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Knowledge, Attitude, Practice, Motives And Barriers Towards Scientific Research Among Dentists And Dental Students In Chennai

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ABSTRACT

Research is crucial for the scientific progress of the health of individuals, communities and systems. The aim of the study was to assess the level of knowledge, attitude,motives and barriers among dentists and dental students in Chennai city.

Materials and methods

A cross-sectional study of hundred dentists and dental students from dental colleges in Chennai. A pre-validated self report questionnaire containing 15 question items to collect data and assess the level of knowledge,attitude, practice towards scientific research.Statistical analysis was performed in SPSS software version-23. Descriptive and inferential statistics were performed.

Results

The results showed that 28% of dentists and 59% of dental students said that research is mandatory. Among the participants 13% of dentists and 16% of dental students have participated in research in their college, 12% of dentists and 19% of dental students presented a poster in a scientific conference, 19% of dentists and 22% of dental students said that research is useful for future dental professions. There found to be a significant difference in attitude and motives towards scientific research among dental students and dental faculties ($p<0.05$).

Conclusion

Students and faculties had good levels of knowledge, but their practice was not up-to the mark but they have a positive attitude towards scientific research. Research is very crucial as it reveals reality and unreality

KEYWORDS: scientific research, sophisticated, dental professionals, innovative technique

INTRODUCTION:

Scientific research is a symmetric collection,interpretation and evolution of data. Qualitative research and quantitative research contributes to the body of science. Scientific research is important for technological advancements in the health of individual communities. Scientific research in health care is very useful for

diagnosis and treatment of overall disease and maintenance of oral health (1) . **S**cientific research in the case of dentistry creates an impact on the quality of patient care and the continuous development of dental practice, which significantly impacts the practice of dentistry (2) . In conducting scientific research empirical observation relies on direct observation.Replicable experiments in which another person duplicates the experiment's provisional results (3) . The objective approach and a systematic approach involving scientific research can prove or dis-prove theories and hypotheses through a systematic approach. Due to the scare of these studies in the Chennai city, it can full-fill their kind of studies towards scientific research among dental students and dentists in Chennai.

Many studies have been conducted to assess the knowledge, attitude, practice, motives and barriers towards scientific research among dentists and dental students in other cities .In-contrast these types of studies are scarce in Chennai city. Research is also considered to be one of the best indicators of the best scientific progress of a country (4) . Therefore health research has become a major component of medical education and research activity programs are required for modern medical education (4,5) .

Research not just in the medical field but also in every other field. makes the students improve their practical knowledge and apply it to the research works (6) . So, it makes it easier for the students to develop their knowledge towards their respective subjects. Research also helps to improve the present treating methods in hospitals and also make advancements in the technologies used by the medical professionals and dental professionals. It also helps to develop and find a medicine for the newly developing disease (7). So, it can be identified the factors which majorly affect research as knowledge, attitude, practice and barriers towards research (8). Scientific research is the systematic investigation of scientific theories and hypotheses (9). A hypothesis is a single assertion of a proposed explanation of something based on available knowledge (10). For something yet to be explained, one that is further experimentation. Scientific research is critical to the other methods that people use to understand the behaviour of others such as intuition and personal experience, the hallmark of scientific research is that there is evidence to support a claim. Research that develops our critical thinking skills, gives us knowledge and learnings and also provides us with information that we can apply or use in our daily life (11). Our team has extensive knowledge and research experience that has translated into high quality publications (12–31). The aim of this study is to assess the level of knowledge, attitude, practice and barriers towards scientific research among dentists and dental students in Chennai city.

MATERIALS AND METHODS

A cross sectional study was conducted employing a self administered questionnaire to the undergraduate students of the dental school. Prior ethical approval to conduct the study was obtained from the Institutional Review Board of the author's university. A non-probability convenience sampling method was employed. Dental students and dentists who were willing to participate in the study were included. A pre-validated and reliable questionnaire containing 15 questions had been distributed to the participants (Annexure 1). The internal consistency of the questionnaire using Cronbach's alpha was found to be 0.70.

This study was conducted by assessing responses to 15 selected questions pertaining to scientific research among dental students and dentists through Google forms with a sample size of 100 dental students. The email id of all the dental students and dentists were obtained from the students office and faculty office and the link to the google forms were sent. A reminder mail was also sent for non-respondents. Statistical analysis was performed using Statistical Package for the Social Sciences (SPSS) software version 23.0 (IBM, Chicago, USA). Descriptive statistics was performed to present the frequency distribution of the options of the question items. Also, Pearson's chi-square association was done to find the influence of education on the knowledge, attitude and practice of oral health measures among the participants. p value <0.05 was considered to be significant.

RESULTS

Knowledge towards scientific research was estimated by assessing the following questions,among the participants 72% of them agreed that research is useful in the dental profession in future.Among the participants 87% of them said that research is mandatory. Attitude towards scientific research was estimated by assessing the following questions, among the participants 69% of them agreed that research is important during academic study. Among the participants 70% of them agreed that research is important in medical practice. Among the participants 31% of them presented a poster in a scientific conference. Level of practice towards scientific research was estimated by assessing the following questions,among the participants 29% of them participated in research before in their dental college.Among the participants 28% of them submitted a research proposal. Among the participants 33% of them attended research courses within their undergraduate curriculum. Among the participants, 28% of them attended research courses outside of their college. Among the participants, 30% of their scientific publications were submitted for publication.

Among the participants 28% of dentists and 59% of dental students say that research is mandatory (Figure 1). Among the participants 13% of dentists and 16% of dental students submitted a research proposal (Figure 2). Among the participants 12% of dentists and 17% of students participated in research in their dental college (Figure 3). Among the participants 12% of dentists and 19% of students presented a poster in a scientific conference (Figure 4). Among the participants 19% of dentists and 22% of dental students said that research is useful for future dental professions in general (Figure 5). In this study there were more dental student respondents than dentist respondents.

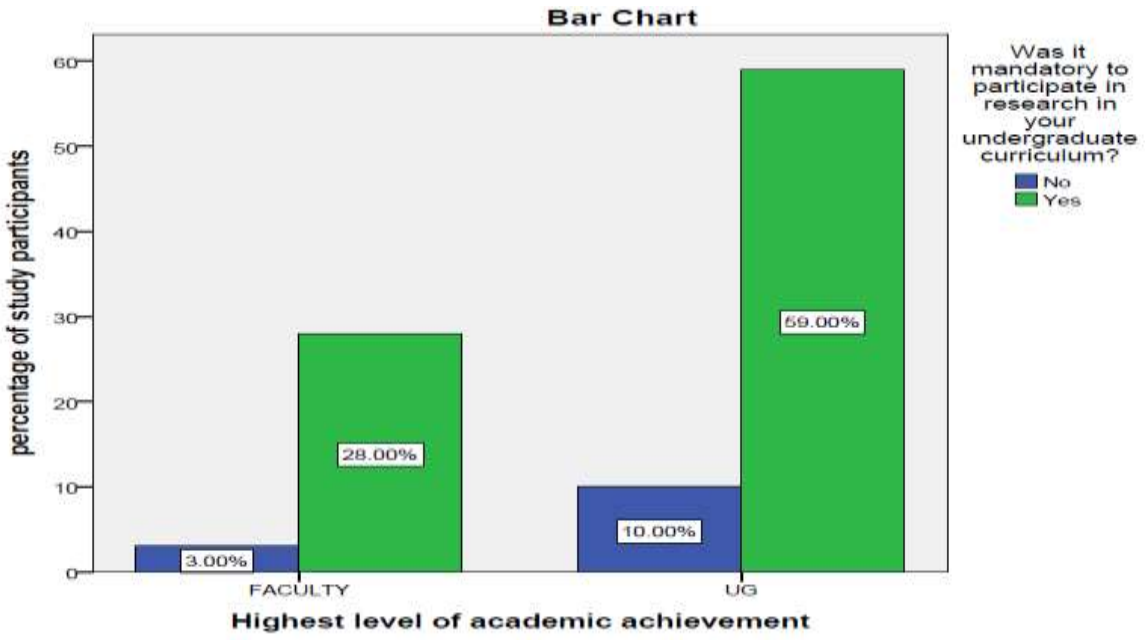

Figure 1 : Bar graph depicts the association between the students and faculty responses based on whether it is mandatory to participate in research in their UG curriculum.X axis represents level of academic achievement and Y axis represents percentage of study participants. Blue colour represents No and Green colour represents Yes. This difference was statistically significant (Chi-square test; p=0.028 - significant)

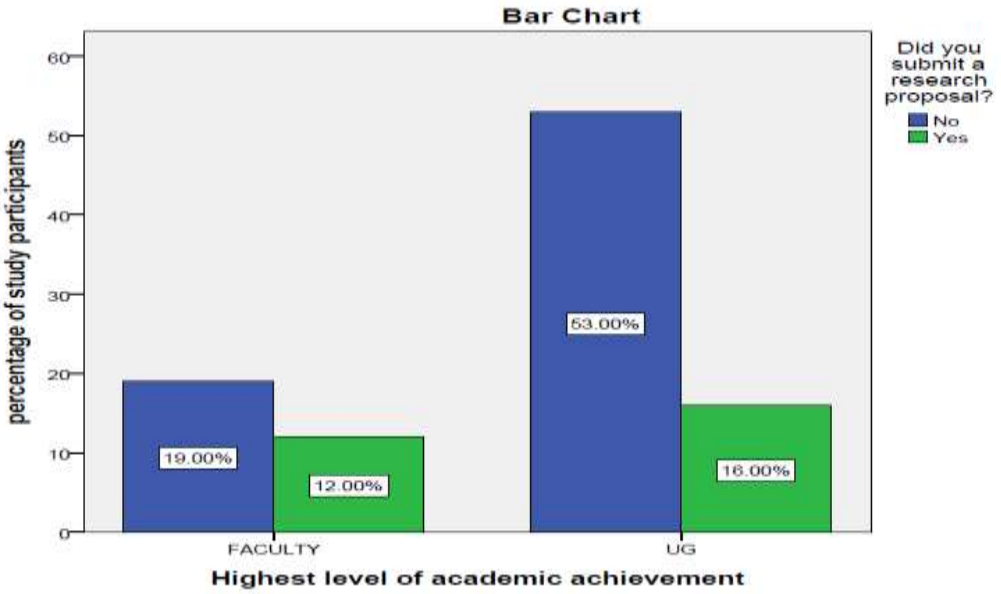

Figure 2: Bar chart depicts the association between the students and faculty submitted a research proposal. X-axis represents the level of academic achievement and the Y-axis represents the percentage of study participants. Blue colour represents no and green colour represents yes. This difference was statistically significant (Chi-square test; p=0.018 - significant)

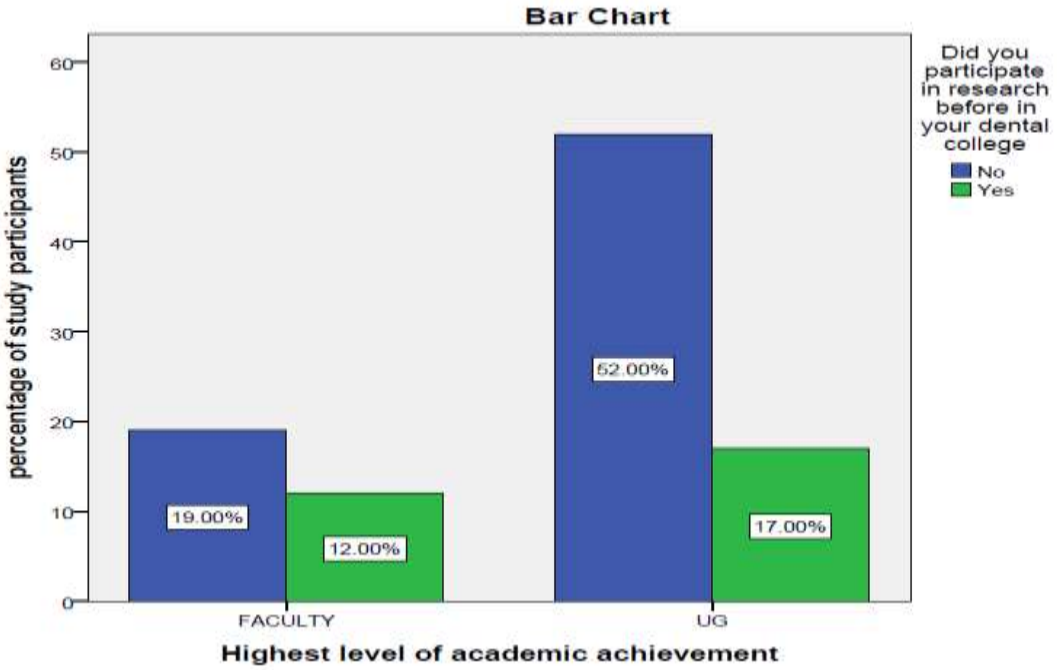

Figure 3: Bar chart depicts the association between the students and faculty who participate in research before in dental college. The X-axis represents the level of academic achievement and the Y-axis represents the percentage of study participants. Blue colour represents no and green colour represents yes. This difference was statistically significant (Chi-square test; p=0.008 - significant)

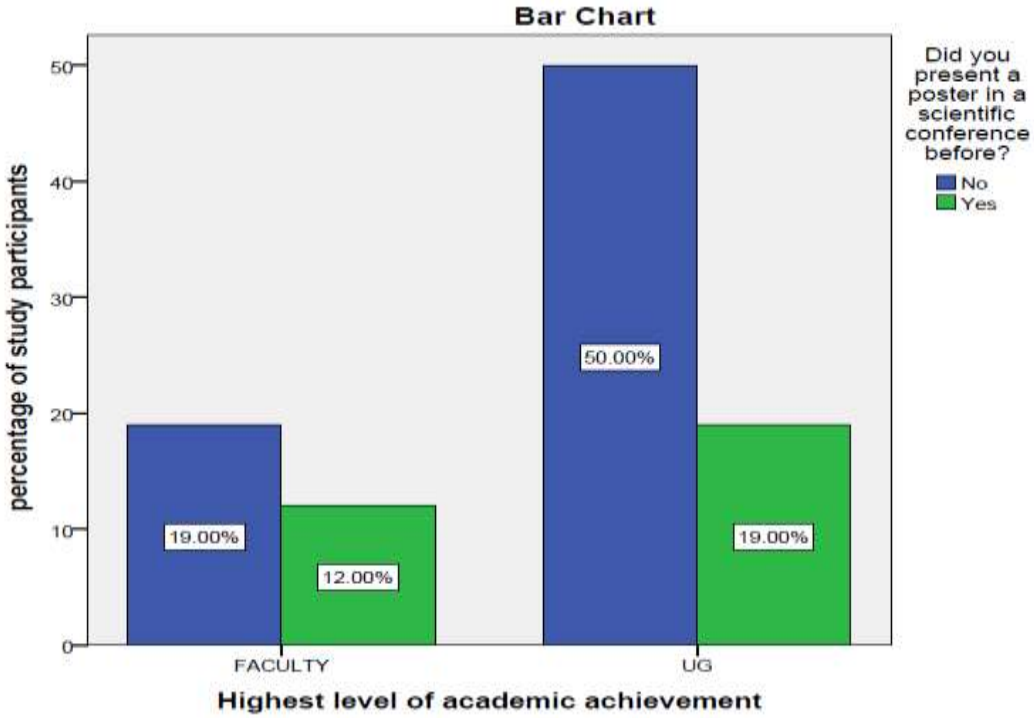

Figure 4: Bar chart depicts the association between the students and faculty presented for a poster in a scientific conference. The X-axis represents the level of academic achievement and the Y-axis represents

the percentage of study participants. Blue colour represents no and green colour represents yes. This difference was statistically significant (Chi-square test; p=0.001 - significant)

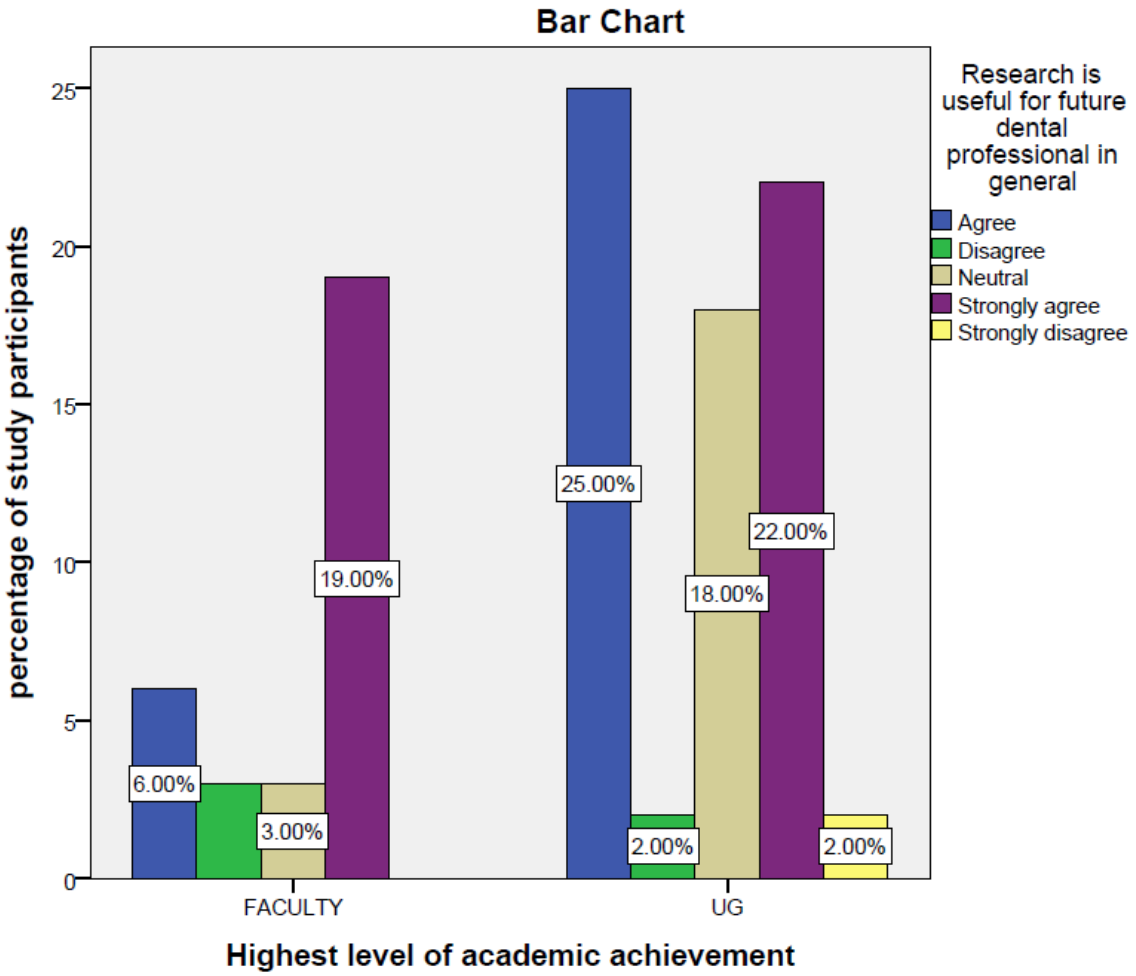

Figure 5: Bar graph depicts the association between students and faculty. x- axis denotes highest level of academic achievement and y-axis denotes percentage of study participants.Purple colour represents strongly agree , blue colour represents agree ,yellow colour represents strongly disagree , green colour represents disagree and beige colour represents neutral. This difference was statistically significant (Chi-square test; p=0.049 - significant)

DISCUSSION

Most of the participants had a high level of knowledge,positive attitude and a low level of practice towards scientific research. When compared with dental students, dentists had a high level of practice in scientific research. Our results showed that dentists and dental students had a high level of knowledge about scientific research.

Other studies showed the findings that medical students from schools of medicine, dentistry and pharmacy had advocated a moderate level of knowledge towards scientific research (32) . Dentists and

dental students have a positive attitude towards scientific research (8,32) . Our study showed the similar findings that the most dentists and dental students had a positive attitude towards scientific research (33) . But from the previous study it showed the participant's attitude was not up to the mark (5) . Dentists and dental students have low levels of practice towards scientific research (34) . But in previous studies the dentists and dental students have a high level of knowledge. Other studies showed similar findings that most of the participants failed to transform it into actual practice (35).

This study is limited to only a small number of participants.. So, it can be done for a wide range of population. Future scope of the study is that it can be conducted on a large population. Further study is needed with a sophisticated tool to measure scientific research in depth. For more precise results poor time management to carry out of a survey. We also used a self-report questionnaire which increases self-reported biases. Further studies might be directed to be conducted by national seats to an increased potential for biases.

CONCLUSION

Most of the participants had a high level of knowledge, positive attitude and a low level of practice towards scientific research. More efforts are needed to facilitate scientific research. Dental research including supervisors mentoring and university time allocation for research. Research components should be made an essential requirement in the under-graduated dental curriculum as well to form a strong foundation. Research is important as it develops our critical thinking skills, gives us knowledge and learning and also provides us with information that we can apply for use in our daily life.

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CONFLICT OF INTEREST

All the authors declare that there was no conflict of interest in the present study.

AUTHORS CONTRIBUTIONS

Uma maheswari: Literature search,data collection,analysis,manuscript drafting
Arthi Balasubramaniam: Data verification,manuscript drafting.

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ANNEXURE 1

1. Highest level of academic achievement
a) UG
b) faculty

2 Was. it mandatory to participate in research in your undergraduate curriculum
a)yes
b) no

3. Did you attend a research course within your undergraduate curriculum/internship years?
a)yes
b) no

4 .Did you attend a research course outside of your college?
a) yes
b) no

5 .Did you submit a research proposal?
a) yes
b) no

6. Did you participate in research as a data collection?
a)yes
b)no

7. Did you participate in research before in your dental college
a) yes
b) no

8 .Did you participate in research before outside your college?
a)yes
b) no

9 .Did you have scientific publication(s) that was/were published or submitted for publication?
a) yes
b)no

10 .Did you present a poster in a scientific conference before?
a) yes
b) no

11 .Research is important during academic study
a) Strongly disagree
b)Disagree
c) Neutral
d) agree

e) strongly agree

12 .Research is important in medical practice
a)strongly disagree
b)disagree
c)neutral
d)agree
e)strongly agree

13. Participated in training course about medical research
a) yes
b) no

14 .Research is useful for future dental professional in general
a)strongly disagree
b)disagree
c) neutral
d)agree
e)strongly agree

15 .Conducting a research is difficult
a) strongly disagree
b) disagree
c) neutral
d)agree
e) strongly agree