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Knowledge Attitude and Practices Towards Research among Post Graduate Students and Teachers in Dental Colleges in Patna – An Institutionalized Survey

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Abstract

Introduction: Research is a process which involves systematic inquiry that entails collection of data; documentation of critical information; analysis and interpretation of that data/information in accordance with suitable methodologies set by specific professional fields and academic disciplines.

Objective: The main objective of the study to assess the knowledge, attitude and practices towards research among post graduate students and teachers in dental colleges in Patna and to compare the associations if any between the variables considered above.

Methodology: A cross-sectional survey using convenience sampling technique was used. A total of 160 study subjects (both post graduates and teachers) were involved in the study. Pre-validated, close-ended, self-administered questionnaire consisting of 40 questions was used. The means and standard deviations of the measurements per group were used for statistical analysis. Difference between two groups was determined using chi square test and the level of significance was set at $p < 0.05$.

Results: In the present study, the concept of research hypothesis was known to 46.9% of participants and 63.7% were aware about different types of study design. Majority (96.9%) of participants believed that research help in the improving ones curriculum vitae and 71.2 % are willing participate in workshop on research methodology.

Conclusion: An overall picture of knowledge, attitude and practices towards research seems to be very promising. However, frequent reinforcement of the same can lead to better research which can contribute to newer knowledges.

Keywords: Research, Knowledge, Attitude, Practice

Introduction

Research is a critical determinant of educational quality in contemporary pedagogical frameworks. Quality education in modern teaching relies heavily on research-driven approaches. Progress of any society in terms of economic, technologic and intellectual aspects are heavily influenced by these factors, thus research is being measured as the most worthy asset in the modern world of education.[1]

Dental research in the Indian setting is in the developing stages even though we have more than 300 dental colleges, which is higher than many countries in the world. This comprises an extensive number of oral health care professionals, who can make a considerable impact in the advancement of the dental research situation in India.[2]

Scientific research is a systematic, empirical, and objective inquiry aimed at generating new knowledge or validating existing knowledge through the collection, analysis, interpretation, and evaluation of data. Research experience has been shown to have a strong correlation with postgraduate research outcomes and career advancement. Research in the field of health care is useful in the development of diagnosis, treatment and prevention of diseases and also influences the healthcare policies.[3]

A review of literature showed that the data regarding knowledge, attitudes, and practices toward Research among postgraduate students and teachers in India, is very limited. Even though it exists there is differences in perceptions. It is felt that the existing level of knowledge and awareness among the postgraduate students and teachers who have already conducted / are conducting at least one research study for their dissertation should be evaluated. Thus, the present study was aimed to undertake an institutionalized cross-sectional survey to assess the knowledge, attitude, and practices towards research of postgraduate students and teachers in Dental colleges in Patna, Bihar.

Materials and Methodology

A descriptive cross-sectional questionnaire survey conducted among post-graduate students and teachers of various dental colleges of Patna, Bihar. The aim of the study was to assess the knowledge, attitude and practices towards Research among post graduate students and teachers in dental colleges in Patna. This study protocol was reviewed and approved by the Ethics committee of Buddha Institute of Dental Sciences and Hospital, Patna and clearance was obtained (Ref, No. 449/BIDSH).

A survey was systematically scheduled to spread over a period of one month in July 2023. The total sample size was 160 in which 70 were postgraduate students and 90 were teachers. Convenience sampling method was used. Informed Consent was obtained from all from the participants before the start of the study. Post-graduate students and teachers of various dental colleges of Patna who were present on the day of survey were included in the survey. Students and teachers who were not willing/consent to fill the questionnaire were excluded.

Data Collection: The purpose of the study was explained to the participants, following which the questionnaires were distributed. A pre-validated, close-ended, self-administered questionnaire with 40 questions was administered to each participant in person. The questionnaire consisted of 2 sections. First section consisted of questions regarding demographic information and second section consisted of questions regarding knowledge, attitude and practices toward Research were recorded.

Statistical Analysis: The obtained data were compiled into a Microsoft Excel spreadsheet and analyzed using the Statistical Package for the Social Sciences (SPSS)

version 22.0 (SPSS Inc., Chicago, IL, USA). The obtained data were tabulated and subjected to descriptive statistical analysis. The means and standard deviations of the measurements per group were used for statistical analysis. Difference between two groups was determined using Chi-square test and the level of significance was set at $p < 0.05$.

Results

In the present study among 160 study participants, 70 (43.6%) and 90 (56.4%) were post graduate students and teachers respectively. The overall total average age of the study population was 34.41±4.77 years and the average age group among post graduate students were 27.87±3.03 years and 40.94±6.77 years was the average age of teachers.

Knowledge of the study participants regarding Research [Table 1] showed that 75 (46.9%) of study subjects who gave correct response that "Research Hypothesis" is an answer or solution to a question which has a capacity of verification or empirical demonstration, 23 (32.9%) were post graduate students and 52 (57.8%) were teachers. Knowledge regarding different types of scales used in Research, out of 132 (82.5%) of study participants who gave positive response, 55 (78.6%) were post graduate students and 77 (85.6%) were teacher. Regarding the most common study designs used in Research, out of 102 (63.7%) of study subjects who gave correct response in which 36 (51.4%) were post graduate students and 66 (73.3%) were teachers. Out of 144 (90%) of study participants who answered correctly that 'Indian Council of Medical Research' regulates or guides research activities in India, 57 (81.4%) were post graduate students and 87 (96.7%) were teachers. Knowledge about medical search engines, out of 127 (79.4%) of study participants answered correctly in which 48 (68.6%) were post graduate students and 79 (87.8%) were teachers. Overall the knowledge of teachers regarding research were better on many aspects and all the results were statistically significant when compared to post graduate students.

Attitude and Practices of the study participants towards Research showed overall positive response [Table 2]. Regarding attitude towards research, out of 155 (96.9%) of participants believed that research help in the improving ones curriculum vitae in which 65 (92.9%) were post graduate students and 90 (100%) were teachers. Out of 155 (97.5%) of study subjects agreed that research contribute to innovations in medical field in which 66 (94.3%) were post graduate students and 90 (100%) were teachers. Out of 57 (35.6%) of study subjects who gave positive response regarding whether they felt that conducting research is an extra burden to the students, 41 (58.6%) were post graduate students and 16 (17.8%) were teachers. Thus, the overall study participants showed positive attitude towards research and it was statistically significant.

Regarding whether they ever participated in any scientific research activities in the past. An overall 88.7% of the subjects gave positive response in which 65.7% and 97.8% were post graduate students and teachers respectively. When the results were statistically compared between post graduate students and teachers of dental colleges, it was found to be significant with p value <0.01. Regarding whether they were willing to participate in workshop on research methodology, overall 71.2% of the subjects gave positive response in which 65.7% and 75.6 % were post graduate students and teachers respectively and it was found to be non-significant with p value 0.19. thus, the overall positive response were seen regarding practice towards Research.

Table 1: Distribution of subjects according to their Knowledge regarding Research

Questions	PG n (%)	Teacher n (%)	Total n (%)	P value
Q.4 Do you know what is 'Research Hypothesis'?				
a. A proposed idea or thought	29 (41.4%)	30 (33.3%)	59 (36.9%)	0.001*
b. An answer or solution to a question	1 (1.4%)	0 0	1 (0.6%)	
c. An answer or solution to a question which has a capacity of verification or empirical demonstration	23 (32.9%)	52 (57.8%)	75 (46.9%)	
d. Logical deduction of the premises that may or may not be verified empirically	3 (4.3%)	5 (5.6%)	8 (5%)	
e. Don't Know	14 (20%)	3 (3.3%)	17 (10.6%)	
Q.9 Do you know that different types scales are used to measure in Research?				
a. Nominal	1 (1.4%)	6 (6.7%)	7 (4.4%)	0.003*
b. Ordinal	2 (2.9%)	0	2 (1.2%)	
c. Ratio scale	0	4 (4.4%)	4 (2.5%)	
d. Interval	0	0	0	
e. All of the above	55 (78.6%)	77 (85.6%)	132 (82.5%)	
f. Don't know	12 (17.1%)	3 (3.3%)	15 (9.37%)	
Q.13 Most common study designs include?				
a. Descriptive study design	15 (21.4%)	14 (15.6%)	29 (18.1%)	0.002*
b. Analytical study design	0	3 (3.3%)	3 (1.9%)	
c. Experimental study Design	5 (7.1%)	4 (4.4%)	9 (5.6%)	
d. All of the above	36 (51.4%)	66 (73.3%)	102 (63.7%)	
e. Don't Know	14 (20%)	3 (3.3%)	17 (10.6%)	
Q.17 Who guides or regulates research activities in India?				
a. Indian Council of Medical Research	57 (81.4%)	87 (96.7%)	144 (90%)	0.009*
b. Dental Institutions	4 (5.7%)	0	4 (2.5%)	
c. International Bodies like WHO	2 (2.9%)	0	2 (1.2%)	
d. Don't Know	7 (10%)	3 (3.3%)	10 (6.2%)	
Q.22 Do you know any medical search engines?				
a. Medline	4 (5.7%)	2 (2.2%)	6 (3.7%)	0.043*
b. Pubmed	7 (10%)	4 (4.4%)	11 (6.9%)	
c. Ebsco	9 (12.9%)	5 (5.6%)	14 (8.7%)	
d. All of the above	48 (68.6%)	79 (87.8%)	127 (79.4%)	
e. Don't Know	2 (2.9%)	0	2 (1.2%)	

*: statistically significant

Table 2: Distribution of subjects according to their Attitude & Practices regarding Research

Questions	PG			Teacher			Total			P value
	Yes	No	Don't know	Yes	No	Don't Know	Yes	No	Don't Know	
	N (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	
Attitude										
Q.6 Does research help in the improving ones curriculum vitae?	65 (92.9%)	4 (5.7%)	1 (1.4%)	90 (100%)	0	0	155 (96.9%)	4 (2.5%)	1 (0.6%)	0.036*
Q.7 Does research contribute to innovations in medical field?	66 (94.3%)	4 (5.7%)	0	90 (100%)	0	0	156 (97.5%)	4 (2.5%)	0	0.022*
Q.9 Do you feel conducting research is an extra burden to the students?	41 (58.6%)	29 (41.4%)	0	16 (17.8%)	71 (78.9%)	3 (3.3%)	57 (35.6%)	100 (62.5%)	3 (1.9%)	<0.01*
PRACTICES										
Q1 Have you ever participated in any scientific research activities in the past?	46 (65.7%)	23 (32.9%)	1 (1.4%)	88 (97.8%)	0	2 (2.2%)	134 (83.7%)	23 (14.4%)	3 (1.9%)	<0.01*
Q.6 Are you willing to participate in workshop on research methodology?	46 (65.7%)	20 (28.6%)	4 (5.7%)	68 (75.6%)	15 (16.7%)	7 (7.8%)	114 (71.2%)	35 (21.9%)	11 (6.9%)	0.19

*: statistically significant

Discussion

Knowledge

The present study has provided information about the knowledge, attitude and practices of postgraduate students and teachers in dental colleges towards research based on information collected.

The present study was conducted among 160 (100%) subjects in which 70 (43.6%) were post graduate students and 90 (56.4%) were teachers. The average age of post graduate students and teachers were 27.87years (SD±3.03) and 40.94 years (SD±6.77) respectively. Similarly, the study conducted by Mahtab Memarpour et.al., reported the mean age of postgraduates were 27.85 ± 3.06 years.

In the present study, lesser number of participants (46.9%) in which post graduate students and teachers were 32.9% and 57.8% respectively correctly defined 'Research Hypothesis'. This was in accordance with the studies done by N. Bhat et. al., P A Giri et.al., Rani and Priya, and N Sharma et. al., while another study done by D B Pawar et.al., showed higher number of participants

(58.0%) knew the definition of research hypothesis. In the present study, out of 132 (82.5%) of participants, post graduate students and teachers were 78.6% and 85.6% respectively were aware of different types of scales used in Research. In the study conducted by Hassan Khan et.al., showed that 56.7% of post graduate trainees correctly responded that a scale from 1to 5 is called Ordinal scale. In contrast, the study conducted by V Mehrotra et. al., only 36% of post graduate students were correctly responded that ordinal scale ranges from 0 to 5.

Also, our study showed, out of 96.9% of participants, post graduate students (92.9%) and teachers (100%) were aware that Research has many study designs. Out of 63.7% of participants, post graduate students (51.4%) and teachers (73.3%) were aware about most common study designs. Similarly, the study conducted by W. Yousuf et.al., reported that 87% of participants have a basic idea of different study designs.

Our study revealed that, higher number of the participants (90%), post graduate students (81.4%) and teachers (96.7%) aware that ICMR guides research activities in India. Also, similar finding was shown by N Bhat et.al., N Sharma et. al., and V Mehrotra et.al. in accordance of it. In contrast the study conducted by Rani and Priya showed that (57.8%) of participants aware about ICMR.

Our study showed that 79.4% of participants in which post graduate students (68.6%) and teachers (87.8%) were aware about different medical search engines. This was in accordance with the study done by H Khan et.al., Bhat et.al., Pawar et.al., and Giri et.al.

Attitude & Practices

Our study showed that maximum of the participants (96.9%) in which post graduate students (92.9%) and teachers (100%) agreed that research help in improving ones curriculum vitae. The study conducted by D B Pawar et.al., and V Mahrotra et.al., showed similar results in accordance of it. This study showed that maximum of the participants (97.5%) in which post graduate students (94.3%) and teachers (100%) agreed that research contribute to innovations in medical field. The study conducted by Giri et al., D B Pawar et.al., and N Bhat et.al., showed results in accordance of it. Our study showed that lesser number of the participants (35.6%) in which post graduate students (58.6%) and teachers (17.8%) felt that conducting research is an extra burden to the students. Also, study conducted by H Khan et.al., revealed similar results.

Regarding the practices our study showed that maximum number of participants (83.7%) in which post graduate students (65.7%) and teachers (97.8%) participated in scientific research activities in past. The study conducted by H Khan et.al., (52.3%) and W Yousuf et.al., (66%)revealed similar results. In contrast the study conducted by Priya and Rani showed only 9.3% of participants participated in scientific research activities in past.

The present study stated that maximum number of participants (71.2%) in which post graduate students (65.7%) and teachers (75.6%) willing to participate in workshop on research methodology. The study conducted by N Bhat et.al., (67.7%), Giri et.al., (70%) and Pawar et.al., (64%), also reported similar results. Also, the study conducted by Mehrotra et.al.,(30.1%) showed lesser number of participants willing to participate in workshop on research methodology.

Conclusion

In the present study, it was found that, more efforts are needed to facilitate scientific research. Our study showed a significant difference of knowledge about research in between post graduate students and teachers. Teachers

had a better knowledge on many aspects and the results were significant when compared to post graduate students. However, attitude and practices towards research was positive among post graduate students and teachers. Most of the participants had a high level of knowledge, positive attitude and a low level of practice towards scientific research. There is need to be encourage research activity among post graduate students by organizing more workshops and training programmes on research methodology . An overall picture of knowledge, attitude and practices towards research seems to be very promising. However, frequent reinforcement of the same can lead to better research which can contribute to newer knowledges.

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