

# Attitude and Experiences of Undergraduate Dental Students and Interns Towards Research

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## ABSTRACT

**Objective:** This study was designed to evaluate the perception of students and interns toward research.

**Materials and Methods:** The study was conducted in January 2014. Participants of the study were fourth, fifth, and 6<sup>th</sup> year students and interns. A questionnaire comprised thirteen questions was distributed to evaluate students' and interns' perception about the importance of research in their learning.

**Results:** The results showed that interns and 6<sup>th</sup> year students were more interested in research as compared to their junior counterparts as they realized the importance of research in their educational growth. This was reflected by the number of interns who completed the questionnaire.

**Conclusion:** Dental students realized the importance of research in the education, but it was found that the proportion of students who did research as part of their course was very low. Students should be actively engaged in research, which can be achieved by introducing research as a compulsory component of their course.

**Key words:** Dental curriculum, dental research, dental students, research curriculum, research projects, students' behavior

ملخص البحث :

هدفت هذه الدراسة لتقييم إدراك الطلاب وأطباء الامتياز بكلية طب الأسنان لأهمية البحوث. وقد شملت الدراسة طلاب السنوات الرابعة والخامسة والسادسة وأطباء الامتياز. بينت الدراسة أن الطلاب في السنوات المتقدمة أكثر اهتماماً بالبحث العلمي مقارنة مع الطلاب في السنوات الأولى. وخلصت الدراسة إلى أنه وبرغم إدراك الطلاب لأهمية البحث العلمي إلا أن أعداد الطلاب الذين أجروا دراسات أثناء تدريبهم كانت قليلة جداً. ويوصي الباحثون بالحرص على إشراك الطلاب في البحوث لتكون إلزامية أثناء تدريبهم.

## INTRODUCTION

Research is an integral part of the undergraduate training of healthcare workers.<sup>[1]</sup> Since the beginning of 20<sup>th</sup> century, there has been a debate about producing dentists who can incorporate evidence-based treatment strategies in their clinical practice.<sup>[2]</sup> A global congress on dental education in September 2007 recommended that

“it should become a norm that a research requirement of some extent should be a part of the undergraduate curriculum.”<sup>[3]</sup> To bridge the gap between students and research, some characteristics need to be developed during their education such as critical thinking, self-directed learning, and problem-solving.<sup>[4]</sup> These skills can help

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students to conduct research as it becomes an integral part of dental education.<sup>[5-7]</sup> To produce competitive dental graduates who can match international standards, there should be self-directed programs for students, mandatory research courses, and participation in research conferences.<sup>[8]</sup>

In many dental schools around the world, research projects are conducted by undergraduate students as a part of their curriculum. The students are also encouraged to attend scientific conferences. The College of Dentistry in Oklahoma University has been arranging a student Scientific Day since 1982.<sup>[9]</sup> At Istanbul University, the Students' Research Club was established in 1992, where voluntary research is carried out in different branches of dentistry resulting in the completion of 193 research projects by 2010.<sup>[10]</sup> Students in South African dental schools are encouraged to participate in research activities.<sup>[11]</sup> The first scholarly article by a South African dental student was published in the early 1960s.<sup>[11]</sup>

Students at the University of Dammam are also engaged in research as part of their course, but it is not mandatory. The students select the research topic and methodology, while a faculty member assists and supervises them to complete their project. Research is a mandatory component of an internship program, which is the students' 7<sup>th</sup> year of study. In this year, students are mostly engaged with clinical work and research, and present their research finding during the internship program. In addition, interns are encouraged to attend scientific conferences and symposia to update themselves with recent developments and new challenges in dentistry.

The aim of this study was three-fold: (i) To seek the opinion of students and interns about their research experiences; (ii) to evaluate the factors that discourage or support students in research; and (iii) determine whether the students would like to become more involved in research.

## MATERIALS AND METHODS

This study was a prospective survey conducted in January 2014 and included fourth, fifth, and 6<sup>th</sup> year dental students, and those in the 7<sup>th</sup> year (internship) from the College of Dentistry, University of Dammam. Ethical approval for the study was obtained from the Institutional Review Board (Letter No. IRB-2014-02-018). A total of 106 undergraduate and postgraduate students from the fourth, fifth, 6<sup>th</sup>, and 7<sup>th</sup> year were included in the study. The questionnaire designed included 13 close-ended

questions, which were written in both English and Arabic for better comprehension by the respondents.<sup>[11]</sup> The questionnaire was provided to students in their classrooms and to interns in the clinics. The questionnaire, which was completed on a voluntary basis, was distributed at the beginning of the day and collected at the end of the day. A total of 23 questionnaires were distributed to the 4<sup>th</sup>-year students, 18 to 5<sup>th</sup>-year students, 23 to 6<sup>th</sup>-year students, and 21 to interns. All participants were briefed on the purpose of the study and the questionnaire. The closed-ended questions were designed to gather students' and interns' knowledge about the research component in their curriculum, their research experience, and outcomes.

Statistical Package for the Social Sciences (SPSS, version 19.0, SPSS Inc., Chicago, IL, USA) was used for data entry and analysis. Descriptive statistics was generated as the prime focus of the study was to determine response categories. Binomial test was used to analyze the significance of responses.

## RESULTS

Sixty-four questionnaires were completed with an overall response rate of 56.4%. Response rates for fourth, 5<sup>th</sup>, and 6<sup>th</sup> years were 57.1%, 52%, and 64%, respectively, and the response rate for interns was 60%. The results showed that students mostly conduct research in groups and that they are allowed to select the topic of research, or they can take advice from their supervisors to select an appropriate research topic. Interns are also allowed to select their research project.

Table 1 lists the positive responses from the participants in the various academic levels. The percentage of participants who participated in research activities varied from year to year. The binomial test was employed to test the significance of the responses for each year. The analysis revealed that a significantly small number of 4<sup>th</sup>-year students received support from teachers while conducting research ( $P = 0.041$ ). A significantly small number of fifth ( $P = 0.003$ ), 6<sup>th</sup> ( $P = 0.022$ ), and 7<sup>th</sup>-year students ( $P = 0.003$ ) replied affirmatively when they were asked whether the research was voluntary.

## DISCUSSION

The University of Dammam has a research component as part of the undergraduate program, as in other institutions.<sup>[12]</sup> Research is a vital component in developing professionals.<sup>[11-13]</sup> Professional schools recognize

**Table 1: Frequencies of positive responses among the respondents**

Question	4 <sup>th</sup> year n (%)	5 <sup>th</sup> year n (%)	6 <sup>th</sup> year n (%)	Interns n (%)
Did you do any research during your undergraduate course?	6 (30)	5 (38)	9 (56)	15 (100)*
If yes, mostly in what year of study?	3 <sup>rd</sup>	4 and 5 <sup>th</sup>	6 <sup>th</sup>	6 <sup>th</sup>
Was this research part of your curriculum?	6 (30)	5 (38)	9 (56)	15 (100)*
Was the research voluntary?	13 (65)	1 (8)*	2 (12)*	2 (13)*
Did you enjoy the research?	3 (15)*	5 (38)	9 (56)	13 (87)*
Did you get support and help from your teachers when doing research?	5 (25)*	5 (38)	9 (56)	14 (93)*
Would you have like to have done more research?	5 (25)*	9 (69)	15 (94)*	12 (80)*
Would you like to do postgraduation?	13 (65)	10 (77)	16 (100)*	15 (100)*
Do you think research is important?	12 (60)	11 (85)*	15 (94)*	15 (100)*
Do you think you will do research in the future?	17 (85)*	9 (69)	14 (87)*	14 (93)*
Do you think research is important, but it is best left to others?	7 (35)*	2 (15)*	7 (44)	4 (27)
Have you ever read a research paper or published in a journal?	15 (75)*	9 (69)	14 (87)*	14 (93)*
Have you ever heard a research paper orally presented	6 (30)	4 (31)	3 (19)*	8 (53)

\*Statistically significant

the importance of research in undergraduate teaching. However, students have their own perceptions and attitudes toward research. Grossman and Naidoo reported in their study of students' attitudes toward research in four South African dental schools that dental students were very aware of the importance of research in their education.<sup>[11]</sup> However, most of them were less interested in doing more research, and a majority did not enjoy the research experience.<sup>[11]</sup> It is important to educate an undergraduate dental student according to modern advancements in dentistry, and research is a basic tool to discover new methods, techniques, and approaches. It is important to promote research in dental schools to produce scientifically oriented practitioners.<sup>[12]</sup> However, due to limited funding, it becomes difficult for a college to bear the cost of research in addition to all other expenses.<sup>[13]</sup>

In many countries, students have difficulty in obtaining scholarships to support their studies. Students from lower socioeconomic backgrounds depend upon loans or scholarships to continue their education. Consequently, the financial burden is a major hindrance to students' education and research.<sup>[14,15]</sup> Fortunately, in Saudi Arabia, there are ample opportunities for students to study up to graduate level and support is also provided for postgraduate studies through several scholarship programs.<sup>[16]</sup> The Ministry of Higher Education in Saudi Arabia provides funding to qualified and competitive students, and the universities also provide support for continuing education and research work.<sup>[17]</sup> Digital library services in universities also provide support and help to faculty and students with e-books and e-journals.<sup>[18]</sup> There are approximately 250,000 e-books and 60,000 e-journals available through digital library

services.<sup>[19]</sup> This provides a conducive environment for Saudi students to conduct research.

The limitation of this study is that it was performed only in one dental college. It is recommended that other dental colleges in Saudi Arabia should be included to have better comparative results.

## CONCLUSION

This study shows that dental students in the University of Dammam are enthusiastic about research, and postgraduate studies and that the overall environment in the College of Dentistry is very conducive to research. Although students recognize the importance of research in education, the proportion of students who actually undertook research was very low. However, the study also revealed the necessity of engaging students in research by including it as a compulsory element of the course work.

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## Conflicts of interest

There are no conflicts of interest.

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