

# Assessment of dental student satisfaction with regard to process of thesis educational courses

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## ABSTRACT

**Introduction:** Ensuring achievement of research experience by students is one of the most important goals of the thesis-conduction process and evaluation of student satisfaction with this process is one of the most imperative challenges herein. **Aims:** The aim of this study is to investigate the satisfaction of dental students passing the thesis educational course from the Isfahan Dental School. **Settings and Design:** Sixty-two dental students who had graduated in 2011, from the Isfahan Dental School, participated in this descriptive cross-sectional study. **Materials and Methods:** The postgraduate Research Experience Questionnaire (PREQ) was used for data collection. The questionnaire evaluated student satisfaction in seven domains: Thesis supervision, skill development, intellectual climate, infrastructure, thesis examination, goals and expectations, and overall satisfaction. **Statistical Analysis Used:** The data were analyzed on an SPSS software using descriptive and inferential statistics. **Results:** The mean score of satisfaction of the participants was  $75 \pm 12$ . On the basis of their scores, satisfaction in 3.2% of them was slow, in 33.9% was medium, in 61.3% was good and in 1.6% was high. The highest satisfaction was found to be in thesis supervision and the least was in the intellectual climate domain. There was no significant statistical difference between satisfaction and gender ( $P = 0.46$ ). **Conclusions:** Considering the results, to increase student satisfaction for passing the thesis courses, it is necessary to improve the intellectual climate in dental schools and also increase the research budget for more financial support of students to carry out their projects.

**Key words:** Dental student, satisfaction, thesis

## INTRODUCTION

Research is among the basic and major fundamental processes in developed societies. Nonscientific or logical movements seem to be possible without the support of researches. In fact, research is the most important driving force of society in the path of progress and development and one of the most important indicators of development.<sup>[1,2]</sup> Thus, given that research is among the major services of the faculties,

the evaluation of researches is an essential and important aspect for the awareness of quality and improvement of research programs. The resulting data can be used in decision-making, determining strategies, and growth and development of research systems in the universities. On the other hand, the main core in any higher education system is the learner (student). All the efforts of various departments of the university are used to understand the questions and needs of students and to create appropriate changes in their behaviors and practices. Performing a research project as a thesis is an especial course which all of the students at the doctoral level are required to do, in Iran. Therefore, one

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can claim that a thesis is the most important and systematic step in research dimension that the students will be familiar with it.<sup>[3,4]</sup> This process ends with the guidance of the students masters as supervisors and consultants.<sup>[5]</sup> Theses play an important role in educating students in the field of research and finally in the production of science. Many of the surveyed, descriptive, and experimental researches that are performed by students will be the start of a series of more detailed and fundamental studies. Articles have been written based on theses, which are regularly presented in developed countries, indicate their importance.<sup>[6]</sup> It seems that the success in the thesis conduction process is totally dependent on factors such as, the quality of scientific resources, organizational cooperation, access to skilled supervisors, and an appropriate enforcement process.<sup>[7]</sup> Raadafshar and colleagues, in reviewing the students' perspectives about thesis course, in the Gilan University of Medical Sciences, showed that only 17% of the students were satisfied with the thesis procedure.<sup>[8]</sup> Siemens and colleagues showed in their study that the most important obstacles to participate in research projects from the point of view of medical students in the three faculties in Canada, have been included, time, access to supervisor, teaching research methodology, and lack of receiving proper feed back for their efforts.<sup>[9]</sup> In another study, it has been expressed that supervisors have the maximum guidance in the early stages of research, such as guidance for choosing the topic and the initial planing, and also in the final stages of preparing a thesis, such as, the thesis report preparation. The results have shown that there is no significant difference between the quality of supervisors' guidance in terms of faculties and academic ranking.<sup>[10]</sup> James Cook University, Australia, in its report about the student satisfaction from thesis supervision has shown that 67% of the students was satisfied with theses supervision in 2007, which in comparison with 2006, has shown a reduction of 12.8%.<sup>[11]</sup> Universities due to their involvement in multiple issues have less opportunity for assessment of students perception about quality of their education. Most of these efforts are faced with lack of direction.<sup>[12]</sup> In the Isfahan University of Medical Sciences, in recent years, special attention has been paid to the supervision, monitoring, and a more accurate evaluation of theses. However, so far, there has not been a structured survey in the field of students' attitudes and evaluation of their perception with regard to the thesis conduction process. Besides, understanding the students' points of view, as a main asset of each educational institution, thinking about their experiences and desires are other important factors that cannot be ignored. The obtained information can provide a clear and underlying objective to solve many observed problems in the universities. The results can demonstrate some of the problems, weak points, and of course, the strong points in higher education and necessary changes in the current programs. Considering that the thesis is typically the last connection that the students have with the university, there is no more time for the students to express their opinion regarding the shortcomings of this process during their education. Therefore, the present study has been designed to investigate the rate of satisfaction of

the dental students' in the Isfahan University of Medical Sciences in different domains of passing the thesis course after graduating.

## MATERIALS AND METHODS

This research was a cross-sectional study that was carried out in 2011–2012 in the Dental School of Isfahan University of Medical Sciences. The participants comprised of all the 63 students, who according to the report of Department of Education, had graduated this year. Sampling was performed by using the census method. The data collection tool was the Postgraduate Research Experience Questionnaire (PREQ). It was extracted from a scientific questionnaire, which was used in an Australian study.<sup>[13]</sup> Reliability and validity of the Persian version of questionnaire had been approved in the study of Dehghani.<sup>[14]</sup> As the main questions were designed for PhD graduate students, limited changes were made to optimize it for dental students. Finally, for assessing the content validity, the questionnaire was given to three professors and two experts from the Educational development center. The necessary reforms were carried out after applying their opinions. For the face validity, the questionnaires were given to ten students. Their points of view were considered and they were applied. A pilot study was used for the reliability assessment of the questionnaire by calculating the Cronbach's alpha coefficient of 0.81, which was a good indicator for the appropriate reliability of the questionnaire. The questionnaire was of a regular type, including 25 Likert-type questions and was consisted of two parts. The first part included questions regarding the students' gender and their experience in conducting researches. The second part included questions that were related to measuring student satisfaction. Perspectives of the studied subjects were measured with a five-point Likert scale and the scores were: One for 'totally disagree' and five for 'strongly agree'. The overall satisfaction score, according to this questionnaire was in the range of 24 to 120 and was divided into four levels (low satisfaction from 24 to 48, moderate satisfaction from 49 to 72, satisfied from 73 to 96, and great satisfaction from 97 to 120). This questionnaire investigated the students' satisfaction in six areas, including thesis supervision and monitoring (six questions with a score ranging from 6 to 30), intellectual atmosphere in the faculty (two questions with a score ranging from 2 to 10), improvement of research skills (five questions with a score ranging from 5 to 25), access to equipment and infrastructure for the research (five questions with a score ranging from 5 to 25), area of the thesis examination (three questions with a score ranging from 3 to 15), area of achieving the expected goals of thesis course (three questions with a score range from 3 to 15), and finally, one question regarding the overall satisfaction of passing the thesis (with a score ranging from 1 to 5). According to the information received from the Department of Education of the faculty, students who pass their thesis examination and getting the final scores were selected as the samples. The questionnaires were given to the subjects and after completion, they were collected. Statistical analysis was performed by using the SPSS statistical

software accompanied by descriptive analysis (frequency and the mean), an independent *t*-test to investigate the relationship between the gender and the overall satisfaction score of the students, and the Fisher's exact test to investigate the relationship between the history of previous researches and their satisfaction. The level of significance was considered to be 0.05.

## RESULTS

Out of the 63 graduates, in 2011–2012, 62 subjects (40 females and 22 males) participated in the present study. One person was excluded from the study due to lack of access. The overall response rate was 96%. Five subjects (7.9%) had a history of previous researches. The overall satisfaction scores of individuals, based on the sum of all questions were obtained, which were, 3.2% low, 33.9% moderate, 61.3% good, and 1.6% great, respectively. The mean satisfaction score was also reported, which was  $75.5 \pm 12.2$  (with a score range from 24 to 120). The mean satisfaction score in the studied areas, in terms of gender, can be seen in Table 1. Based on the independent *t*-test, apart from the two areas of

satisfaction of the equipment and infrastructure ( $P = 0.013$ ) and satisfaction of defending the thesis ( $P = 0.013$ ), there was a significant relationship; but there was no significant difference between the rate of satisfaction in the different areas and gender. The Spearman's correlation coefficient test showed that there was a fairly significant correlation between the overall score of the questionnaire and the mean score of overall satisfaction ( $P = 0.000$ ,  $r = 0.563$ ). According to the Fisher's exact test, there was a significant relationship between having a previous history of research projects, but only in the area of satisfaction from the intellectual atmosphere in the faculty ( $P < 0.05$ ). There were no significant differences in other areas.

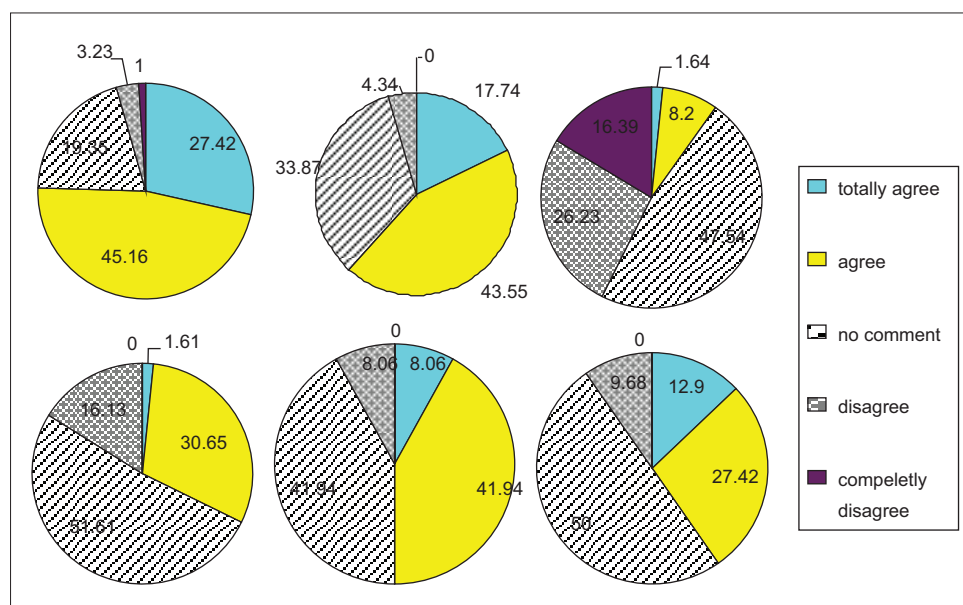
The mean score for each area was graded as: 0–1 = completely disagree, 1–2 = disagree, 2–3 = have no comment, 3–4 = agree, and 4–5 = totally agree, [Figure 1].

(A) Supervisory, (B) skills improvement, (C) intellectual atmosphere in the faculty, (D) equipment and infrastructure availability, (E) achieving the goals and expectations, (F) thesis-defending process

**Table 1: The mean score of the studied areas by gender**

Areas		Men (22)		Women (40)		Total (62)		P value
		Mean	±SD	Mean	±SD	Mean	±SD	
Supervision	6-30	20.2	6.2	21.7	5.1	21.1	5.4	0.32
Skills improvement	5-25	17.0	3.9	16.9	3.5	17.0	3.6	0.70
Intellectual climate	2-10	4.6	2.1	4.9	1.8	4.9	1.8	0.54
Equipment and infrastructures	5-25	12.3	2.1	14.2	3.7	14.2	3.7	0.03*
Thesis examination	3-15	8.5	2.2	9.9	2.5	9.9	2.5	0.02*
Goals and expectations	3-15	9.2	1.5	9.6	2.4	9.7	2.4	0.39
Overall satisfaction	1-5	3.4	1.2	3.6	1.1	3.6	1.1	0.46

\*P value <0.05. The mean score for each area was graded as: 0-1 = Completely disagree, 1-2 = Disagree, 2-3 = Have no comment, 3-4 = Agree, and 4-5 = Totally agree, [Figure 1]. SD = Standard deviation



**Figure 1: Percentage of satisfaction in the studied areas**

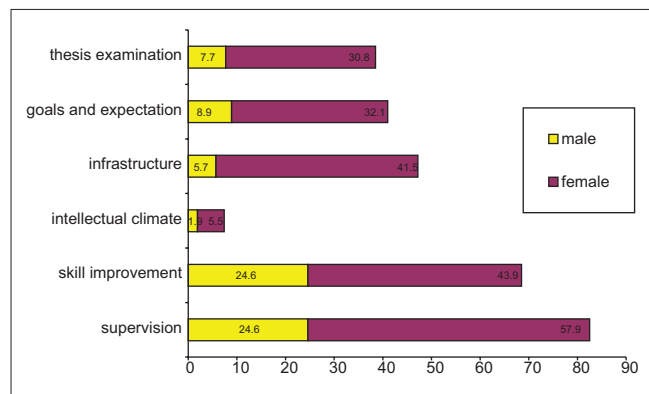
To evaluate the percentage of satisfaction in each area, the responses to the questions were divided into two parts: (1) Satisfaction, included responses of 'agree' and 'totally agree', (2) lack of satisfaction, included responses of 'having no comment', 'disagree,' and 'totally disagree'. Next, the percentage of satisfaction was calculated with a number of key questions [Table 2] and the satisfaction was calculated in all areas [Figure 2]. The highest percentage of satisfaction was observed in the area of monitoring and supervision, and the lowest percentage of satisfaction was obtained in the area of intellectual atmosphere in the faculty. In general, satisfaction in women was greater than it was in men.

## DISCUSSION

Evaluation of programs and courses in the universities has particular importance. Considering that research is

**Table 2: Frequency percentage of responses to some questions of the questionnaire**

Questions	Disagree		Agree	
	N	%	N	%
Research supervision was available when I needed it	16	25.8	46	74.2
I have received good guidance in my literature search	21	33.9	41	66.1
I was given good guidance in topic selection and refinement	30	48.4	32	51.6
I learned to develop my ideas and present them in a written form	19	30.6	43	69.4
My research has sharpened my analytical skills	22	35.5	40	64.5
I had good access to the necessary equipment	42	67.7	20	32.3
I had good access to the technical support and computer facilities	40	64.5	22	35.5
There was appropriate financial support for my research activity	55	88.7	7	11.3
In doing my research, I obtained the expected standard	39	62.9	23	37.1
The faculty provided me opportunities to become involved in the broader research culture	48	77.4	14	22.6



**Figure 2: The percentage of frequency of satisfaction in the studied areas by gender**

among the major services of the faculties, its evaluation is an important and essential aspect in improving research programs. Evaluation will be used in decision-making, determining strategies, future operational procedures, and growth and development of the research system in universities. Thesis is one of the most essential aspects of study for students. Every student at the doctoral level in Iran is obligated to do so. The present study has investigated the dental students' satisfaction in Isfahan, by conducting this thesis process in various areas, including supervision and monitoring of the teachers, acquisition of research skills, intellectual atmosphere in the faculty, access to equipment, and the use of appropriate infrastructure to perform the study, examination process of the thesis, and achieving the expected goals. On the basis of the results of this study, 64% of the students had full and complete satisfaction with the process, 34% were with moderate satisfaction, and 3.3% of them had low satisfaction in this regard. Satisfaction was greater in women than in men. The highest satisfaction was related to the area of supervision and monitoring and the least satisfaction was related to the area of intellectual atmosphere in the faculty. The study of Dehghani and colleagues, conducted in the Tabriz Faculty of Medical Sciences, showed that the overall satisfaction level from the theses supervision was 58%, which was pretty much the same as the results of the present study in Isfahan. The main causes of dissatisfaction in the students were the included fundamental elements of research, lack of scientific seminars, lack of financial support from researchers, and the absence of scientific and intellectual atmosphere at the university.<sup>[14]</sup> Raadafshar and colleagues, in a similar study, in the Gilan University of Medical Sciences, showed that only 17% of the students were satisfied with the thesis conduction process. This was significantly greater in dental students compared to the medicine and pharmaceutical students.<sup>[8]</sup> The results of the University of Edinburgh, UK, showed that in 2004 – 2005, thesis supervision had achieved 84% satisfaction of the students compared to 2003 – 2004, where it had decreased by 5%.<sup>[15]</sup> In another study by the Royal Melbourne Institute of Technology, student satisfaction with respect to the efforts of the supervisor to understand the difficulties faced by the students has been 70%. This value in the present study was much lower (about 50%). Also, the guidance of the supervisor for the research literature was about 45%, which was very close to 51% in the present study. About 20% difference in understanding the students' problems was probably related to the different target groups in these two studies. This was probably because the Melbourne study had been performed in PhD students. Their quantities had usually been much more limited, with an extremely close relationship with their teacher in their own research projects.<sup>[16]</sup> The final report of the Higher Education Academy, UK, showed that the factor of supervision and monitoring was the most important factor in the success of research programs.<sup>[17]</sup> The supervision process and monitoring the thesis is a mutual interaction connection between the teacher and student. This type of relationship has a significant impact on the quality of the supervision process. Bennet in a study indicated that thesis

supervision was a very personal matter. It would be judged best by teachers and students with a close relationship and the student could be the best judge for the quality of this process.<sup>[18]</sup>In a research conducted by Mabrouk, the students expressed four features as the characteristics of an ideal supervisor, including, academic ability, offering helpful tips, ability to motivate students, and availability.<sup>[19]</sup>The training curriculum of dental students has been determined by the goals of providing a thesis course including, the ability of students to write a proposal for a research project, their ability for application of software programs, management of scientific resources, operating as a member of a research team (teamwork), interpreting the research results, and finally, presenting the conducted research report. The study observed that the students were very satisfied about the proposed writing process and guidance of their teachers in giving a written form to their ideas. Their satisfaction on issues regarding acquisition of analysis skills were reported to be over 60%. This issue would indicate that many of the objectives of this course have been achieved from the students' point of view. However, unfortunately, more than 60% of these students not know themselves at the range of the expected standards of doing research. Considering the lack of satisfaction of 77% of the students regarding the area of existence of intellectual atmosphere in the faculty for additional research opportunities, it can be concluded that these students are required to do more researches for achieving the necessary competency in performing standard researches in this field. Other factors pertaining to student dissatisfaction are lack of access to computer facilities, statistics, and financial liabilities. It seems that increasing computer facilities and allocating more funding for students' researches and theses can be an effective step for improving the quality of researches and increasing student satisfaction. From the results of this study it can be gathered that there is no significant relationship between the thesis conduction process and gender, from the overall satisfaction of students. However, women showed significantly greater satisfaction compared to men in the areas of equipment and infrastructure availability and thesis defending process. An interesting fact is that in a conducted study in Australia, there was a significant difference between the two genders, only in the area of equipment and infrastructure. However, men were more satisfied than women. Perhaps the difference could be due to the type and quantity of research project infrastructure that existed in the two countries and also the difference in the expectations of both genders in two different cultures. In this study, there was a 10% difference between the overall student satisfaction on the basis of the questionnaire (64%) and the overall satisfaction, with regard to the last question on the sum of the individual evaluation from the thesis conduction process (54%). This difference appeared to be due to some factors other than the questions posed in questionnaire, influencing the students' satisfaction, and also lack of their coverage by the questions in the questionnaire. This issue has been among the limitations of this study. It is suggested to carry out a qualitative study to recognize the factors affecting dental student satisfaction with regard to the thesis process.

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## Conflicts of interest

There are no conflicts of interest.

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