Third year n (%)*	*Total n (%)*	*p-value*
Should training for research methodology be made compulsory for PG students?	Yes	56 (86.2%)	64 (94.1%)	120 (90.2%)	0.122
	No	9 (13.8%)	4 (5.9%)	13 (9.8%)	
Does patient outcome improve with continued dental research?	Yes	52 (80.0%)	50 (73.5%)	102 (76.7%)	0.378
	No	13 (20.0%)	18 (26.5%)	31 (23.3%)	
Do PG students need guidance and supervision to conduct research project?	Yes	62 (95.4%)	63 (92.6%)	125 (94.0%)	0.507
	No	3 (4.6%)	5 (7.4%)	8 (6.0%)	
Should research time be allotted separately while planning PG curriculum?	Yes	60 (92.3%)	66 (97.1%)	126 (94.7%)	0.220
	No	5 (7.7%)	2 (2.9%)	7 (5.3%)	
Undertaking research increases burden for PGs?	Yes	63 (96.9%)	68 (100%)	131 (98.5%)	0.145
	No	2 (3.1%)	0	2 (1.5%)	

*$p < 0.05$ significant

Table 4: Comparison between second- and third-year PG students in each item of practices on research methodology

Items	*Response*	*Second year n (%)*	*Third year n (%)*	*Total n (%)*	*p-value*
Are you reading journals regularly?	Yes	31 (47.7%)	19 (27.9%)	50 (37.6%)	0.019*
	No	34 (52.3%)	49 (72.1%)	83 (62.4%)	
Are you willing to participate in workshop on research methodology?	Yes	29 (44.6%)	61 (89.7%)	90 (67.7%)	0.000*
	No	36 (55.4%)	7 (10.3%)	43 (32.3%)	
Do you have publications in journals?	Yes	29 (44.6%)	36 (55.4%)	90 (67.7%)	0.000*
	No	66 (97.1%)	2 (2.9%)	43 (32.3%)	
Have you presented poster or research paper in a conference?	Yes	61 (93.8%)	4 (6.2%)	49 (36.8%)	0.145
	No	68 (100%)	0	84 (63.2%)	
Do you have experience of writing research paper?	Yes	37 (56.9%)	47 (69.1%)	84 (63.2%)	0.145
	No	28 (43.1%)	21 (30.9%)	49 (36.8%)	

*$p < 0.05$ significant

Table 5: Frequency distribution of reasons among PG students for not conducting research

Items	*Response n (%)*
Personal reasons	
Lack of interest	56 (36.6)
Lack of time due to vast curriculum of PG students	58 (37.9)
Inadequate facilities for research	10 (6.5)
Other personal commitments like marriage and family	9 (5.9)
Institutional reasons	
Lack of interest by the faculty/guide	33 (21.6)
Inadequate support by mentors/assistants	36 (23.5)
Lack of research curriculum	14 (9.2)
Inadequate financial support	7 (4.6)
Lack of time	43 (28.1)

lack of time (28.1%) and inadequate support by mentors/assistant (23.5%) were among the institutional reasons for not conducting research.

DISCUSSION

A fundamental commonality with research methods is basic for capable medical and dental practice. The most ideal approach to take part in research projects is either as a medical or dental student.[10] Hence, it is vital for the PGs to know about research methodology and essential learning of biostatistics.

The present study was led to assess knowledge, attitude, and practices in research among PG students in dental schools of Udaipur city. The general goal was to recognize areas where accentuation ought to be put in PG educational module.

The study was aimed for all PGs irrespective of their specialties, as fundamental information of research strategy is necessary for all specialties. It is in accordance with results from a current survey where the statistical knowledge of dental PG students was not affected by the educational modules of a specific dental specialty. Since there is no more previous study done in dental students, comparison could not be made with more previous literature in dentistry, hence it has been made with similar studies done in the medical literature.

In the present study, out of 133 participants, 62 were males and 71 were females, 101 from clinical branches and 32 from pre/para clinical branches, 65 from second year and 68 from third year, 25 were married and 108 were unmarried.

In the present study, various questions were asked from the participants. Lesser number of participants (36.8%) knew the definition of research hypothesis. This was in accordance with the studies done by Giri et al,[11] Rani and Priya,[12] and Sharma et al,[13] while another study done by Pawar et al[9] showed higher number of participants (58.0%) knew the definition of research hypothesis.

In the present study, majority of participants (64.7%) did not know the full form of MEDLINE. This was in accordance with the study done by Giri et al[11] and Pawar et al,[9] while other study done by Sharma et al[13] was not in agreement to our study. In the present study, higher number of participants (63.9%) did not knew the full form of MEDLARS. This was in accordance with the study done by Giri et al[11] where 82.0% participants did not knew the full form of MEDLARS.

Our study revealed majority of participants, i.e., 70.7%, did not know from whom to seek approval for conducting clinical research using new drugs in India. This was in accordance with the study done by Giri et al[11] and Rani and Priya,[12] while other studies Sharma et al[13] and Pawar et al[9] gave opposite results. In our study, higher number of participants (72.9%) knew when should consent for trial be obtained. This was in accordance with the study conducted by Rani and Priya,[12] Pawar et al,[9] and Sharma et al.[13] All the associations were found significant except: Do you know the full form of MEDLINE and MEDLARS? where significant results were not found.

In the present study, maximum numbers of participants (90.2%) were willing to train in research methodology if made compulsory for PG students. Similar results

were found in the studies done by Giri et al[11] and Pawar et al,[9] while another study conducted by Sharma et al[13] was not in accordance with the present study.

The present study stated that higher numbers of participants (76.7%) were willing in patient outcome improvement with continued dental research. This was in accordance with the study conducted by Giri et al[11] and Pawar et al,[9] but not in accordance with the study done by Sharma et al.[13] Our study revealed higher number of participants (94.0%) needed guidance and supervision to conduct research project, and similar findings were seen in study conducted by Giri et al[11] and Rani and Priya.[12]

In the present study, higher numbers of participants (94.7%) were interested in conducting research while doing PG. This was in accordance with the study done by Giri et al[11] and Sharma et al.[13] Our results revealed that almost all the participants thought that undertaking research increases burden for PGs. This was in accordance with the study conducted by Pawar et al.[9] All these associations were found statistically not significant.

Our study revealed that lesser number of participants (37.6%) read journals regularly. Similar finding is found in a study done by Pawar et al,[9] while the study conducted by Sharma et al[13] was not in accordance with the present study.

The present study concluded that maximum number of participants (67.7%) were willing to participate in workshop on research methodology. This was in accordance with studies conducted by Giri et al,[11] Rani and Priya,[12] Sharma et al,[13] and Pawar et al.[9]

The present studies revealed that higher number of PGs have publications in journals. Similar studies done by Giri et al[11] and Pawar et al[9] were in contradiction with our study.

In the present study, lesser number of participants (36.8%) have presented poster or research paper in conference. This was in accordance with the studies done by Rani and Priya,[12] Giri et al,[11] and Pawar et al.[9]

The present study showed that higher number of participants have experience of writing research paper. This was not in accordance with the study conducted by Sharma et al,[13] Pawar et al,[9] and Rani and Priya.[12]

All these associations were found statistically significant except presented poster or research paper in a conference and experience of writing research paper.

In the present study, PG students reported significant barriers impeding research, lack of time due to vast curriculum of PG students, and lack of interest. This was in accordance with the study conducted by Giri et al,[11] AlGhamdi et al,[14] and Pawar et al.[9] Another study conducted by Sharma et al[13] revealed contrasted results due to inadequate financial facilities for research.

Our results showed that higher number of participants reported lack of interest by faculty/guide, inadequate support by mentors/assistant, and lack of time are obstacles for research. Those findings were in accordance with the study conducted by Sharma et al,[13] while contrasting results were found in studies conducted by Giri et al[11] and AlGhamdi et al.[14]

LIMITATIONS

This study involved only two dental schools, further limiting the generalization of our results. We could not include the questions that reflected a broad range of topics in the research for evaluation of the knowledge aspect of dental PG students.

CONCLUSION

In the present study, it was found that PG students had lack of knowledge of dental research. They had positive attitude toward research among the third years, having a more positive attitude, yet they neglected to change their learning and attitude in real practices due to lack of time and inadequate support by mentors and assistants.

RECOMMENDATION

There is a need to encourage PG students to carry out research through arrangement of specialized help and fundamental foundation amid their PG training program, and research component should be made a fundamental necessity in the undergraduate dental educational modules and also to frame strong foundation. Postgraduates must be encouraged to take interest in workshops on research methodology to give a superior point of view of dental research.

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