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Motivational reasons for choosing dentistry as a professional career & factors affecting specialty choice among final year dental students[☆]

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ABSTRACT

The study aimed to evaluate factors affecting the choice of dentistry as a career as well as the choice of future specialty among senior dental students registered in British University of Egypt (BUE), during the academic year 2016/2017. A questionnaire form was downloaded from the students learning forum (e-learning), the students were then asked to fill up the form and hand it in during class. Results: Out of 200, 181 students responded to the survey, with a response rate of 90.5%. 67% of the students chose dentistry according to their own will, 20.1% due to family pressure, while only 12.8% were due to their high school grades. Fixed prosthodontics was the most favored specialty among the students who aimed for further postgraduate education (23.8%) while endodontics ranked as the second most popular specialty (22.7%) and Oral surgery came in the third rank (11%). There was a statistically significant difference between males and females in choosing fixed prosthodontics as well as oral pathology (p -value ≤ 0.001). Multiple regression analysis showed that "High school category" showed statistical significance in the prediction, $p < 0.05$ Conclusion: 67% of our respondents think they were given sufficient inspiration and guidance to decide on future plans, while, 39% of these students were guided by faculty staff members, which constituted the highest influence rather than recommendations from practicing dentists, family members or friends.

1. Introduction

Nowadays, there are numerous professional careers, therefore the choice the right career choice plays a major role in moulding the student's future [1]. Moreover, choosing a future career for students in the health profession is of great interest for educators and admission committees, particularly in the field of dentistry [2].

Students who choose dentistry as a professional career demonstrate a wide range of motivational factors [3] and since the dominant motivational factors may vary over time and between countries, seeking an understanding of current motivations to enter the dental health care workforce is critical to health care systems and may result in major changes for policies in dental education [4,5].

Dentistry provides a wide range of career and business opportunities as a general practitioner as well as a specialist. Many factors contribute to the students' decision with regards to motivation and the reason to choose a specific medical specialty [6]. Whether one chooses a specific specialty due to advice from friends or family, admiration of a certain

mentor or genuine interest in the specialty, there are several incentives and factors that converge to result in the final decision [2,7]. While motivations do vary according to specialties, they may include lifestyle choices, a possibility of private practice, an interest in specific diseases, a varied scope of practice, an interest in research and teaching, or to gain a higher income [8]. It is also imperative to realize the importance of future specialty choices and the impact these decisions have on the dentists' workforce in Egypt.

This gives rise to a pivotal question, that is whether the workforce is able to meet the demands of patients on a national level, considering the constant population growth, and subsequently, if specialties which are available in Egypt are able to meet not only the demands of the population but also the desires of junior doctors. Many countries have conducted research for determining the factors that led people to choose a specific specialty over others [9–15].

To date no documented data is available in these premises on the national level, so the aim of our study was to evaluate the motivational factors affecting the choice of dentistry as a career as well as the choice

[☆] A cross-sectional study was conducted in December 2016. Our study sample consisted of final year students registered in the Faculty of Dentistry, British University of Egypt (BUE), during the academic year 2016/2017.

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of future specialty among senior dental students in British University in Egypt.

2. Study design and participants

This cross-sectional study was conducted in December 2016. Our study sample consisted of final year students registered in the Faculty of Dentistry, British University of Egypt (BUE), during the academic year 2016/2017.

All of fifth year students were invited to participate in the study. After explaining the study objectives, the participants were assured of confidentiality of the collected information and that they were free to decline participation in the study.

A questionnaire form (available from the corresponding author) was made downloaded to the students learning forum (e-learning), the students were then asked to fill up the form and hand it in during class. 181 filled forms were returned and only n (19%) students declined to participate in the study without citing any reason. The data were manually entered and stored anonymously in electronic format as a Microsoft Excel 2010 file.

Validation of the survey was completed through a thorough review, which revealed that there were no specific reports in the literature on Egyptian dental students' perceptions of dental specialties and scarce data on the analysis of variables such as demographics and influencing factors on their specialty or career choices.

As a result, the survey was created de novo by the authors, who reviewed the content with the research team and the statistician to ensure that questions were quantitative and reflected appropriate phrasing.

The survey was designed in a checklist form, and it proceeded as follows, investigating demographics, academic characteristics of the students, then moving on to questions exploring their motivational factors for choosing dentistry as a career in the first place and finally ending questions about their future career plans.

3. Results

Statistical analysis was carried using IBM® SPSS® Statistics Version 20 for Windows. The mean and standard deviation values were calculated for the numerical data of the studied groups. Descriptive statistics were reported as proportions for categorical variables, with chi-square tests performed when contingency tables had any cell size $n \geq 10$ and Fisher exact test when $n < 10$.

The significance level was set at $P \leq 0.05$. Statistical analysis was performed with IBM® SPSS® Statistics Version 20 for Windows.

Out of 200 final year students in British University in Egypt (BUE), 181 students responded to the survey, with a response rate of 90.5%.

Table 1 demonstrates the sociodemographic characteristics of the study population. Female students accounted for (49.2%), while male students constituted (50.8%) of our sample. Most of the participants were Egyptians (97.8%). A large proportion of the students were enrolled in the national educational system mostly in the private schools sector rather than the public or the governmental sector. While international education systems trailed back at the end of the list concerning high school categorization. Fairly a large proportion of the participants belong to households, where the maternal/paternal education was a university degree or post graduate studies.

When students were asked about the influential factors that affected their choice to join the dental profession. The results came with the highest responses in favour of the students' own will followed by family pressure. While choices dictated by high school grades scored the least (Fig. 1).

In Table 2, as the participants were asked to outline their thoughts as senior students, (26.7%) regretted joining the dental school, for the main reason of leading a stressful lifestyle, while the educational expenses and lengthy educational program constituted a considerable

Table 1
Frequency distribution of the demographic variables of study participants.

Variables		n	%
2) Age	Mean \pm SD	22.03 \pm 0.59	
3) Gender	Female	89	49.2
	Male	92	50.8
4) Nationality	Egyptian	176	97.8
	Non-Egyptian	4	2.2
5) High school categorization	Public school	55	30.4
	Private school	102	56.4
	International education	24	13.3
6) Father's education	High school or less	5	2.8
	Diploma	14	7.7
	Bachelor degree	91	50.3
7) Mother's education	Master or PhD	71	39.2
	High school or less	7	3.9
	Diploma	23	12.7
8) Have you got any relatives in the dental profession?	Bachelor degree	119	65.7
	Master or PhD	32	17.7
	No	107	59.8
If yes:	Yes	72	40.2
	1 st degree relative	37	50.7
	2 nd degree relative	23	31.5
	3 rd degree relative	72	40.2

proportion of the dissatisfaction causes.

As a matching proportion to the “dissatisfied” participants, 26% of the students considered shifting careers following graduation. On the other hand almost 80% of the responses came in favour of seeking a specialization field through the enrolment in post graduate studies following graduating from the dental school.

Fixed prosthodontics was the most favored specialty among the students who aimed for further postgraduate education with total count of 43 students (23.8%) while Endodontics ranked as the second most popular specialty as it was selected by 41 students (22.7%), Oral surgery however, came in the third rank.

There was a statistically significant difference between males and females in choosing fixed prosthodontics as well as oral pathology (p -value ≤ 0.001) in (Fig. 2).

The participants preferred a specialty mostly for being challenging, having a positive impact on their patients' lives & tackling interesting dental problems with counts of 82 (45.6%), 78 (42.2%) & 54 (29.2%) respectively. The anticipated financial reward was the concern of 48(25.9%) of the respondents (Fig. 3).

Thirty four (18.4%) of the respondents choice to join a certain speciality was influenced by their role models in the profession. Their choice however was less influenced by the speciality prestige and working hours, 35(18.9%) & 14(7.6%). However, there was no statistically significant difference between genders regarding the reasons behind speciality choice.

Multiple regression analysis was used to identify whether variables as gender, School category, Fathers' education, Mothers' education, presence of relatives who work in the dental field Encouragement from dental school and external advices might affect senior students' choice whether to specialize or not following graduation.

Only the students' “High school category” variable showed statistical significance in the prediction, $p < 0.05$. While, none of the other variables showed any statistical significance, $p > 0.05$ (Table 3).

4. Discussion

Our study documents pioneer data regarding the motivational factors that might be involved in the choice of dentistry as a profession as well as explores attitudes towards postgraduate specialization among final year undergraduate dental students of the British University in Egypt (BUE).

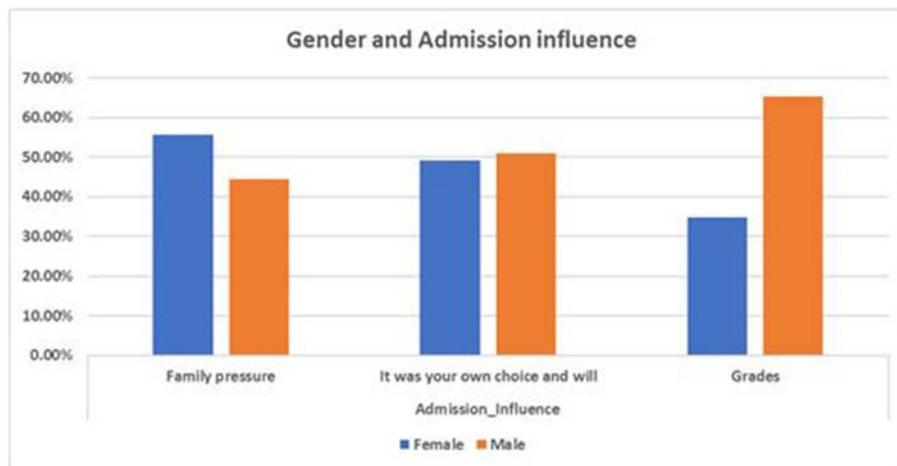


Fig. 1. Motivational factors for choice of dental profession among genders.

Table 2

Satisfaction to the decision for joining dental school.

Variables		no	%
As a senior year student, are you satisfied with your decision of joining the dental school?	Yes	132	73.3
	No	48	26.7
Reasons for discontent, if any	Difficult	34	18.4
	Length	45	24.3
	Stress	120	64.9
	Expense	53	28.6
	Competitive	14	7.6
Do you consider a “career shift” after graduating?	Yes	47	26
	No	134	74

Final year students were the target group of this study, as well as previous researches [16,17] since younger students might be still building up their decision and formulating their outlooks on their future career path, moreover, our participants had already progressed through the clinical final years, which might have helped them choose their future specialty based on actual familiarity with different vocational aspects as well as working under close supervision of the faculty members.

The specially formulated questionnaire that was filled in by the senior students yielded a response rate of 90.5% that is higher than other questionnaire-based studies in the same research field and thus it increases the validity of the study [18].

In Egypt, most of the students live with their families who not only

sponsor their educational expenses but also play a major role in shaping their future career lives through influencing their choices for pursuing a medical/dental profession, and this is not only limited to the time of admission to vocational schools but even extends till after graduation as they may play a role in encouraging them to carry on further post-graduate studies for the reasons of decent income, professional eminence & self-employment. Other authors as Tangade et al. [19] & Aggarwal et al. [20] also reported that the students in their surveys were greatly influenced by their parents concerning taking important decision. On the other hand, Canadian student's inclinations according to Karibe et al. [21] did not demonstrate any familial impacts.

Though, it was found that the most eminent reason for joining dental school was the “students' own will” and “preference” (67%) followed by “family influence” (20%). Indirect influence from family members possibly plays a role in shaping the students inclinations and attitudes towards the future career. Those influences were also suggested by earlier studies as Aggarwal et al. [20] and Karibe et al. [21].

It was expected hence to find that only 12.8% of our study sample were driven only by their grades to join the dental school, as opposed by the former study conducted in India [21], which paradoxically stated that a percentage as high as 38% of their sample, were enrolled into the dental school just because of their scores.

A Similar observation was also noted among Japanese and Thai students in a study by Karibe et al. [21] This was not the case in the current study since in Egypt we do not have a common admission test for medical and dental schools, and students tend to become accepted

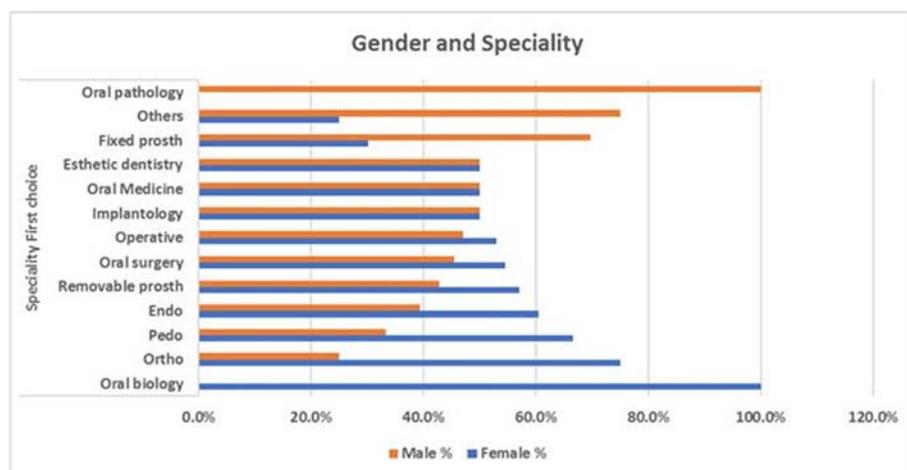


Fig. 2. Effect of gender on speciality preference.

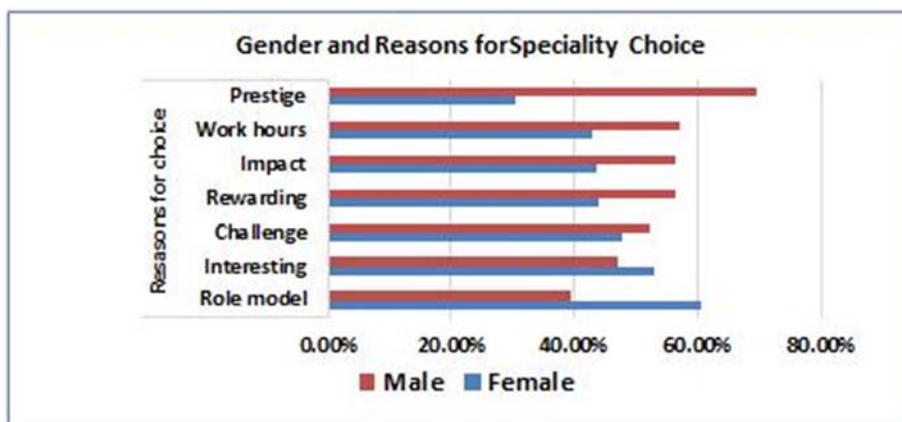


Fig. 3. Motivational factors for speciality choice among genders.

only in accordance with their scores obtained at the high school. Despite of that, it could be possible still that some participants considered joining the dental school because their grades would not qualify them for the medical school.

Our survey revealed that seeking a prestigious professional status was the most commonly chosen motivational factor (70%) for joining the dental school. Financial security, family concerns and ensuring relatively a secure job were the following priorities in a decreasing order. Previous studies however, in the United Kingdom [22], United States [23] and Scandinavia [24] reported dissimilar priorities, as "academic interest and interpersonal motives" were chosen more often by their participants over other socioeconomic reasons. On the other hand other, a former survey in Brazil by Aguiar et al. [25], revealed that "stable work" was the most valid factor for choosing dentistry in the first place followed by financial factors.

However, results may even vary in the same community with time, or more conveniently with the phrasing or wording of the survey questions, this is evident in from the results of the cross cultural study, carried out by Karibe et al. [21], as authors revealed that students in the

United Kingdom showed great interest professional status, financial rewards, and security.

Almost three quaters of the students were satisfied from their decision of joining the dental school, a substantial percent (26%) of the students, however, were discontent with their choice. This proportion is consistent with those obtained from dental school students in Canada, Japan & Thailand (20–40%) [21]. The most commonly reported reason was the stressful lifestyle the students lead during school years, this could be explained by the comprehensive curriculum that involves academic tutoring as well as hands on training in most specialties with substantial workload. Sanders and Lushington [26] also reported that Australian dental students perceive workload as a stressful factor. Another study reported that 83% of the U.K. dental students found that the dental curriculum required harder work than they had expected before joining the program. In contrary, the most common reason for discontent, as reported by Canadian students was the lack of clinical training [20].

Expenses constituted a considerable concern for (29%) of the students this could be explained by the need to carry out the practical

Table 3
Multiple regression analysis of variables affecting specialization choice.

Model	After graduation career						
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
Gender							
Female	-.004	.064	-.005	-.065	.948ns	-.130	.122
Male							
High_School_Category	.115	.049	.180	2.337	.021*	.018	.212
Public school							
Private school							
International education school							
Father_Edu	.057	.042	.124	1.354	.177ns	-.026	.140
High school or less							
Bachelor degree							
Master/PhD degree							
Mother_Edu	.006	.040	.013	.149	.881ns	-.074	.086
High school or less							
Bachelor degree							
Master/PhD degree							
Relatives_Y_N	-.003	.065	-.004	-.049	.961ns	-.131	.125
Yes							
No							
Encouraged by School:	-.064	.066	-.075	-.975	.331ns	-.195	.066
Yes							
No							
Advice	.050	.063	.062	.803	.423ns	-.074	.175
Yes							
No							

training with materials and instruments manufactured overseas whose prices have increased substantially over the past years & this adds on to the expenses of the tuition. As well, American students in a research conducted by, Yap et al. [27] reported that financial responsibilities constituted the most common reason for stress. Similarly, Canadian students perceive increasing educational debt as a considerable reason for discontent in a later study.

Twenty four percent of our students were discontent with the length of the program, which is a 5-year school curriculum in addition to a vocational training year before earning a permit to work as a general practitioner. Since only one fourth of the students were concerned about the length of the program, this coincides with the results collected from French & Thai students in previous studies whose program also has a total of six years [18].

A good quarter of the students considered shifting careers following graduation, and it's obvious that this percentage could be closely related to the proportion of the participants who had reasons to be discontent about.

Regarding the future career options, more than three quarters of the study group consider specializing rather than working as general practitioners, this finding clearly opposes those of similar studies [28,29], where fairly the higher percentage of their groups tended to prefer general practice over specializing, despite the higher professional status and annual income the students could earn, this was directly related to the increased tuition fees and debt limitations that might adversely influence the students decisions in countries where paying for higher education primarily depends on debts, and this rather makes them want to enter a private practice right after graduating to pay their debts.

On the other hand, it is understandable that our sample of the BUE students rather seek specialization following graduation to secure more financial stability as practitioners tend to get better career opportunities and a greater flow of patients as they earn a further degree in a specialty. Thai students tend to have a similar inclination, however driven by the notion that urban areas in Thailand are over populated by general practitioners [20].

On the contrary, 2 of our respondents were indecisive about their future plans, which is strikingly lower than previously quoted figures [30–32]. As authors of those studies speculated that their students did not receive sufficient guidance and exposure to various dental specialties, through the school years, clearly this is not the case in our study, due to program variations as students are offered hands on training and contact specially in the last three years of the program where, not only students avail of the advantage of more profound exposure and vocational training but also closer communication with their mentors. This explains why, 67% of our respondents think they were given sufficient inspiration and guidance to decide on future plans despite the absence of a solid counseling and guidance program offered to the students. In addition to that, 39% of these students were guided by faculty staff members, which constituted the highest influence rather than recommendations from practicing dentists, family members or friends. This too highlights the significant role of the teaching staff in shaping the perspectives of the undergraduates.

The lack of formal career counseling and guidance was blamed for the higher level of indecisiveness among Kuwaiti medical students despite being exposed to training in various specialties [8], A reason which was also rated as a significant deterring factor against deciding on future plans among medical students in the united states as well [22].

Since societal and financial factors were vital incentives for our students, fixed prosthodontics, endodontics and maxillofacial surgery earned the highest figures regarding specialization, this goes side by side with the growing trend in the population of improving esthetics as well as the fact the these specialization could bring upon higher patients flow, with subsequent financial reward, clientele and pleasing outcomes. However, studies conducted in the US, UK, India, Canada &

Japan reported that Orthodontics was the most popular and largely pursued specialty by their dental graduates [16,21,29,31,33].

It is worth mentioning that, when scrutinizing the views of undergraduates regarding their future plans, it might be more applicable to consider that a number of students may change their plans to practice, financial or social reasons. For this reason we recommend that a wider research could be carried out on the undergraduates and alumni of the variable Egyptian Dental faculties and results of which could be taken into account when planning the future dental workforce in Egypt, in order to ensure that the ever evolving needs of the population are met adequately.

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