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Motivations, attitudes for choosing dental profession and preferred dental specialties amongst Turkish dental students

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Abstract

Aim: The aim of the study was to investigate the influential factors for choosing dentistry, their thoughts about the profession, their expectations for the future and their thoughts about the specialisation of dental students from all grades in the School of Dentistry, Marmara University.

Materials and Methods: Socio-demographic information, influential factors the choice of profession, thoughts and expectations about dentistry, and thoughts about the specialisation were evaluated in the questionnaire that included different question types in four separate sections. Chi-square test was used to assess the relationship between categorical variables, and multiple linear regression was performed to examine the combined effects of variables that influence the always dream of becoming a dentist.

Results: 462 of the 471 participants from all grades who agreed to participate in the study completed the questionnaire with a response rate of 98.1%. It was seen that the students' clinical experience made differences in almost half of their motivational sources for choosing dentistry and their views on future opinions and expectations ($p < .05$). In addition to clinical experience, gender also made a statistically significant differences in almost all answers in the students' opinions about specialisation ($p < .05$).

Conclusion: From the results of the study, the majority of Turkish dental students were self-motivated compared to familial and environmental factors for choosing dentistry as a career. The career motivations of them seemed to be associated with the socioeconomic aspects of dentistry, whereas the perceptions regarding the future of dentistry seemed to be associated with the need for postgraduate education.

KEYWORDS
career choice, clinical experience, dental specialties, dental students, paediatric dentistry

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1 | INTRODUCTION

Career choice has a permanent effect on individuals' life. The process of choosing the professions in which individuals maintain their lives leaves a mark on the personality, attitude, and appearance of the individual, their future level of income and their relations with society.[1] According to the data of the World Health Organization (WHO), it is estimated that the global shortage of healthcare workers will be about 13 million after 15 years.[2] Despite the increase in career choices in the field of health care in the world, healthcare professionals cannot keep up with the growth rate of the world population. Country, society, culture and individual preferences are effective in career choice in health care.[3] The reasons why dentistry, which is an important part of healthcare services, is preferred as a career have been discussed in the scientific literature. Studies show that the choice of dentistry as a career may be due to multifactorial reasons such as the desire to help people, flexible working conditions, a comfortable working environment and economic opportunities.[4,5]

Dental education in Turkey began with the establishment of the first dental school in 1909, and with the University Reform in 1933, the first dental school was officially established.[6] Officially, undergraduate dental education is 5 years (10 semesters) in Turkey. According to the data of the Turkish Dental Association (TDA),[7] there were a total of 97 dental schools in Turkey as of July 2020, and according to the data of the Higher Education Institution (HEI),[8] the number of quotas for these faculties for 2020 was 5462 for state universities and 1761 for private universities. In the same year, the number of graduates from the dental schools of state universities in Turkey was 3212, whilst the number of graduates from private universities was 674.[9] With new graduates, the number of dentists in the country in 2020 was 42 288, and the population per dentist was 1970.[10] Applications for all higher educational institutions in Turkey, including dentistry, are made with a central university entrance examination every year. Following the examination, students are enrolled in a higher education institution according to their scores and rankings. Students who wish to enter a dental school are anticipated to obtain a minimum reasonable score. In addition, in order to be placed in dental schools, it is necessary to be in the first 80 000 amongst all candidates in the university entrance examination held that year. This success condition is valid for all those who take the examination, including the quota for the top student in the high school degree opened by the faculties.[11] Today, there is still no guidance service in every secondary education institution to analyse its students' motivations and career choice based on their capabilities and personality traits. For this reason, society, family, relatives or friends may be influential in the career choices of students.[12] Besides, due to the difficulty of both theoretical and practical education processes compared to other professions, students' ideas, expectations for the future and satisfaction with their profession may change during the undergraduate education period.[5]

In Turkey, people who earn the title "dentist" can work in institutions under the responsibility of the Ministry of Health, private clinics or hospitals. On contrary, there is also an increasing interest in specialisation or doctoral programmes in dentistry. In addition to the postgraduate doctoral programmes that have been preferred for many years, postgraduate specialisation programmes have started to become widespread with the specialisation examination (DUS) applied for the first time in 2011.[13] Eight specialisation branches are recognised by the Ministry of Health and the HEI: Oral and Maxillofacial Radiology, Oral and Maxillofacial Surgery, Orthodontics, Paediatric Dentistry, Periodontology, Endodontics, Restorative Dentistry and Prosthodontics.

Paediatric dentistry is the branch of dentistry that deals with the oral and dental health of children and adolescents. Paediatric dentists deal with the oral and dental health problems of the paediatric population in the orofacial region, as well as serve as an educational resource for both parents and the community in oral and dental health.[14,15] In a study published by Casamassimo et al.[16] in 2018, it was shown that dental students do not gain enough experience to treat children in dental practice, including behaviour manipulation techniques. It is very important for dental students, who are the future dentists, to gain theoretical and clinical experience in diagnosis and treatments of the oral and dental health knowledge of children during the undergraduate period, and this experience also affects the desire of the students to specialise in the field of paediatric dentistry after graduation.[17] Personal, professional, vocational and economic reasons are amongst the reasons why undergraduate dental students prefer paediatric dentistry, which is becoming increasingly popular today.[18] Therefore, also considering the importance of paediatric dentistry practice in the undergraduate period, the impact of personal and environmental factors that may be effective in undergraduate dental education on choosing paediatric dentistry as a postgraduate specialty cannot be ignored.

To the best of our knowledge, no study has been conducted in all grades of a state university's school of dentistry about students' choice of dentistry as a career, their motivation sources and thoughts about specialisation in Turkey. Therefore, the present study aimed to investigate the influential factors for choosing dentistry, their thoughts about the profession, their expectations for the future and their thoughts about the specialisation and paediatric dentistry of dental students from all grades at a state university.

2 | MATERIALS AND METHODS

2.1 | Participants

The study was approved (protocol number: 64) by the Ethics Committee of the Institute of Health Sciences, Marmara University, and was conducted in accordance with all ethical principles of the Declaration of Helsinki. The study sample of this study consisted of students at the School of Dentistry of Marmara University, a state university in Istanbul, Turkey.

Participation in the study was on a voluntary basis, and the personal information of any participant was not requested. After

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detailed information about the study was given to the participants, informed-consent forms were signed. The questionnaire form was distributed to the participants, and they were asked to fill it in completely and accurately.

2.2 | Questionnaire

The questionnaire form was created from the questions of the questionnaires used in publications accepted in the scientific literature on the subject.[12,19-21] The questions in the form are written in Turkish, and before the main study, a pilot study was conducted with a total of 20 students (two males and two females from all grades) in terms of clarity and validity of the questions. Subsequently, minor changes were made to some questions, and the data of 20 students who participated in the pilot study were not included in the main study. In terms of the reliability of the questionnaire, the final version was completed to a total of 10 students (one male and one female from all grades) two times with a 1-week interval. As a result of the reliability analysis, it was concluded that Cronbach's alpha values were between 1 and 0.75 for each questionnaire item, which indicates a high level of internal consistency for the questions. The data from the 10 students who took the reliability test were not included in the main study.

The questionnaire consisted of four separate sections. In the first part, a total of eight questions were asked, including information about the grade, age, gender, the first choice for undergraduate education, the time to decide to study in dentistry, people who affected the choice of dentistry, the presence of dentist parents and opinions about the chosen profession. The second part of the questionnaire included a total of 13 questions about the factors affecting the choice of dentistry and the future of dentistry as a profession. The participants were asked to indicate their level of agreement with 13 questions using a Likert-type scale ranging from "strongly disagree" to "strongly agree." The third part of the questionnaire consisted of four questions asking students about the field of specialisation they intend to choose after graduation, where they would like to work, possible factors that might cause them to end their undergraduate education, and the presence of the idea of transferring to another university and/or department. The last part of the questionnaire was intended only for senior students and contained two questions asking students' opinions on paediatric dentistry. In undergraduate education, students prepare special practices for paediatric dentistry in the fourth and fifth grades. Whilst the study was carried out, as some of the fourth-grade students had not yet practised in the paediatric dentistry clinic, only fifth-grade students were asked to participate in this part.

2.3 | Statistical analysis

The normality of the distribution of continuous variables was tested by the Shapiro-Wilk test. The chi-square test was used to assess relations between categorical variables. Multiple linear regression was performed to examine the combined effects of variables that influence the always dream of becoming a dentist. Descriptive statistics parameters were presented as frequency, percentage (%) and mean ± standard deviation (SD). Statistical analysis was performed with SPSS for Windows version 22.0 (SPSS Inc), and p-value <.05 was accepted as statistically significant.

3 | RESULTS

Five hundred and one dental students were invited to the study. 462 of the 471 participants who agreed to participate in the study completed the questionnaire, for a response rate of 98.1%. The study group included 121 first-grade, 67 second-grade, 81 third-grade, 82 fourth-grade and 111 fifth-grade dental students. The participants were between 17 and 32 years of age, with a mean age of 21.56 (±2.17). The demographic and general information of the students and their views about dentistry as evaluated in the first part of the questionnaire are presented in Tables 1 and 2. It was observed that the gender of the student and their time to decide on dentistry had a statistically significant effect on their opinions about dentistry ($p = .001$, $p = .002$ respectively). However, the fact that they were influenced by their environments such as parents/friends or their own decisions in choosing dentistry did not make a significant difference in their opinions.

Third-, fourth- and fifth-grade students that with clinical experience were classified as "with clinical experience," whilst first- and second-grade students without clinical experience were classified as "without clinical experience." When the motivation sources for choosing dentistry and the views on the future in the second part of the questionnaire with the Likert-type scale were evaluated, the comparison between genders was shown in Table 3, and the comparison between clinical experiences was shown in Table 4. When the clinical experience of the students was evaluated, statistically significant differences were found in almost half of the answers ($p < .05$).

Table 5 shows the results of the third part of the questionnaire, which includes the students' opinions about continuing their profession after graduation. Gender and clinical experience of students caused statistically significant differences in almost all of the answers in this section ($p < .05$).

The results of the questions related to paediatric dentistry, which only senior students were subjected to, are shown in Table 6.

Table 7 summarises the multiple regression analysis predicting the level of agreement with always wanting to be a dentist. For the level of strongly agreeing with this proposition, age, first choice in department, having a dentist parent, and the level of strongly agreeing with the propositions of high status, being inspired by the dentist, ease of finding a job and income controlled, the model was significant ($p = .030$, $p < .001$, $p = .003$, $p < .001$, $p < .001$, $p = .013$, $p = .015$ respectively; $R^2 = 0.293$).

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TABLE 1 Numbers and percentages of students' demographic and general information

	Number (*n*)	Percentage (%)
Grade		
1	121	26.2
2	67	14.5
3	81	17.5
4	82	17.7
5	111	24.0
Gender		
Male	153	33.1
Female	309	66.9
First choice in department		
Dentistry	249	53.9
Medicine	161	34.8
Pharmacy	1	0.2
Engineering	30	6.5
Other	21	4.5
Time to decide on dentistry		
Before high school	28	6.1
At high school	215	46.5
After high school	219	47.4
People who are effective in choosing dentistry		
Own decision	298	66.4
Parents	68	15.1
Friends	21	4.7
Teachers	19	4.2
Dentists	43	9.6
Having a dentist parent		
Yes	30	6.5
No	432	93.5

4 | DISCUSSION

According to 2020 data, Istanbul is Turkey's most populous and the world's 22nd most populous city in terms of urban population (urban population: 15 154 000).[22] This study was conducted in one of the well-established state universities of Istanbul. State and private universities in Istanbul are preferred by students from many different cities in the country in the university preference period every year. For this reason, the students that make up the sample of the present study were also students who completed their high school education in different regions and cities of the country. Therefore, the results of the study conducted with students from different sociocultural backgrounds may be generalisable to the entire country's population.

The present study is the first study conducted in all grades of the dental school in a state university in Turkey about students' choice of dentistry as a career, their motivation sources, and thought about specialisation and paediatric dentistry. Also, the large number of participants is one of the strengths of the study.

Until today, many studies have been conducted to explain students' choice of dentistry and their motivation sources.[12,19,20,23-26] The fact that most of these studies are questionnaire-based and different questionnaire types are applied in each makes it difficult to directly compare the findings.

Most of the students who participated in this study were females (66.9%). This finding was also consistent with the results of the study by Tanalp et al.,[12] which investigated the demographic profile and future expectations of students at a private dental school in Istanbul. In a study comparing the motivation of dental students in Germany, Finland and Turkey, it was stated that 55.2% of dental students in Germany, 61.5% of students in Finland and 69.2% of students in Turkey were females.[26] In this regard, in Turkey, it might be said that the female students more preferred dentistry as a career.

It was observed that more than half of the students who participated in the study preferred dentistry as their first choice (53.9%) and medicine as their second choice (34.8%). On contrary, the number of students who chose engineering or pharmacy as their first choice amongst dental students was quite low (6.5% and 0.2% respectively). These findings were in line with the results of another study conducted at a private dental school in Turkey.[12] When the factors that affect the choice of dentistry as a career were investigated, it was found that the most influential determinant was the personal decision in the study (66.4%). This was followed by parents (15.1%), dentists (9.6%), friends (4.7%) and teachers (4.2%) respectively. In parallel with these findings, Haslasch et al.[26] showed that the principal motivation sources of dental students in Turkey, Finland and Germany were "self-motivation." However, Aggarwal et al.[19] stated that dental students had been exceedingly influenced by parents or relatives. It has been argued that the reason for this is that most of the students live with their families until university age. However, as with the study of Hasclasch et al.[26] and the results of this study, it is clear that there are more independent choices that are less sensitive to environmental factors when it comes to generation Z. This generation, which is characterised by a desire for frequent feedback, a close relationship with their peers, teamwork, intense communication and a high level of proficiency in the use of modern technology, is to act independently and in line with their own decisions in choosing a profession.[27-30] Compared to generation Y, prestige and social status remain in the background, and empathy and professional responsibility for patients come to the fore in the choice of profession in generation Z, and the differences in dentistry choices and motivations show that they are strongly dependent on their own choices.[31]

In question "What do you think about dentistry?", 44.2% of all students marked the "difficult education" instead of all other options. Dental education ranks high in terms of difficulty compared to other vocational education. In addition to the financial burden of university education on families, there are also some additional costs due to the nature of dental education. Dental students have to cope with an increasing level of stress throughout their education

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TABLE 2 Views of the students on dentistry according to gender, clinical experience, time to decide to choose dentistry and influential people at choosing dentistry

	What do you think about dentistry? *n* (%)								
	Humanistic	Noble	Prestigious	High income	Independent	Difficult education	Hard practice	Social	Other
Gender									
Male	6 (3.9)	3 (2.0)	27 (17.6)	32 (20.9)	16 (10.5)	55 (35.9)	7 (4.6)	3 (2.0)	4 (2.6)
Female	16 (5.2)	9 (2.9)	70 (22.7)	35 (11.3)	14 (4.5)	149 (48.2)	12 (3.9)	4 (1.3)	0
p-value[a]	**.001**								
Clinical experience									
With clinical experience	12 (4.4)	6 (2.2)	56 (20.4)	37 (13.5)	13 (4.7)	134 (48.9)	10 (3.6)	3 (1.1)	3 (1.1)
Without clinical experience	10 (5.3)	6 (3.2)	41 (21.8)	30 (16.0)	17 (9.0)	70 (37.2)	9 (4.8)	4 (2.1)	1 (0.5)
p-value[a]	.314								
Time to decide to choose dentistry									
Before high school	15 (6.2)	12 (4.9)	51 (21.0)	35 (14.4)	14 (5.8)	104 (42.8)	10 (4.1)	1 (0.4)	1 (0.4)
After high school	7 (3.2)	0	46 (21.0)	32 (14.6)	16 (7.3)	100 (45.7)	9 (4.1)	6 (2.7)	3 (1.4)
p-value[a]	**.002**								
Influential people at choosing dentistry									
Personal decision	16 (5.4)	6 (2.0)	63 (21.1)	39 (13.1)	23 (7.7)	132 (44.3)	14 (4.7)	4 (1.3)	1 (0.3)
Parents	3 (4.4)	2 (2.9)	14 (20.6)	19 (27.9)	3 (4.4)	23 (33.8)	1 (1.5)	1 (1.5)	2 (2.9)
Other	2 (2.4)	4 (4.8)	20 (24.1)	6 (7.2)	4 (4.8)	41 (49.4)	3 (3.6)	2 (2.4)	1 (1.2)
p-value[a]	.098								

Abbreviation: *n*, number.

[a]Chi-square test, values in bold mean $p < .05$.

life.[32] The differences in the physical conditions of the faculties reveal country-wide differences in the quality of education. Despite the increase in the number of patients during internship periods, inadequate physical conditions cause students not to spare enough time for education and research. In addition, students cannot spare time for social activities due to intensive exam periods and internship sessions.[32] Since all these problems continue from the first grade of dental school to graduation, it was understandable why all students choose the "difficult education" option, regardless of groups such as gender and clinical experience.

In the second part of the questionnaire, where the reasons for choosing dentistry as a career and their future career plans were evaluated with the Likert-type scale, it was observed that the desire of female students to help other people in choosing dentistry was statistically significantly higher than males ($p = .001$). This finding was similar to some previous studies.[33,34] On contrary, the option of "being my own boss" was marked more by male students at a statistically significant level ($p = .012$). Although there were no significant differences between genders in terms of self-employment job opportunities in Halawany's study,[20] many studies have shown that males tend to have more independent job opportunities in dentistry in general.[4,13,35] When career plans for the future were examined, no statistically significant differences were observed between genders ($p > .05$). Postgraduate education and/or specialisation were seen as compulsory by both genders to a great extent. Also, a high percentage of students agreed with the options "It takes time to acquire practical skills" and "The increasing number of dentists and institutions poses a threat to dentistry." In a study conducted in Saudi Arabia,[36] it was shown that female students did not tend to postgraduate and/or specialisation education, and this situation was explained by the fact that women, unfortunately, undertake more familial functions in Middle Eastern and Arabic countries. On contrary, in developing countries such as Turkey that target women and men to take part on an equal footing in different business lines, the situation is different, as seen in the results of the current study. The results of the questionnaire part of students thought about their career future are similar to the findings of some studies.[19,20] In this study, students without clinical experience think at a statistically significant level that "it is easy to find a job" ($p = .015$), "it has more regular working hours" ($p = .001$) and "it pays more than other professions" ($p = .026$). These findings are an indication that dental students have more hopeless thoughts as they approach graduation.

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TABLE 3 Level of agreement with statements about motivation sources for dentistry choice and career thought according to genders

Question	Male					Female					*p-value*[a]
	Strongly disagree *n* (%)	Disagree *n* (%)	Undecided *n* (%)	Agree *n* (%)	Strongly agree *n* (%)	Strongly disagree *n* (%)	Disagree *n* (%)	Undecided *n* (%)	Agree *n* (%)	Strongly agree *n* (%)	
I choose to study dentistry because,…											
I've always wanted to be a dentist.	41 (27.0)	40 (26.3)	43 (28.3)	21 (13.8)	7 (4.6)	107 (34.6)	61 (19.7)	77 (24.9)	40 (12.9)	24 (7.8)	.208
Dentistry is a profession with high status.	5 (3.3)	10 (6.6)	36 (23.8)	79 (52.3)	21 (13.9)	3 (1.0)	20 (6.5)	57 (18.4)	174 (56.3)	55 (17.8)	.208
I was inspired by my dentist; I want to be like her/him.	54 (35.5)	43 (28.3)	34 (22.4)	12 (7.9)	9 (5.9)	104 (33.7)	67 (21.7)	75 (24.3)	43 (13.9)	20 (6.5)	.261
It's easy to find a job.	3 (2.0)	2 (1.3)	27 (17.8)	69 (45.4)	51 (33.6)	5 (1.6)	7 (2.3)	46 (14.9)	146 (47.2)	105 (34.0)	.885
It pays more than other professions.	2 (1.3)	4 (2.6)	39 (25.8)	81 (53.6)	25 (16.6)	5 (1.6)	9 (2.9)	71 (23.1)	163 (52.9)	60 (19.5)	.925
I want to help people.	8 (5.3)	20 (13.2)	48 (31.6)	44 (28.9)	32 (21.1)	4 (1.3)	14 (4.5)	81 (26.2)	103 (33.3)	107 (34.6)	**.001**
It has more regular working hours.	14 (9.3)	19 (12.6)	46 (30.5)	51 (33.8)	21 (13.9)	19 (6.1)	29 (9.4)	96 (31.1)	106 (34.3)	59 (19.1)	.411
I want to be my boss.	5 (3.3)	13 (8.6)	30 (19.7)	46 (30.3)	58 (38.2)	20 (6.5)	37 (12.0)	81 (26.3)	98 (31.8)	72 (23.4)	**.012**
Job opportunities abroad are good.	35 (23.0)	36 (23.7)	50 (32.9)	15 (9.9)	16 (10.5)	43 (13.9)	75 (24.3)	82 (26.5)	75 (24.3)	34 (11.0)	**.002**
I chose this profession randomly.	89 (58.6)	25 (16.4)	16 (10.5)	8 (5.3)	14 (9.2)	196 (63.4)	51 (16.5)	38 (12.3)	15 (4.9)	9 (2.9)	.066
The views on the future and career future:…											
It takes time to acquire practical skills.	1 (0.7)	17 (11.3)	56 (37.1)	51 (33.8)	26 (17.2)	6 (1.9)	18 (5.8)	116 (37.7)	124 (40.3)	44 (14.3)	.153
Specialisation training is a must in dentistry.	10 (6.6)	8 (5.3)	32 (21.2)	62 (41.1)	39 (25.8)	7 (2.3)	12 (3.9)	52 (16.9)	140 (45.5)	97 (31.5)	.798
The increasing number of dentists and institutions poses a threat to dentistry.	7 (4.6)	18 (11.9)	50 (33.1)	46 (30.5)	30 (19.9)	8 (2.6)	40 (13.0)	98 (31.8)	102 (33.1)	60 (19.5)	.798

Abbreviation: *n*, number.

[a]Chi-square test, values in bold mean $p < .05$.

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TABLE 4 Level of agreement with statements about the motivation sources for choosing dentistry and the future thoughts in career according to clinical experience

Question	Students with clinical experience					Students without clinical experience					
	Strongly disagree *n* (%)	Disagree *n* (%)	Undecided *n* (%)	Agree *n* (%)	Strongly agree *n* (%)	Strongly disagree *n* (%)	Disagree *n* (%)	Undecided *n* (%)	Agree *n* (%)	Strongly agree *n* (%)	*p*-value[a]
I choose to study dentistry because,...											
I've always wanted to be a dentist.	85 (31.1)	52 (19.0)	78 (28.6)	39 (14.3)	19 (7.0)	63 (33.5)	49 (26.1)	42 (22.3)	22 (11.7)	12 (6.4)	.290
Dentistry is a profession with high status.	4 (1.5)	14 (5.1)	56 (20.6)	147 (54.0)	51 (18.8)	4 (2.1)	16 (8.5)	37 (19.7)	106 (56.4)	25 (13.3)	.359
I was inspired by my dentist; I want to be like her/him.	105 (38.5)	62 (22.7)	56 (20.5)	36 (13.2)	14 (5.1)	53 (28.2)	48 (25.5)	53 (28.2)	19 (10.1)	15 (8.0)	.064
It's easy to find a job.	8 (2.9)	6 (2.2)	49 (17.9)	126 (46.2)	84 (30.8)	0	3 (1.6)	24 (12.8)	89 (47.3)	72 (38.3)	**.015**
It pays more than other professions.	6 (2.2)	11 (4.0)	67 (24.6)	148 (54.4)	40 (14.7)	1 (0.5)	2 (1.1)	43 (23.0)	96 (51.3)	45 (24.1)	**.026**
I want to help people.	7 (2.6)	19 (7.0)	74 (27.1)	99 (36.3)	74 (27.1)	5 (2.7)	15 (8.0)	55 (29.3)	48 (25.5)	65 (34.6)	.170
It has more regular working hours.	27 (9.9)	31 (11.4)	96 (35.3)	83 (30.5)	35 (12.9)	6 (3.2)	17 (9.0)	46 (24.5)	74 (39.4)	45 (23.9)	**.001**
I want to be my boss.	22 (8.1)	28 (10.3)	63 (23.2)	90 (33.1)	69 (25.4)	3 (1.6)	22 (11.7)	48 (25.5)	54 (28.7)	61 (32.4)	**.019**
Job opportunities abroad are good.	52 (19.0)	68 (24.9)	82 (30.0)	47 (17.2)	24 (8.8)	26 (13.8)	43 (22.9)	50 (26.6)	43 (22.9)	26 (13.8)	.143
I chose this profession randomly.	161 (59.0)	46 (16.8)	32 (11.7)	17 (6.2)	17 (6.2)	124 (66.0)	30 (16.0)	22 (11.7)	6 (3.2)	6 (3.2)	.283
The views on the future and career future:...											
It takes time to acquire practical skills.	6 (2.2)	18 (6.6)	94 (34.6)	110 (40.4)	44 (16.2)	1 (0.5)	17 (9.1)	78 (41.7)	65 (34.8)	26 (13.9)	.219
Specialisation training is a must in dentistry.	14 (5.1)	12 (4.4)	47 (17.3)	119 (43.8)	80 (29.4)	3 (1.6)	8 (4.3)	37 (19.8)	83 (44.4)	56 (29.9)	.385
The increasing number of dentists and institutions poses a threat to dentistry.	9 (3.3)	24 (8.8)	77 (28.3)	93 (34.2)	69 (25.4)	6 (3.2)	34 (18.2)	71 (38.0)	55 (29.4)	21 (11.2)	**.001**

Abbreviation: *n*, number.

[a]Chi-square test, values in bold mean $p < .05$.

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TABLE 5 Thoughts of the students about the future according to gender and clinical experience

Question	Answer	Gender			Degree		
		Male *n* (%)	Female *n* (%)	*p*-value[a]	With clinical experience *n* (%)	Without clinical experience *n* (%)	*p*-value[a]
Do you intend to specialise after graduation? If yes, which dentistry branch would you like to specialise in?	Oral and maxillofacial surgery	37 (24.5)	52 (16.9)	**.001**	60 (21.9)	29 (15.7)	**.001**
	Oral and maxillofacial radiology	2 (1.3)	5 (1.6)		6 (2.2)	1 (0.5)	
	Paediatric dentistry	3 (2.0)	27 (8.8)		22 (8.0)	8 (4.3)	
	Endodontics	5 (3.3)	6 (1.9)		10 (3.6)	1 (0.5)	
	Orthodontics	31 (20.5)	73 (23.7)		45 (16.4)	59 (31.9)	
	Periodontology	10 (6.6)	10 (3.2)		20 (7.3)	0	
	Prosthodontics	11 (7.3)	9 (2.9)		14 (5.1)	6 (3.2)	
	Restorative Dentistry	5 (3.3)	14 (4.5)		14 (5.1)	5 (2.7)	
	I've not decided yet.	35 (23.2)	107 (34.7)		72 (26.3)	70 (37.8)	
	I don't intend to specialise.	12 (7.9)	5 (1.6)		11 (4.0)	6 (3.2)	
Where would you like to work after graduation?	My own clinic	35(22.9)	39 (12.7)	**.012**	42 (15.3)	32 (17.2)	**.001**
	Another physician's clinic	98 (64.1)	213 (69.4)		157 (57.3)	154 (82.8)	
	Private hospital	10 (6.5)	17 (5.5)		27 (9.9)	0	
	State hospital	0	3 (1.0)		3 (1.1)	0	
	In a university as an academic staff	4 (2.6)	26 (8.5)		30 (10.9)	0	
	I will not practice dentistry.	0	1 (0.3)		1 (0.4)	0	
	I don't know.	6 (3.9)	7 (2.3)		13 (4.7)	0	
	Other	0	1 (0.3)		1 (0.4)	0	
What can end your dental education?	Healthy problems	56 (36.8)	135 (44.0)	.257	96 (35.0)	95 (51.4)	**.001**
	Financial difficulties	8 (5.3)	12 (3.9)		11 (4.0)	9 (4.9)	
	New opportunities	27 (17.8)	36 (11.7)		49 (17.9)	14 (7.6)	
	Losing interest in the profession	39 (25.7)	88 (28.7)		67 (24.5)	60 (32.4)	
	Other	22 (14.5)	36 (11.7)		51 (18.6)	7 (3.8)	
Will you try to switch to another undergraduate program?	Yes	35 (22.9)	39 (12.7)	**.005**	42 (15.3)	32 (17.2)	.591
	No	118 (77.1)	268 (87.3)		232 (84.7)	154 (82.8)	

Abbreviation: *n*, number.

[a]Chi-square test, values in bold mean $p < .05$.

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TABLE 6 Thoughts of the students about paediatric dentistry according to gender

Question	Answer	Gender		
		Male *n* (%)	Female *n* (%)	*p*-value[a]
What do you think about paediatric dentistry?	Favorable	19 (46.3)	32 (45.7)	.084
	Prestigious	0	1 (1.4)	
	Essential	7 (17.1)	17 (24.3)	
	Effective	2 (4.9)	4 (5.7)	
	Scientific	1 (2.4)	2 (2.9)	
	Attractive	0	1 (1.4)	
	Simple	5 (12.2)	0	
	Valuable	7 (17.1)	13 (18.6)	
	Inexpensive	0	0	
What could be the reasons that lead you to choose paediatric dentistry in the future?	At least one of the parents being paediatric dentists	20 (48.4)	14 (20.0)	**.005**
	One of my friends being a paediatric dentist	1 (2.4)	1 (1.4)	
	Personal interest	10 (24.4)	17 (24.3)	
	Willingness to work with children	0	3 (4.3)	
	Experience to work with children	4 (9.8)	26 (37.1)	
	High income in paediatric dentistry	0	1 (1.4)	
	Self-improvement opportunities	6 (14.6)	7 (10.0)	
	High social status	0	1 (1.4)	
	Desire to heal children	0	0	
	Desire to be a researcher in paediatric dentistry	0	0	

Abbreviation: *n*, number.

[a]Chi-square test, values in bold mean $p < .05$.

Similarly, Al-Bitar et al's.[33] study showed that determinants related to the dentistry career were significantly more in first-grade dental students than in senior dental students. These determinants were "easy for dentists to find employment," "dentistry pays better" and "flexible working hours."[33] A study conducted by Du Toit et al.,[37] which includes quality evidence about dental students in Turkey, showed that motivation for the first choice was the most "the money."[37]

When the branches to be specialised in were evaluated, it was found that the vast majority of participants wanted to specialise in orthodontics and oral and maxillofacial surgery. The branches preferred by the students showed a statistically significant difference according to both their gender and their clinical experience ($p = .001$ and $p = .001$ respectively). These results were in line with the results of the studies by Tanalp et al.[12] and Hatipoglu.[13] In both studies, it was observed that orthodontics and oral and maxillofacial surgery were the most preferred specialisation branches amongst Turkish dental students.[12,13] These two branches are usually regarded as the top branches amongst dentists that behove a specialist's assessment and treatment. For this reason, most students might have preferred these two branches.[12] It is thought that the other reasons for Turkish dental students to choosing orthodontics and oral and maxillofacial surgery are income and prestige. Whilst income and prestige are important factors for students in countries in the Middle East, this is not the case for students from countries in Europe, North America and Australia. The main reasons for this may be sociocultural and socioeconomic differences and expectations.[13,35,37]

When the institutions they wanted to work in after graduation were questioned, it was seen that most of the students wanted to work in another physician's clinic. The institutions they wanted to work with showed a statistically significant difference according to both their gender and their clinical experience ($p = .012$ and $p = .001$ respectively). Studies have shown that working in private clinics rather than state institutions is more preferred. The most important reasons for this situation may be considered as higher income and the opportunity to live in the desired city.[4,13,38] On the other hand, students might want to work in another physician's clinic because it is expensive to open a private clinic in Turkey. When the factors that are thought to can end dental education were examined, the majority of students thought that health problems might have cause this. In a study conducted by Avramova et al.,[39] similar to the results of the present study, it was stated that students were most likely to think that health problems could end dental education. Another study conducted in the school of dentistry in a state university in Turkey by Uraz et al.[40] showed that third-, fourth- and fifth-grade students have more physical and mental health problems

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TABLE 7 Multiple regression analysis of variables that influence the always dream of becoming a dentist

	Unstandardised coefficients			Collinearity statistics	
	B	Std. Error	*p*-value†	Tolerance	VIF
(Constant)	−0.835	0.672	.214		
Age	0.056	0.026	**.030**	0.798	1.253
Gender[a]	−0.165	0.113	.144	0.871	1.148
Time to decide on dentistry[a]	−0.057	0.116	.622	0.978	1.023
First choice in department[a]	0.747	0.102	**<.001**	0.952	1.050
Grade	0.226	0.116	.053	0.872	1.146
Having a dentist parent	0.636	0.212	**.003**	0.941	1.063
I choose to study dentistry because,...					
Dentistry is a profession with high status.	0.298	0.067	**<.001**	0.750	1.334
I was inspired by my dentist; I want to be like her/him.	0.237	0.043	**<.001**	0.893	1.120
It's easy to find a job.	0.138	0.055	**.013**	0.740	1.352
It pays more than other professions.	−0.205	0.084	**.015**	0.532	1.880
It has more regular working hours.	0.054	0.053	.309	0.700	1.429
I want to be my boss.	0.009	0.050	.853	0.725	1.379
Job opportunities abroad are good.	0.046	0.044	.298	0.830	1.205
R^2	0.293				

Abbreviations: B, unstandardised regression coefficient; R^2, coefficient of determination; Std, standard; VIF, variance inflation factor.

[a]Female, at high school, and dentistry were coded as reference groups.

†Multiple linear regression, values in bold mean $p < .05$.

than first- and second-grade students. These findings, supported by the study findings, confirm that dental students experience more stress and health problems in the clinical periods of undergraduate education.

Paediatric dentistry in Turkey in recent years has become one of the popular branches of specialisation in dentistry. Paediatric dentists diagnose, prevent and treat all aspects of oral diseases in the paediatric population.[18] In the study, fifth-grade students considered that "paediatric dentistry is favourable, essential and valuable" respectively. When factors that may cause students to specialise in paediatric dentistry in the future were questioned, it was observed that female students chose the option of "experience to work with children" statistically significantly ($p = .005$). In parallel with these findings, in the study of Arora et al.,[18] it was observed that a very high proportion of the participants who specialise in the branch of paediatric dentistry choose this department due to their clinical experience with children. A study conducted in Nigeria[21] stated that the primary reason of students chose paediatric dentistry was their "desire to improve children's health." Options "willingness to work with children" and "experience to work with children" followed respectively.[21] In summary, patients in the paediatric population were a major factor in choosing this branch.

One of the main limitations of the study is that it does not represent all Turkish students who are studying in dental schools, and students from different state and private dental schools from different cities of the country were not included. In addition, there is a possibility that the motivations and attitudes for choosing dentistry may change under different factors since not all participants have the same facilities. Only some sociodemographic determinants were examined in the study. The effects of more and different sociodemographic and sociocultural factors on the motivations and attitudes of students can be evaluated.

5 | CONCLUSION

From the results of the study, it can be concluded that the majority of Turkish students were self-motivated in choosing dentistry as a career. Gender and the time to decide on dentistry as a career have an impact on opinions about the dental profession. Similarly, gender has an impact on "wanting to help people," "wanting to be my own boss" and ideas about "good job opportunities abroad." In addition, clinical experience is an effective factor in the reasons for choosing a profession and in future plans. Within the limitations of this study,

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the career motivations of Turkish dental students seemed to be associated with the socioeconomic aspects of dentistry, whereas the perceptions regarding the future of dentistry seemed to be associated with the need for postgraduate education. Gender and clinical experience were found to be effective variables on postgraduate specialty and place of employment, and clinical experience was also found to have an effect on ideas about what might end dental education. "Personal interest" and "working experience with children" are the main factors for female senior dental students to consider wanting to specialise in paediatric dentistry, whilst for males it is "one of the parents being a paediatric dentist." Further cross-cultural studies, both cross-sectional and longitudinal, using validated surveys will provide us with a larger perspective on this topic.

CONFLICT OF INTEREST

The authors have nothing to disclose.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author [B.S.] upon reasonable request.

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REFERENCES

1. Kazi AS, Akhlaq A. Factors affecting students' career choice. *J Res Reflect Educ*. 2017;2:187-196.
2. Campbell J, Dussault G, Buchan J, et al. A universal truth: no health without a workforce. Forum Report, Third Global Forum on Human Resources for Health, Recife, Brazil. Geneva: Global Health Workforce Alliance and World Health Organization; 2013.
3. Wu LT, Low MM, Tan KK, Lopez V, Liaw SY. Why not nursing? A systematic review of factors influencing career choice among healthcare students. *Int Nurs Rev*. 2015;62(4):547-562.
4. Dhima M, Petropoulos VC, Han RK, Kinnunen T, Wright RF. Dental students' perceptions of dental specialties and factors influencing specialty and career choices. *J Dent Educ*. 2012;76(5):562-573.
5. Aleksejūnienė J, Načaitė M, Pūrienė A, Bachanek T, Chałas R. Self-perceptions about the profession of dentistry-comparisons between Lithuanian and polish university graduating students. *Eur J Dent Educ*. 2019;23(4):431-436.
6. Efeoğlu A, Demirhan Erdemir A, Öncel Ö. Geçmisten Günümüze Türk Diş Hekimliği. İstanbul: Türk Dünyası Araştırmaları Vakfi; 2000; 100. [In Turkish]
7. Turkish Dental Association. Number of faculties by years 2020. http://www.tdb.org.tr/sag_menu_goster.php?Id=344. Accessed February 27, 2021 [In Turkish].
8. The Higher Education Institution. All universities with a dentistry program. https://yokatlas.yok.gov.tr/lisans-bolum.php?b=10049. Accessed November 19, 2021 [In Turkish].
9. The Higher Education Institution. Statistics. https://istatistik.yok.gov.tr. Accessed November 19, 2021.
10. Turkish Dental Association. In order not to waste the resources of the country; a faculty of dentistry should not be opened without manufacturing planning. https://www.tdb.org.tr/icerik_goster.php?Id=3506. Accessed November 20, 2021 [In Turkish].
11. Measuring, Selection and Placement Center. 2020 - Higher education institutions exam (YKS). Guide to higher education programs and quotas. https://dokuman.osym.gov.tr/pdfdokuman/2020/YKS/tkilavuz13082020.pdf. Accessed November 20, 2021 [In Turkish].
12. Tanalp J, Ilguy D, Dikbas I, Oktay I. Demographic profile and future expectations of students enrolled in a Turkish private dental school. *J Dent Educ*. 2012;76(6):800-809.
13. Hatipoglu O. Factors that affect the career and speciality preferences of dentistry students in Turkey. *J Clin Diagn Res*. 2019;13(6):6-11.
14. Acharya S. Knowledge and attitude of general and specialist dentist in pediatric dentistry: a pilot study in Odisha, India. *Indian J Dent Res*. 2019;30(2):170-174.
15. Rank RCIC, Vilela JER, Rank MS, Ogawa WN, Imparato JCP. Effect of awards after dental care in children's motivation. *Eur Arch Paediatr Dent*. 2019;20(2):85-93.
16. Casamassimo PS, Seale NS, Rutkauskas Ii JS, Rutkauskas JS, Are US. Dentists adequately trained to care for children? *Pediatr Dent*. 2018;40(2):93-97.
17. Stewart CJ, Moloney EJ, Kinirons MJ. Clinical experiences of undergraduate dental students in pediatric dentistry at Cork University dental school and hospital, Ireland. *J Dent Educ*. 2010;74(3):325-330.
18. Arora R, Panwar NK, Dhar V. Reason for choosing pediatric dentistry as career – survey among post-graduate dental students. *J Oral Health Comm Dent*. 2011;5(2):86-89.
19. Aggarwal A, Mehta S, Gupta D, et al. Dental students' motivations and perceptions of dental professional career in India. *J Dent Educ*. 2012;76(11):1532-1539.
20. Halawany HS. Career motivations, perceptions of the future of dentistry and preferred dental specialties among Saudi dental students. *Open Dent J*. 2014;8:129-135.
21. Folayan MO, Sofola OO, Khami MR, et al. Study motives, career choices and interest in paediatric dentistry among final year dental students in Nigeria. *BMC Med Educ*. 2014;14:130.
22. Demographia. Demographia world urban areas: 2020. http://www.demographia.com/db-worldua.pdf. Accessed February 27, 2021.
23. Karibe H, Kawakami T, Suzuki A, et al. Career choice and attitudes towards dental education amongst dental students in Japan and Sweden. *Eur J Dent Educ*. 2009;13(2):80-86.
24. Yan X, Zhang X, Jinno Y, et al. Career choice and future design of dental students in China and Japan. *Int Dent J*. 2014;64(2):68-75.
25. dos Santos BF, Nicolau B, Muller K, Bedos C, Zuanon AC. Brazilian dental students' intentions and motivations towards their professional career. *J Dent Educ*. 2013;77(3):337-344.
26. Haslach SD, Aytepe Z, Kokkari A, et al. Country and gender differences in the motivation of dental students-An international comparison. *Eur J Dent Educ*. 2018;22(4):e724-e729.
27. Cho M, Bonn MA, Han SJ. Generation Z's sustainable volunteering: motivations, attitudes and job performance. *Sustainability*. 2018;10(5):1400.
28. Abdel Meguid EM, Khalil MK. Measuring medical students' motivation to learning anatomy by cadaveric dissection. *Anat Sci Educ*. 2017;10(4):363-371.
29. Chaudhuri JD. Stimulating intrinsic motivation in millennial students: a new generation, a new approach. *Anat Sci Educ*. 2020;13(2):250-271.
30. Boysen PG 2nd, Daste L, Northern T. Multigenerational challenges and the future of graduate medical education. *Ochsner J*. 2016;16(1):101-107.
31. Herz MM, ElAyouti A. Motives for studying dental medicine in Germany. *Eur J Dent Educ*. 2021;1-10.

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32. Pöhlmann K, Jonas I, Ruf S, Harzer W. Stress, burnout and health in the clinical period of dental education. *Eur J Dent Educ*. 2005;9(2):78-84.
33. Al-Bitar ZB, Sonbol HN, Al-Omari IK. Reasons for choosing dentistry as a career by Arab dental students. *Eur J Dent Educ*. 2008;12(4):247-251.
34. Scarbecz M, Ross JA. The relationship between gender and postgraduate aspirations among first- and fourth-year students at public dental schools: a longitudinal analysis. *J Dent Educ*. 2007;71(6):797-809.
35. Baharvand M, Moghaddam EJ, Pouretemad H, Alavi K. Attitudes of Iranian dental students toward their future careers: an exploratory study. *J Dent Educ*. 2011;75(11):1489-1495.
36. Al-Dlaigan YH, Albarakati SF, Al-Habeeb F, Al-Hulaily M. Career characteristics and postgraduate education of female dentist graduates of the college of dentistry at King Saud university, Saudi Arabia. *Saudi Dent J*. 2012;24(1):29-34.
37. Du Toit J, Jain S, Montalli V, Govender U. Dental students' motivations for their career choice: an international investigative report. *J Dent Educ*. 2014;78(4):605-613.
38. Vigild M, Schwarz E. Characteristics and study motivation of Danish dental students in a longitudinal perspective. *Eur J Dent Educ*. 2001;5(3):127-133.
39. Avramova N, Yaneva K, Bonev B. First-year dental students' motivation and attitudes for choosing the dental profession. *Acta Med Acad*. 2014;43(2):113-121.
40. Uraz A, Tocak YS, Yozgatligil C, Cetiner S, Bal B. Psychological well-being, health, and stress sources in Turkish dental students. *J Dent Educ*. 2013;77(10):1345-1355.

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