

# Motivational Factors Influencing Career Choices of Moroccan Dental Students

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## Abstract

This study aims to investigate the factors that motivate dental students to choose dentistry as a career. A questionnaire-based survey involving 752 dental students from the only two Moroccan dental schools was conducted between April and May 2011. The questionnaire was designed in terms of financial factors, human factors and working conditions factors. The students were asked to rank the career choices' set of questions on a five point Likert scale from 1 (strongly disagree) to 5 (strongly agree). The internal reliability of the scale was investigated using Cronbach's alpha coefficient and validity was investigated by a confirmatory principal component analysis. Results indicate that dentistry has a noble function; the "desire to help people" and "job opportunities" determines career choice among Moroccan dental students. Another result that emerged from the study is that men were motivated by working conditions factors ( $p=0.025$ ) while women were motivated by human factors ( $p=0.001$ ). In brief, the results of the present study can be used by health policy makers to persuade students to pursue dentistry as a career.

*Key words: Moroccan dental students, Career choice, Motivational factors*

## Introduction

Moroccan schools of Dentistry offer a five-year program of professional study leading to the degree of Doctor of Dental Medicine. Dental studies prepare students for careers in the modern world of dentistry by combining clinical training with basic and advanced dental sciences. Once students have mastered basic competencies in the academic skills facilities, they move on to treating patients in the University Dental Hospital. Dental school admission processes are typically testified by assessing applicants' Baccalaureate scholastic records, in addition to an admission test designed to evaluate their knowledge in mathematics, physics and natural sciences. Fulfillment of the minimum requirements does not guarantee acceptance as the number of qualified applicants ( $N=1000$ ) exceeds the number of available positions ( $N=150$ ).

Recently, several characteristics of dental students have been researched in relation to motivational factors. For instance, the Zadik et al. study of dental students revealed great emphasis placed upon the importance of financial motivations such as income and financial security, with 'person orientated' factors such as 'helping people' being low in priority [1].

Although there is general agreement on the range of motivating factors that may impact the choice of dentistry as a career, motivational factors may vary over time and between countries [2-7]. Furthermore, there is a growing recognition that the emerging workforce has very different expectations to those of earlier generations. Evidence indicates that these expectations have implications for health profession and the performance of health systems [1].

Moreover, some studies have found that male and female students differ in their motivation. For example, women tend to be more motivated by human factors, while men are more motivated by financial reasons [2]. French dental students,

however, mentioned social status as a key factor that influences their dental career; in fact, there was a statistically significant difference between the students who had dentistry as a first choice and the rest of students who stated the medical aspect of the profession as their major motivation [7].

A close examination of the motivational factors influencing career choices of dental students could better help health policy-makers to meet the immediate needs of dental students. For example, Abbott and al. showed that the understanding of students' motivations could help dental faculty to adapt the ideal recruitment tool [8]; it also allowed them to give students a better image of the profession [2]. In short, a good understanding of the factors that motivates the choice of dental medicine studies allow a better adaptation of curricula and evaluations [9,10] and facilitate good interaction between faculty and students [1].

Since 2003, Moroccan tertiary education has been subject to a global reform concerning pedagogy and content, governorship, regulations, quality assurance, as well as students' life and development. However, an important issue that has received the most attention in higher education reform is strengthening the link between dental studies and the needs of the job market. Degree transparency, the pooling of resources and collaboration instead of stark competition were ingredients of the new educational reform [11]. Changes have affected mainly content, now dentistry programs are so diversified to boost quality teaching, attack waste and repetition, and increase students' enrolment. Within this context, Moroccan dental faculties were led to increase staff by 57% in Casablanca and 50% in Rabat; two new university dental programs were launched, namely, Dental Prosthetists, and dental Assistant programs [12].

Recently, a number of studies have investigated the

motivations underlying the career choice of dental students. However, as yet, no studies have been conducted on motivational factors that influence career choice among Moroccan dental students. Accordingly, the present study aims to bring into focus the factors motivating Moroccan dental students in their choice of profession. Specifically, the study seeks to investigate sex differences and the primary factor motivating career choice.

## Materials and Methods

A cross-sectional survey was conducted utilizing a 30-item questionnaire, measured on a five-point Likert scale ('strongly agree' to 'strongly disagree') [2,4,7,13,14]. A total of 752 Moroccan Dental students aged  $20.86 \pm 2.03$  years, from Casablanca and Rabat Dental Schools participated in the study.

The anonymous questionnaire consisted of two sections. Section one addressed socio-demographic characteristics, while section two dealt with career choices data. The items were grouped into 3 dimensions (financial factors, human factors, working conditions factors); some items were used to measure the influence of family and friends, while other items were independent (Appendix).

The questionnaires were administered to the students at the end of the lectures, practicum or tutorials, without limiting response time; answers were collected immediately to minimize data loss and avoid bias. The students surveyed were informed about the purpose of the study and expressed their willingness to participate in the study.

Data analysis consisted of a statistical description of the population studied. The internal reliability of the scale was examined, using Cronbach's alpha coefficient and validity was examined by a confirmatory principal component analysis. The purpose of this analysis was to combine different items in sizes for the perception of dentistry as a career as well as the factors that motivated this choice [2,4,7,13,14]. The number of factors to be extracted was set to three, factor one (the human factor) related to the aspect of the profession that allowed to help others and to the nature of oral health care; factor two related to working conditions, namely flexibility in appointments; it is composed of elements that suggest that dentists be autonomous and flexible in using time than in other professions; factor tree related to financial security and employment in dentistry. Oblimin rotation was used.

**Table 1.** Demographic Characteristics of the Participants.

Characteristics	N° (%)
Sex women	569 (75.8)
Age (year) mean (SD)	20.86 (2.03)
<b>Year</b>	
1 <sup>st</sup>	122 (16.2)
2 <sup>nd</sup>	197 (26.2)
3 <sup>rd</sup>	196 (26.1)
4 <sup>th</sup>	126 (16.8)
5 <sup>th</sup>	110 (14.6)
<b>Faculty</b>	
Casablanca	407 (58.4)
Rabat	290 (41.6)

The factors influencing the choices were ranked according to their score. The study of the association of scores according to sex and the fact that dentistry was a first choice was performed by student's test. SPSS 16.0 software was used for data analysis.

## Results

Of the 900 questionnaires printed and distributed, 752 were returned (a response rate of 83.5%). Those who filled the form and thus were included in the study were 183 males (24.2%) and 569 females (75.8%). 16.2% were first-year students, 14.6% were 5th-year students while 2nd, 3rd and 4th-year students accounted for 26.2%, 26.1%, and 16.8% of the respondents, respectively. Their mean age was 20.86 years (SD=2.03) (Table 1).

When asked about the parents' job, the respondents showed that their parents had a career in education (20.5% for fathers and 18.5% for mothers). 7.7% said that one of their parents had a profession in health care (7.7% for fathers & 5.7% for mothers). However, more than half of the mothers were housewives (Table 2).

36.1% said that dentistry was their first choice, around 23.0% cited general practice as their first choice, 14.5% had decided to study engineering and 7.9% opted for business and management as their first choice (Table 3). The percentage of students who chose dentistry as their first choice was inversely related to the year of study, in fact, 57.4% of first-year students said dentistry was their first choice, whereas 27.2% of 5th-year students cited dentistry as their primary choice ( $p < 10^{-4}$ ) (Table 4).

The fact that dentistry is a noble job had a score of 6.81, followed by the "love to help people" with score of 6.78. "To be self-employed" ranked third with a score of 6.70, followed by the factor "helping people to improve their aesthetic appearance" (score of 6.66). Parents were the least important factor in the choice of dentistry as a career (Table 5).

**Table 2.** Profession of the parents.

Profession of the mother	
Housewife	399 (53.1)
Health Career	43 (5.7)
Teaching	139 (18.5)
Other	<b>170 (22.6)</b>
Profession of the father	
No Profession	23 (3.1)
Health Career	58 (7.7)
Teaching	157 (20.9)
Other	<b>513 (68.3)</b>

**Table 3.** First choice for graduate studies.

First choice for graduate studies	N°	%
Dentistry	271	36.1
General Medicine	173	23.0
Engineering	109	14.5
Business and Management	59	7.9
Architecture	43	5.7
Administration	18	2.4
Agriculture	8	1.1

**Table 4.** Association between year of study and choosing dentistry as a first choice.

Year of study	Dentistry as a first choice N° (%)	P
1 <sup>st</sup>	70 (57.4)	<10 <sup>-4*</sup>
2 <sup>nd</sup>	80 (40.6)	
3 <sup>rd</sup>	63 (32.1)	
4 <sup>th</sup>	29 (23.0)	
5 <sup>th</sup>	28 (27.2)	

\*P: degree of significance

**Table 5.** Classification of items determined by mean rating.

	Mean Rating	SD
Q18 : Noble function	6.81	2.25
Q29 : Helping people	6.78	2.21
Q10 : Being self-employed	6.70	2.39
Q11 : Helping people to improve their appearance	6.66	2.27
Q23 : Caring profession	6.61	2.18
Q22 : prestigious job	6.36	2.36
Q19 : Working with hands	6.23	2.37
Q27 : Insuring financial independence	6.23	2.12
Q20 : Science-based function	6.20	2.41
Q15 : Autonomy	5.92	2.35
Q3 : Good grade in the Baccalaureate	5.83	2.59
Q7 : Self-employment soon after graduation	5.80	2.67
Q30 : Not related to death	5.60	2.63
Q21 : Make a lot of money	5.45	2.61
Q13 : Work with people	5.24	2.47
Q9 : Dentistry pays better than other jobs	5.16	2.64
Q8 : Easiness of finding a job	5.15	2.64
Q17 : Having more time to spend with the family	5.01	2.69
Q16 : Job Security	4.99	2.45
Q12 : More regular working hours than in other professions	4.87	2.50
Q25 : I heard about it in high school	4.63	2.67
Q4 : My family persuaded me	4.61	2.95
Q28 : Not too stressful function	4.56	2.62
Q5 : Other people have convinced me	4.36	3.04
Q6 : I have always wanted to be a dentist	4.28	3.04
Q24 : I heard about in college	4.17	2.67
Q14 : Good memories when visiting the family dentist	4.16	2.57
Q26 : My dentist's family encouraged me	3.22	2.69
Q2 : One or more of my friends are dentists	1.98	2.62
Q1 : One or more of my parents are dentists	1.58	2.49

significant difference regarding financial factors was reported between both sexes. Scarbecz et al. reported that American students showed no statistically significant difference between the sexes on financial grounds and those relating to working conditions [2]. By contrast, Jordanians dental students reported that men were more motivated by financial factors than women. The latter were more motivated by flexible working conditions [13]. Our results converged with those found in the literature on motivational factors among dentists; this shows that Moroccan women dental students were more motivated by human factors of dentistry than their male peers [2,13-18].

To conclude, we can claim that the results of the present

Table 6 shows the factor loadings as well as the variance explained by each dimension and the cumulative variance. The three factors explained 43.4% of the variance. The items "noble function" and "prestigious job" were part of the human factor item (Table 6).

The calculation of Cronbach's alpha ( $\alpha$ ) confirmed the internal reliability of the scale (0.79).

The study also showed that there were differences in motivation between males and females; males more motivated by working conditions ( $p=0.025$ ); women, however, were more motivated by human factors ( $p=0.001$ ). On the other hand, no statistically significant difference between the sexes was found regarding financial factors. Moreover, the influence of human factors and working conditions was higher among students who had dentistry as a first choice (Table 7).

## Discussion

This study included all Moroccan dental students, enrolled in first through fifth year during the academic year 2010-2011. The response rate was very high, about 84% higher compared to a study by Omolola et al. who scored a response rate of 73% [14]. Approximately 36% of the students chose dentistry as their first choice, a score similar to that reported by Skelly et al. (33%) [15]. These percentages are still lower compared to Jordanian students who cited dentistry as their first choice [13]; French dental students first choice represented a proportion of 41% [7]; while Irish dental students recorded the highest percentage with almost two frequently cited as a second choice [4]. General medicine was the most popular profession for those who did not choose dentistry first. These results are consistent with the published literature in this area [4,7,13,14]. In the present study, the percentage of students who mentioned dentistry as their first choice was inversely related to the year of study ( $p<10^{-4}$ ). This could be explained by a better understanding of the profession of dentistry by new graduates.

The average score calculated to measure the influence of family and friends was very low. In contrast, in Nigeria, the influence of family and friends was significantly higher [14]. However, among Jordanian students, family influence was important for those for whom dentistry was not a first choice [13].

As for Moroccan students, the factor that had the highest score was associated with the "noble function," factor; the fact that dentistry is "prestigious" was ranked sixth. The results were similar to a study reported by Gietzelt who showed that the prestige factor was ranked seventh among students who chose dentistry as their first choice [5]. For American students, this was the least important factor [2]. For Jordanian students; the fact that dentistry was associated with prestige was cited as the most important factor [13]. The differences recorded among Arab students could be accounted for by cultural differences among countries in the MENA region.

Men were more motivated by flexible working conditions, while women were motivated by human factors which allowed people to take care of people and improve the aesthetic appearance of their faces. However, no statistically

**Table 6.** Factor loadings on primary motive factor.

	Factor		
	Human	Work Conditions	financial
Q9. Dentistry pays better than other job options open to me			0.74
Q10. I want to be self-employed			0.55
Q21. I want to make a lot of money			0.67
Q27. Dentist's function ensures financial independence			0.45
Q11. I want to help people to improve their appearance	0.55		
Q13. I like working with people	0.43		
Q18. Dentistry is a noble function	0.70		
Q22. The job of the dentist is prestigious	0.59		
Q23. Dentistry is a function that allows taking care of people	0.79		
Q29. I love helping people	0.71		
Q8. It is easy for dentists to find a job		0.40	
Q12. Dentist's function has more regular hours than in other professions		0.54	
Q15. I like the autonomy that dentists have		0.61	
Q16. Dentist's function offers job security		0.65	
Q17. Dentist's function give me time to spend with my family		0.62	
Q28. Dentist's function is not too stressful		0.55	
Percentage of variance explained	18.29	13.29	11.84
Percentage of cumulative variance explained		31.58	43.42

**Table 7.** Comparison of scores by gender and if dentistry was the first choice.

Factors (Cronbach's alpha)	Mean rating (SD)	Mean rating (SD)		p	Mean rating (SD)		p
		F	M		1 <sup>st</sup> Choice	Not the 1 <sup>st</sup> Choice	
Human (0,66)	5.97 (1.38)	6.06 (1.34)	5.68 (1.48)	0.001	6.25 (1.34)	5.81 (1.38)	<10 <sup>-3</sup>
Work conditions (0,71)	5.08 (1.54)	5.01 (1.56)	5.30 (1.43)	0.025	5.31 (1.45)	4.95 (1.57)	0.002
Financial (0,64)	5.88 (1.68)	5.87 (1.63)	5.93 (1.85)	0.702	5.92 (1.63)	5.86 (1.72)	0.628

SD: Standard Deviation

F: Female

M: Male

study can help health policy makers adapt their messages to persuade Moroccan students to pursue dentistry as a career. They should also place a great emphasis on flexibility as a potential advantage compared to other health care professions, including general medicine. Indeed, dentistry allows students to find the right balance between work and family life; this

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is especially true for women. Women may enjoy financial independence by practicing a liberal profession and at the same time have time for family commitments. Furthermore, the personal satisfaction that dentists might have in improving the quality of life of their patients is a decisive argument to convince students to choose dentistry as a career [19-21].

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