

Characteristics and Study Motivation of Clinical Dental Students in Nigerian Universities

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Abstract: A cross-sectional study of a cohort of 197 clinical dental students in the four accredited dental schools in Nigeria was conducted to determine the sociodemographic characteristics of these dental students and their motives for the choice of dentistry. The results indicate that the number of female dental students in Nigeria is increasing, which reflects a trend well established in virtually all other nations. The vast majority of Nigerian dental students (97 percent) qualified for school based on their performance on the University Matriculation Examination. About one-third, 32.5 percent, indicated that dentistry was their first choice for a career. This choice was greatly influenced by family in 50 percent of this group of students. There were several factors that strongly influenced career choice among students who indicated that dentistry was their first choice: interest, prestige, good employment opportunity abroad, and regular work hours. The need to go into a prestigious and financially lucrative profession similar to medicine were the commonest reasons identified by the group of students for whom dentistry was not the first career choice. The motives for choosing dentistry as a career in this group of students seem to relate to an image of dentistry as a vehicle for the achievement of personal goals. It is recommended that high school students be encouraged to see dentistry first hand. This is because in countries such as Nigeria it is not unusual for a potential dental student to have never visited the dentist.

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Dentists occupy an important position in society as licensed health care workers.^{1,2} The professional socialization of dentists begins with admission to dental school and continues through the entire study period.^{1,3} A survey of the literature on motives for choosing dentistry as a career reveals that prospective dental students have a number of distinctive characteristics.^{1,4-7} The need for status and prestige appears for many to be a desirable and sought after objective.^{1,5} This implies that the acquisition of money may be one of the more important factors underlying the perceived prestigious image projected by the dental profession.

Studies of how individuals select careers demonstrate that many individuals find themselves in occupations not really knowing why they were propelled in that particular direction. Others make career decisions by taking the path of least resistance—for example, following a career path advocated by their

parents or following in the footsteps of an elder sibling.^{1,5,8}

The choice of a career is a critical decision that has an obvious impact on a future life pattern. It is also important to understand the priorities and sociodemographic backgrounds of those choosing to study dentistry. This is because economic factors may influence an individual's level of commitment to the profession. Also of interest is the extent to which societal changes influence the choice of dentistry. Studies of choice of dentistry as a career have shown that the number of female dental students has increased in the past decade. It has also been reported that most women choose dentistry because they believe they will be able to balance effectively their personal and professional lives as dentists.⁹ Other reasons for the increase in female enrollments in dental school include: opportunity to work with people, financial gain, prestige, and the perception

among women that they can serve the community as dentists.^{1,4,5,7}

In general, the choice of a career is influenced mainly by advice from parents, relatives, friends, teachers, and counsellors. However, variations occur from one population to the other. In most developed countries like Finland,² United Kingdom,⁹ and the United States,³ talking to relatives or friends in the dental profession were the most influential factors. In most developing countries, advice from teachers and parents appeared to be more relevant.^{10,11} However, among South African students, status and financial security appeared to be the most relevant factors in the choice of dentistry as a career.^{4,5}

In Nigeria, the majority of admissions into undergraduate programs is determined using scores obtained at the University Matriculations Examinations conducted by the Joint Admissions Matriculation Board. A predetermined cut-off point is used to enroll successful candidates into the degree programs. Admissions into programs in the health sciences usually require very high scores. Medicine and dentistry are the courses with the highest scores required for eligibility.

A number of studies have been carried out on the characteristics, motivations, and aspirations of medical students in Nigeria.¹¹⁻¹³ There is little available information on dental students.^{10,12} The present study assessed the sociodemographic background of clinical dental students. It also evaluated motives for choosing dentistry as a career. It is hoped that findings from the present study will assist in counselling of prospective dental students and planning of undergraduate programs in dental sciences.

Materials and Methods

All the clinical dental students in the four accredited dental schools in Nigeria were eligible to participate in the study. A self-administered structured questionnaire was used for the study. The questionnaire was pre-tested on a sample of dental students. Modifications were made to remove areas of ambiguity in the final questionnaire. The students were informed about the nature of the study, and confidentiality was assured. A total of 220 questionnaires were distributed. A total of 197 questionnaires duly completed were included in the final analysis. The overall response rate was 89.55 percent.

The questionnaire sought to determine the students' sociodemographic background such as age,

gender, ethnicity, type of school attended, entry qualifications, and family background. The respondents were asked about their choice of dentistry as a career and asked to identify factors influencing this choice. The questions were in various forms: the majority were standardized or close-ended questions. Others were open-ended, and one or two utilized Likert 5-point scaling. The questions called for both subjective and objective responses. Visual assessment of hardcopy records on dental admissions in the premier dental school at the University of Lagos was also carried out. This was done to assess students' admissions as well as the gender of admitted students.

Data collected was analyzed using the Epi-info program version 6.04 statistical package. Both descriptive and inferential statistics were sought. The level of significance was set at $p < 0.05$.

Results

Figure 1 shows the trend in the annual intake for dentistry at the University of Lagos. There has been a gradual increase in the number of students admitted for dentistry over the last thirty-seven years. There has been an appreciable increase in the number of female admissions since the 1990s. The female to male ratio has also increased.

A total of 197 completed questionnaires from the clinical dental students were used in the final analysis of the study. There were ninety-eight (49.7 percent) males and ninety-nine (50.3 percent) females. The male to female ratio was 1:1.01. The students' age had a range of nineteen to thirty-four years and one month; the mean age was 24.9 years (S.D. ± 2.8). Benin dental school had the highest number of students at 39.1 percent. Only twelve (6.1 percent) of the students were married, and 66.0 percent lived on campus.

The majority of students (146; 74.1 percent) attended government secondary schools. Only 11.7 percent, 8.6 percent, and 5.6 percent were from private schools, schools attached to a university, and missionary schools, respectively.

Almost all the students (191; 97.0 percent) were admitted into the dental program through the Joint Admission Matriculation Board Examinations (JAMB-E). Only one-third of the students (64; 32.5 percent) selected dentistry as first course of choice. Medicine and pharmacy were first choice courses for 63.5 percent and 4.0 percent of the students, respectively. All the students studied were Nigerians.

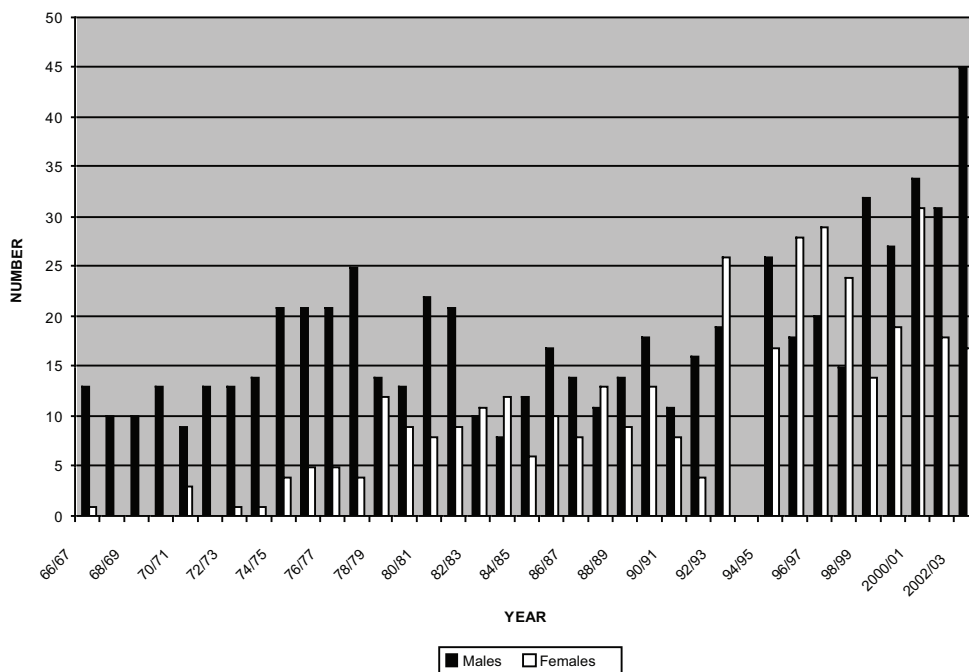


Figure 1. Undergraduate dental admissions to the University of Lagos, 1966/67 to 2002/03

Influencing factors among the sixty-four students with dentistry as first choice show that parents/family members influenced 50 percent of the students. Other influencing factors were friends (14.1 percent), dentist (12.5 percent), and teacher/counsellor (4.7 percent). Only twelve (18.8 percent) of the students confirmed that their choice of dentistry as first course was out of personal interest (Table 1).

Table 2 shows the family background of the students. Almost half (48.8 percent) of the mothers of the students studied had a university degree; only six (3.0 percent) were uneducated. With reference to occupational status of the mothers, nine (4.6 percent) and thirteen (6.6 percent) were in managerial posts or worked as professionals, respectively. However, eleven (5.6 percent) of the mothers were unemployed. About two-thirds of the fathers (69.6 percent) had a university degree; only nine (4.6 percent) were uneducated. With reference to the occupational status of the fathers, eleven (5.6 percent) and thirty-eight (19.3 percent) were in managerial posts or worked as professionals, respectively. Only ten (5.1 percent) of the fathers were unemployed. The majority of the students (194; 98.5 percent) were from states in the south geopolitical zones of Nigeria. Only three

(1.5 percent) of the students were from states in the northern geopolitical zones. Almost two-thirds (121; 61.4 percent) of the students had a health professional in their nuclear family.

Fathers were the most important factor in the choice of dentistry as a career. Males were more likely to be influenced by fathers or their friends and females by either of the parents. However, the association between gender and influencing factors was statistically significant for the following factors; mothers, friend, and sibling. (See Table 3.)

Table 4 shows the extracurricular activities engaged in by the students.

Reading and writing (29.6 percent) and music and entertainment (24.4 percent) were the commonest favorite past-times of the students. About a third of the students (33.1 percent) engaged in a combination of these activities. Other hobbies and interests were indoor games (7.7 percent), home economics (3.6 percent), social work (1.5 percent), and campus politics (0.5 percent).

Out of the 197 students, seventy-three (37.1 percent) engaged in group sports, while seventy-one (36.0 percent) were not involved in any form of sporting activity. Minor sports and indoor sports accounted

for 19.3 percent and 5.1 percent, respectively. Only five (2.5 percent) of the students were involved in a combination of sporting activities.

Table 5 shows the subjective responses to factors considered for dentistry as first choice among the sixty-four students for whom it was first choice. Interest, prestige, and good job opportunity abroad were very strong factors for over a third of the students.

Discussion

A number of studies have reported the socio-demographic characteristics of medical students in Nigerian medical schools.¹¹⁻¹³

The present study assessed the study motivation of clinical dental students in the four accredited dental schools in Nigeria, as well as their sociodemographic details. The modal age range in the study is twenty-four to twenty-five years, which is consistent with previous studies in Nigeria.^{10,11} Over two-thirds of the students were from states in the southern geopolitical zone of the country. The male to female ratio was 1:1.01. We found an increase in the number of female students in dentistry. Similar observations have been reported locally^{10,11} and internationally.^{3,9} Various explanations have been given for this observation: increased demand by women for equity in the labor market,⁴ and women have qualities that could benefit the dental profession.⁷ Studies in the literature have also reported that more female students took up dentistry because it allowed for more flexible working hours and that they could easily balance their professional career with the demands of domestic life.^{3,4,6} These reports are similar to findings from our study; more females had chosen dentistry because of the regular working hours.

Table 1. Sociodemographic characteristics of students

Characteristic	Variable	Number	%
1. Gender	Male	98	49.7
	Female	99	50.3
Male:Female=1:1.01			
2. Age	Range: 19 yrs-34 yrs 1 mth Mean: 24.9 years SD: +2.8		
3. Dental school	Lagos	57	28.9
	Ibadan	42	21.3
	Obafemi Awolowo	21	10.7
	Benin	77	39.1
4. Marital status	Single/never married	185	93.9
	Married	12	6.1
5. Accommodation	Campus/hostel	128	65.0
	Off campus	69	35.0
6. Secondary school	Private	23	11.7
	Government	146	74.1
	School attached to university	17	8.6
	Missionary	11	5.6
7. Mode of entry	JAMB-E	191	97.0
	Direct	3	1.5
	Others	3	1.5
8. Course of study at first choice	Dentistry	64	32.5
	Medicine	125	63.5
	Pharmacy	8	4.0
9. Influencing factor on choice of dentistry as first choice (N=64)	Parents/family	32	50.0
	Friends	9	14.1
	Dentist	8	12.5
	Teacher/counsellor	3	4.7
	Interest	12	18.8

Our study also found that the majority of the students lived in campus-hostel accommodation, were single or never married, and had no previous degrees or employment. However, a similar study in Sydney⁸ reported that 70 percent of dental students lived at home with their parents. The difference observed might be due to the fact that their study was of first-year students who will eventually move to hostel accommodations at the onset of the clinical years, which are more demanding.⁴ The location of dental schools in Nigeria in major cities and urban centers may be one of the reasons why students find it more convenient to stay on campus.

When asked to list their hobbies, music and entertainment as well as reading and writing were the most popular hobbies among the students in our study. Very few of the students engaged in hobbies

Table 2. Family background of students

Characteristic	Variable	Number	%	P
1. Educational status, mother	None	6	3.0	0.01163
	Primary	21	10.7	
	Secondary	40	20.3	
	Polytechnic	34	17.3	
	University	96	48.8	
2. Educational status, father	None	9	4.6	0.1829
	Primary	4	2.0	
	Secondary	28	14.2	
	Polytechnic	19	9.7	
	University	137	69.6	
3. Occupational status, mother	Unemployed	11	5.6	
	Civil servant	83	42.2	
	Manager/administrator	9	4.6	
	Professionals	13	6.6	
	Business/self-employed	65	33.0	
	Not stated/deceased	16	8.1	
4. Occupational status, father	Unemployed	10	5.1	
	Civil servant	40	20.3	
	Manager/administrator	11	5.6	
	Professionals	38	19.3	
	Business/self-employed	72	36.5	
	Not stated/deceased	26	13.2	
5. Geopolitical zone	North West	0	0.0	
	North East	1	0.5	
	North Central	2	1.0	
	South East	28	14.2	
	South South	72	36.5	
	South West	94	47.8	
6. Health professional in nuclear family	Yes	121	61.4	
	No	76	38.6	

involving manual dexterity. Two in five enjoyed group sports, while one in three students played no sports at all. This may be due to inadequate sporting facilities on campus or the inability to create time due to the tight academic schedule.

Our study also found that most parents were educated, with a university degree, and the mothers worked in professional occupations. The family demographics of students in the present study differ from that found in the Western industrialized countries. A higher percentage of students in our study are from professional families with well-educated parents when compared with similar reports in the literature.^{1,3,8,9} This may be explained by the fact that most successful African parents often take a central role in the decision-making process of their children. There was a health professional in about two-thirds of the students' nuclear families. These factors would at first appear to be influential in the choice of den-

tistry as a career among the students. There was, however, no significant association between the educational status of the mother and/or father on the career of the student at first choice, $p > 0.05$.

Only 32.5 percent of the students had dentistry as their first choice. Medicine was generally the preferred first choice as with similar studies^{1,3,5,8} in the literature. However, these findings differ from a study in Ireland, where two-thirds of the students had dentistry as their first choice.¹⁴ The majority of the students in the Irish study were attracted to dentistry primarily due to a positive perception of working conditions, altruistic motivations of helping people, and improving their appearance. Other studies have also reported that the majority of students chose dentistry as an alternative to medicine.^{8,11,14} In our

study, the need to go into a profession similar to medicine was the commonest reason stated for taking up dentistry. This corroborates reports from similar studies in the literature.^{1,3,6,8} Another reason seen in our study is a desire to be in a similar profession with a successful relative.

In our study, about 50 percent of the students who did not have dentistry as their first choice found them in the program because it was the next available option as determined by their entry grades. However, only 3 percent of the students chose to study dentistry because they felt it was a prestigious and lucrative profession.

When asked to rate the characteristic or motive that influenced their choice of dentistry as a career, the sixty-four students who had dentistry as their first choice said that interest, prestige, good job opportunity abroad, and regular work hours were the most important factors.

These four dental schools are located in the southwestern part of the country. The annual output

Table 3. Association between gender and influencing factor in choice of dentistry as a career

Factor	Male		Female		Total		Chi Square (X ²)	p
	Number	%	Number	%	Number	%		
Mother								
Yes	8	8.2	22	22.2	30	15.2	7.54	0.00603*
No	90	91.8	77	77.8	167	84.8		
Total	98		99		197			
Father								
Yes	27	27.5	36	36.4	63	32.0	1.76	0.18483
No	71	72.5	63	63.6	134	68.0		
Total	98		99		197			
Family dentist								
Yes	6	6.0	7	7.1	13	6.6	0.07	0.78866
No	92	94.0	92	92.9	184	93.4		
Total	98		99		197			
Friend								
Yes	21	1.0	9	9.0	30	15.2	5.81	0.01596*
No	77	99.0	90	91.0	167	84.8		
Total	98		99		197			
Spouse								
Yes	5	5.1	1	1.0	6	3.0	2.79	0.09470**
No	93	94.9	98	99.0	191	97.0		
Total	98		99		197			
Counsellor/teacher								
Yes	7	7.0	9	9.0	16	8.1	0.25	0.61675
No	91	93.0	90	91.0	181	91.9		
Total	98		99		197			
Sibling								
Yes	19	19.4	8	8.1	27	13.7	5.32	0.02104*
No	79	80.6	91	91.9	170	86.3		
Total	98		99		197			
Interest								
Yes	5	5.1	7	7.1	12	6.1	0.33	0.56351
No	93	94.9	92	92.9	185	93.9		
Total	98		99		197			

*Differences observed between the gender for these factors were significant.

**Chi square not valid, Fisher's exact test applied

One tailed p=0.10343, two tailed p=0.11834

of students of about 120 is rather low to serve a rapidly growing population estimated at about 123 million.^{15,16} There are at present 3,000 licensed dentists in Nigeria, with only 20 percent working in the rural areas where over 70 percent of Nigerians reside^{15,17} and the ratio of dentist to population is 1:41,000. The Nigerian population is therefore greatly underserved with reference to WHO global oral health recommendations.¹⁸ Oral health surveys have also reported the prevalence of periodontal disease to be between 15 and 58 percent in Nigerians aged fifteen years and above. Caries prevalence has been reported

to be very low in most studies, and the mean DMFT is below 4 in most communities. The restorative index has been reported to be low, most carious teeth remaining unrestored.^{15,16} This data on the dental workforce, oral health services, prevalence of the two major oral diseases, and findings from our study on students' motives for choice of dentistry, especially on plans to work abroad or in the urban centers, suggest an urgent need for the careful monitoring of the dental workforce capacity, demographics, and analysis. A dental school in the northern part of the country may also encourage the choice of dentistry

Table 4. Distribution of extracurricular activities engaged in by the students

Type	Sports		Hobbies		
	Number	%	Type	Number	%
Group	73	37.0	Home economics	7	3.6
Indoor	10	5.1	Indoor games	15	7.6
Minor	38	19.3	Music/entertainment	48	24.4
Combination	5	2.5	Social work	3	1.5
None	71	36.0	Campus politics	1	0.5
Total	197	100.0	Reading/writing	58	29.5
			Combination	65	33.0
			Total	197	100.0

Table 5. Subjective responses to factors that influenced choice of dentistry as first course (N=64)

Factors	Ratings				
	Very Strong Number (%)	Strong Number (%)	Moderate Number (%)	Weak Number (%)	Not Applicable Number (%)
Interest	26 (40.6)	18 (28.1)	12 (18.7)	7 (10.9)	1 (1.6)
Biologic aspect	15 (23.4)	5 (7.8)	16 (25.0)	6 (9.4)	12 (18.7)
Prestige	23 (35.9)	17 (26.5)	14 (21.8)	5 (7.8)	5 (7.8)
Remuneration	9 (14.0)	19 (29.6)	16 (25.0)	13 (20.3)	7 (10.9)
Independence	8 (12.5)	22 (34.3)	19 (29.6)	8 (12.5)	6 (9.4)
Varied work	7 (10.9)	15 (23.4)	18 (28.1)	8 (12.5)	13 (20.3)
Good job opportunity abroad	24 (37.4)	18 (28.1)	13 (20.3)	5 (7.8)	4 (6.2)
Regular work hours	20 (31.2)	16 (25.0)	18 (28.1)	5 (7.8)	5 (7.8)

as a career among students in the northern states of the country.

In order to maximize efficient delivery of oral health care in Nigeria, it is important also to investigate the working practices and identify the needs of dentists. Reports from such a study may further address the issue of making the practice of dentistry more attractive and lucrative to potential dental students who may wish to practice in the country.

In conclusion, it appears that the motives for choosing dentistry as a career in this group of students seem to relate to an image of dentistry as a vehicle for the achievement of personal goals. This includes good job opportunity abroad, financial independence, and prestige. Since only one-third of the students had dentistry as a first choice, further studies need to be carried out to assess how acceptable this course is to those who did not have it as a first choice.

As a profession, it is recommended that we encourage high school graduates to see dentistry first hand, either in general practice or through open days in dental schools and hospitals. This is because, in Nigeria, it is not unusual for a potential dental student to have never visited the dentist. Career counsellors should emphasize the details and variety of work patterns in dentistry along with such factors as the intellectual challenge, manual dexterity required, and caring nature of den-

tistry rather than the material reward. The different perceptions between males (good job opportunity abroad) and females (flexible working hours) should also be taken into consideration.

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