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3 **Research Article**

4 **Motivational factors for pursuing dentistry as a profession in**
5 **colleges of Karachi, Pakistan**

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15

16 **Abstract**

17 **Objective:** To determine the reasons that motivated students to seek admission
18 in dental colleges, and to assess differences in the reasons between students
19 studying in private and public dental colleges.

20 **Methods:** The cross-sectional analytical study was conducted at two public-
21 sector and four private-sector dental colleges in Karachi from June to September,
22 2018, and comprised students of first to final year of studies. Data was collected
23 using a self-administered questionnaire. Students were asked to mark all reasons
24 that they considered had been an influencing factor on their decision to opt for
25 dentistry. Data was analysed using SPSS 21.

26 **Results:** Of the 900 forms distributed, 814(90.4%) were collected with complete
27 data; 182(22.4%) males and 632(77.6%) females. The overall mean age was

28 20.8 \pm 1.3 years. Of the total, 324(39.8%) students were from the public sector,
29 while 490(60.2%) were at private colleges. A statistically significant difference
30 was noted in professional and personal reasons cited by the two groups of students
31 ($p<0.05$).

32 **Conclusion:** It is of utmost importance that students shall be very clear regarding
33 their expectations from a career to minimise chances of abandoning it midway or
34 being professionally dissatisfied even after completing a degree.

35 **Key Words:** Dental students, Profession, Motivational factors.

36

37 **Introduction**

38 Selection of a profession is a crucial decision that generally has major
39 repercussions on future life patterns of a student irrespective of the field of study.¹

40 Reasons behind pursuing a certain career have a great impact on the effort,
41 attention and enthusiasm that the students would put into their studies to excel.
42 This in turn shapes their future professional life and helps them in being
43 successful in their chosen career.

44 Over the recent years, dentistry has grown in popularity and has a decent position
45 in society as a professional career. Opportunities to study dental sciences in many
46 countries, particularly in the less-developed, are restricted to a select proportion
47 of society. Pakistan, a developing country, has an estimated population of more
48 than 210 million with only about 25,000 registered dentists. Keeping these
49 statistics in mind, Pakistan has an approximate dentist-to-population ratio that
50 exceeds 1:8,500.² This places a huge obligation on dental colleges to admit only
51 those candidates who they deem socially and professionally suitable, so that they
52 can be beneficial to serving the community in the long run. It is of utmost
53 importance that the reasons of students that made them pursue dentistry as a
54 profession are clear.^{3,4}

55 Educators have tried to study and understand the reasons for motivation of
56 students to select a career in health professions.^{5,6} In Pakistan, the Bachelors of

57 Dental Surgery (BDS) is a four-year programme, followed by one year of clinical
58 work. It is imperative for students to get admission in dental colleges with realistic
59 prospects about the profession they are about to pursue. With unrealistic
60 expectations, by the time they might realise that dentistry may not meet their
61 prospects, it may be too late to change their chosen profession. This apprehension
62 may cause student to drop out midway or abandon the profession after completing
63 the degree. Pursuing a career in this frame of mind may cause professional
64 discontent, resulting in dentists practising inefficiently and without interest.⁶

65 As with any career path, there can be a multitude of reasons as the deciding
66 factor.^{5, 7} These may be related to personal, financial, professional or vocational
67 reasons. Several studies have been done in developed countries to ascertain the
68 reasons of dental students to proceed with a career in dentistry, either by choice
69 or because of certain circumstances.⁸⁻¹¹ Relatively less research has been carried
70 out in the developing countries to ascertain the motivation behind this line of
71 work.^{3, 5, 12} A search involving Google Scholar, PubMed and Pak Medi Net
72 databases from 1999 to 2019 could not find any studies assessing the motivational
73 factors of students enrolled in dental colleges of Pakistan to opt for dentistry as a
74 profession. As such, the current study was planned to determine the reasons that
75 had motivated students of public and private dental colleges of Karachi to pursue
76 a career in dentistry, and to assess if there were any differences in the motivational
77 factors of the two groups of students.

78

79 **Subjects and Methods**

80 The cross-sectional analytical study was conducted from June to September,
81 2018, at six dental colleges in Karachi, and comprised students of first to final
82 year of studies. After approval from the ethics review board of Jinnah Sindh
83 Medical University (JSMU), students were approached in two public-sector
84 institutions, namely, Dr. Ishrat-ul-Ebad Khan Institute of Oral Health Sciences
85 and Sindh Institute of Oral Health Sciences, and four private-sector colleges,

86 namely, Jinnah Medical and Dental College, Ziauddin College of Dentistry, Sir
87 Syed College of Medicine for Girls, and Altamash Institute of Dental Medicine.
88 We estimated the total number of students enrolled in dental colleges of the city
89 to be approximately 3,500. This estimate was obtained by adding the total number
90 of students allowed by Pakistan Medical and Dental Council (PMDC) to be
91 enrolled in the recognized dental institutions of Karachi.¹³ The sample size was
92 calculated using OpenEpi 3.01 for epidemiological statistics.¹⁴ As we had no
93 specific outcome target, the sample size was calculated on the assumption that
94 the anticipated maximum frequency of outcome factor was 50%.¹⁵ The required
95 sample size at 99.9% confidence level was 828. Inflating this by 10% to keep the
96 non-responders and incomplete forms in consideration, the final sample size
97 targeted was 900 students.

98 Data was collected using a self-administered questionnaire adapted from
99 literature.^{6,7} As the questionnaire had never been carried out in local setting, a
100 pilot study was done with 13 female and 7 male dental students. The students
101 were questioned directly to gather their feedback on the administered
102 questionnaire. After assessing their feedback regarding clarity and contextual
103 appropriateness of the questions, relevant changes were made in the questions
104 concerned. All ambiguous or unclear items were rephrased. The forms were then
105 distributed using convenience sampling to students of all the four years enrolled
106 in the six dental colleges. Students were given the option of only mentioning their
107 college as a public- or private-sector institution for maintaining anonymity if they
108 desired. Moreover, to maintain confidentiality, names of participants were also
109 not recorded. Students who refused to give consent were excluded.

110 After obtaining written informed consent, the questionnaire was disseminated by
111 the researchers. These forms were distributed at the end of one of their mandatory
112 lectures and were collected right afterwards. Ample time was given to the
113 students to understand and fill out the form. Any ambiguities that the students had
114 when filling the forms were addressed and cleared by the researcher present there.

115 This helped in maximising the response rate and minimising the chances of
116 missing data. Part one of the questionnaire included sociodemographic details of
117 the students, and part two inquired about the reasons that made them opt for
118 dentistry as a profession. The reasons were divided into four major categories:
119 economic, professional, vocational and personal. Students were asked to mark all
120 the reasons that they considered had been an influencing factor on their decision
121 to pursue dentistry.

122 Data analysis was done using SPSS 21. Descriptive statistics of baseline
123 characteristics, like age, gender, type of college, career choices etc., and their
124 responses to the questions asked were computed. To assess difference of choices
125 among public and private dental college students, chi-square test was used.
126 $P < 0.05$ was considered statistically significant.

127

128 **Results**

129 Of the 900 forms distributed, 814(90.4%) were collected with complete data;
130 182(22.4%) males and 632(77.6%) females. The overall mean age was 20.8 ± 1.3
131 years. Of the total, 324(39.8%) students were from the public sector, while
132 490(60.2%) were at private colleges; and 460(56.5%) said there had been career
133 counselling in their schools prior to their decisions of choosing their careers.

134 Dentistry was the first and foremost choice of profession for 559(68.7%) students
135 (Table 1). Out of the 255(31.3%) students who did not opt for dentistry by choice,
136 188(78.3%) had sought a career in medical sciences (MBBS) as the first choice.
137 This inclination towards medicine was equally evident in both genders; 49 males
138 (74%); 139 females (80%). Few of the other career preferences included business
139 administration 09 (3%), armed forces 06 (2.5%), arts 05 (2%) and engineering 05
140 (2%).

141 In terms of the motivating factor, 438(53.8%) said dentistry offered a stable job,
142 361(44.3%) had the will to help people, 331(40.7%) said encouragement of

143 friends and family to pursue the career was the reason, and 309(38%) said
144 dentistry was a challenging and interesting career (Table 2).

145

146 **Discussion**

147 The current study is presenting the first comprehensive data on reasons that led
148 undergraduate dental students of Karachi to pursue dentistry as a profession.

149 Among the students in the current study, there were more females, which is
150 comparable to results reported in other studies.^{6, 10, 16-18} It reflects the increasing

151 global trend of females opting for professional careers, including dental surgery,
152 compared to males. The most frequently cited motivation for studying dentistry

153 by women was their belief that dentistry offers stable work and it will help them
154 to serve the community. Encouragement of family and friends and flexibility in

155 determining their work hours so as to keep a balance between their personal and
156 professional lives were also major reasons cited by females to pursue dentistry.

157 A highly significant difference was seen between the two genders ($p < 0.001$)
158 whereby more females agreed to the fact that not having much 'on-call' work was
159 one of the reasons for them to choose a career in dentistry.

160 In the present study, 31.3% students opted to pursue dentistry only because they
161 were unable to attain the required marks for admission into their preferred first

162 choice of career, which in our study was medicine. Similar results were seen in
163 studies carried out in both developed and developing countries.^{7,10,19} This

164 situation may lead to dissatisfaction, resulting in dentists who practise
165 inefficiently because their only reason for pursuing dentistry in the first place was

166 inability to attain admission into medical college. Admissions process in dental
167 colleges needs to be altered so as to ensure that students who are passionate about

168 the dental profession manage to get admissions, as opposed to getting admission
169 because of not being accepted in medicine. The reason behind choice of career is

170 significant because it may affect one's contentment and satisfaction with their

171 career over the years. It might lead to students dropping out during the
172 undergraduate years or not practising dentistry after graduation.

173 Among economic factors, dentistry offering a stable job (53.8%) and the fact that
174 dentistry pays better than other professions (22.1%) were two major reasons for
175 students to select dentistry. These findings are similar to Aguiar et al.⁶, who
176 reported that stable work (51.6%) and the belief that lots of money can be made
177 in the dental profession (12.3%) were the major economic factors for students of
178 Brazil. In contrast, Karibe et al.²⁰ reported that a very small number of Japanese
179 (11.4%) and Swedish (25.6%) students considered money as a reason to choose
180 dentistry. Being a developing country, it is not surprising that the notion of
181 earning well after graduation can be a major driving force for our students to opt
182 for dentistry as a profession.

183 Comparable to studies by Aggarwal et al.⁷ and Bernabe et al.²¹ the yearning to
184 help society and bring about an improvement in their appearances were the most
185 cited vocational reasons by participants of our study too. In the present study,
186 dentistry being a challenging career (38%) was the most stated professional
187 reason for pursuing dentistry followed by the fact that dentists can have flexible
188 working hours (33.4%) with no 'on-call' emergency shifts as in medicine (27%).
189 Contrary to our findings, Aguiar et al.⁶ concluded that being answerable to their
190 own selves (30.5%) was the most cited reason along with flexibility of deciding
191 their own hours. Aggarwal et al.⁷ said Indian students gave primary importance
192 to being able to control their working hours (44.4%), and, secondly, to being their
193 own boss (36.6%).

194 Encouragement by family and friends to pursue dentistry (40.7%) was a major
195 personal reason to pursue dental sciences for our study participants. This may in
196 large be due to the fact that in our culture, families play an important role in
197 making decisions for their children as majority of them still live with their parents
198 at the time of deciding a career. This is comparable to studies conducted on other
199 populations with similar cultural norms, where families also had strong influence

200 on students deciding their career paths.^{7, 20, 22, 23} These students might just have
201 got admission in dental school because of family pressures and may not be very
202 keen on practising dentistry once they graduate.

203 While our study encompassed a large number of students studying in private and
204 public dental colleges of Karachi, the results cannot be generalised to the sub-
205 urban regions or other major cities of Pakistan. A study shall be conducted in the
206 future to evaluate if there is any difference of factors and opinions of dental
207 students in the rest of the country. Studies shall also be directed to see if the
208 motivational factors to choose the career had an impact on their professional life,
209 including their interest in pursuing dentistry and doing specialisation after
210 graduation.

211

212 **Conclusion**

213 Professional and vocational were the foremost reasons for students of both public
214 and private dental colleges of Karachi to pursue dentistry. It is critical that the
215 students were very clear in their expectations.

216

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218 **Conflict of Interest:** None.

219 **Source of Funding:** None.

220

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285 Career choice and attitudes towards dental education amongst dental

Dentistry by	Public n (%)	Private n (%)	Total n (%)	p-value
Chance	140 (43.2)	115 (23.5)	255 (31.3)	0.00*
Choice	184 (56.8)	375 (76.5)	559 (68.7)	

286 students in Japan and Sweden. *Eur J Dent Educ.* 2009;13:80-6.

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288 -----

289 **Table 1: Studying Dentistry by choice or chance**

290 Chi square test was applied.

291 *p-value of <0.05- as statistically significant

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295 **Table 2: Motivational factors of students for choosing dentistry.**

Motivational Factors		Public n (%)	Private n (%)	Total n (%)	p-value
Economic reasons	It is easier for dentist to find a job	40 (4.9)	83 (10.2)	123 (15.1)	0.073
	I want to make a lot of money	65 (8.0)	111 (13.6)	176 (21.6)	0.379
	Dentistry offers stable work	178 (21.9)	260 (31.9)	438 (53.8)	0.599
	Dentistry pays better than other available professions	81 (10.0)	99 (12.2)	180 (22.1)	0.107
Professional reasons	I can have a flexible work schedule	112 (13.8)	160 (19.7)	272 (33.4)	0.571
	I can be my own boss	56 (6.9)	128 (15.7)	184 (22.6)	0.003*
	I can earn money every day	14 (1.7)	47 (5.8)	61 (7.5)	0.005*
	I will not be on a salary	13 (1.6)	26 (4.4)	49 (6.0)	0.05*
	Dentistry is an challenging and interesting career	118 (14.5)	191 (23.5)	309 (38.0)	0.461
	There are no "on calls" in dentistry	105 (12.9)	115 (14.1)	220 (27.0)	0.005*
	I can work in several fields of dentistry after graduation without a specialty	92 (11.3)	111 (13.6)	203 (24.9)	0.064
Vocational reasons	I like to interact with others	61 (7.5)	112 (13.8)	173 (21.3)	0.169
	I like helping people	143 (17.8)	218 (26.8)	361 (44.3)	0.921
	I have good hand/ manual skills	97 (11.9)	135 (16.6)	232 (28.5)	0.460
	I like to treat people to improve their appearance	119 (14.6)	174 (21.4)	293 (36.0)	0.723

Personal reasons	Dentists in my family encouraged me	36 (4.4)	100 (12.3)	136 (16.7)	0.001*
	Family and friends encouraged me	137 (16.8)	194 (23.8)	331 (40.7)	0.444
	Not able to enter medical school	74 (9.1)	47 (5.8)	121 (14.9)	0.000*
	My family dentist encouraged me	26 (3.2)	84 (10.3)	110 (13.5)	0.000*
	I heard a talk about dentistry in high school	64 (7.9)	120 (14.7)	184 (22.6)	0.114

296 - Chi square test was applied.

297 - *p-value of <0.05 considered statistically significant

298 - Note: More than one option in each group could be selected.

299

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