

FACTORS INFLUENCING CAREER CHOICE IN DENTISTRY AMONG SECONDARY SCHOOL STUDENTS IN IBADAN, NIGERIA

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ABSTRACT

Background: Nigeria faces a critical shortage of dental professionals, which exacerbates oral health disparities nationwide. Understanding the factors influencing secondary school students' interest in dentistry is essential for designing targeted interventions to expand the dental workforce. This study aimed to assess the willingness to pursue dentistry as a career and identify associated factors among senior secondary school students in Ibadan, Nigeria.

Methods: A cross-sectional study was conducted among 370 senior secondary school science students selected from five randomly selected (balloting) schools in Ibadan, Nigeria. Data on sociodemographic characteristics, knowledge, and attitudes toward choosing dentistry were collected using a validated interviewer-administered questionnaire. Data analysis was performed with SPSS version 26, employing bivariate and multivariate analyses at $p < 0.05$.

Results: The participants' mean age was 15.2 (± 1.1) years, with 77.6% being males. Only 14.2% had good knowledge of dentistry, while 86.2% had a positive attitude towards the dental career. Only 15.6% were very familiar with dentistry, and 39.6% were willing to choose it as a career. Predictors of willingness to choose dentistry included female gender (aOR=2.60; 95%CI=1.43–4.73) and being very familiar with dentistry (aOR=4.17; 95%CI=1.94–8.96).

Conclusion: Over one-third of students expressed interest in studying dentistry. Despite high awareness and positive attitudes, knowledge and familiarity with the profession were limited. These findings highlight the need for structured career guidance and early exposure to dentistry in secondary schools.

Keywords: Dental education; High school; Adolescents; Dental career; Africa

INTRODUCTION

Career plays a fundamental and significant role in a person's life, and success in a career is usually a lifelong pursuit. This choice can have a significant impact on the rest of their lives. It sets the pattern of an individual's income and can impact a person's personality and perception of life.¹ Therefore, for adolescents, choosing their future professional path is a significant decision.²

Secondary education serves to equip students for higher learning as well as the workplace. Choosing and preparing for a practical and pertinent career that one can enjoy and maintain is a major challenge confronting adolescents.³ Consequently, choosing a career has become a top priority for secondary school students in Nigeria.⁴

As a career, Dentistry is an essential and prestigious healthcare profession globally, and dentists play a vital role in society.⁵ The professional socialization of dentists begins when they are accepted into dental

school, and this lasts the duration of their studies.⁶ Currently, there are eleven dental schools in Nigeria accredited by the Medical and Dental Council of Nigeria (MDCN),⁷ the professional body that regulates the practice of dentistry, medicine, and alternative medicine in Nigeria.⁷ Depending on the year of enrollment via the Unified Tertiary Matriculation Examination (UTME) or direct entry, the training lasts six years for UTME applicants and five years for direct entry applicants. A Bachelor of Dental Surgery degree (BDS) or *Baccalaureus Dentalis Chirurgiae* (BChD) is awarded on successful completion of the training programme.

Despite being such a prestigious career choice, there is a shortage of dentists in the country.⁸ In 2021, the dentist-to-population ratio in Nigeria was about 1:48,967, which is comparably low to the World Health Organization (WHO) recommended ratio of 1:7,500.⁹ This shortage is a major concern as it would lead to considerable work overload and can significantly

reduce the quality of oral care of the Nigerian population.

In Africa, awareness of dental care is relatively low,^{10,11} and one might argue that interest in dentistry is similarly low due to poor knowledge about dentistry.¹² This poor knowledge might be attributed to some factors, including limited exposure to dentistry as a profession, inadequate information about career options, misconceptions about dental care, and low utilization of dental care.¹³ A previous study among students attending university preparatory classes in Nigeria reported that parents' and students' dental problems were some of the reasons for choosing dentistry as a career.¹²

An increase in the enrollment of students to study dentistry in universities will help address the current paucity by increasing the number of dentists, thereby improving the availability of oral healthcare services in Nigeria. However, there is a dearth of knowledge regarding dentistry as a prospective career choice among secondary school students in the country.¹⁴ Hence, this study aimed to assess the willingness to pursue dentistry as a career and identify associated factors among senior secondary school students in Ibadan, Nigeria.

METHODS

This cross-sectional study was conducted in secondary schools within Ibadan, the capital city of Oyo State, Nigeria, which comprises five local government areas (LGAs). Secondary education in Nigeria consists of six years, from junior secondary school one (JSS1) to senior secondary school three (SSS3). The study participants were senior secondary school students in the science arm attending government-owned schools in Oyo State.

Ethical approval was obtained from the University of Ibadan/University College Hospital (UI/UCH) Ethics Committee (UI/EC/23/0443). Parental consent and student assent were obtained before recruitment.

The sample size was calculated using the Kish-Leslie formula for a single population proportion, with a 95% confidence level, 5% margin of error, and a prevalence of 12.9% from a previous study¹², yielding a minimum required sample size of 173 students. However, to improve the precision of estimates, account for possible non-responses, and ensure adequate sample size for subgroup analyses (especially questions restricted to students aware of the dentistry profession), a total of 370 senior secondary school students were recruited.

A multistage sampling approach was used. In the first stage, Ibadan South-West LGA was selected from the five LGAs in the metropolis using simple random sampling (balloting). In the second stage, five schools within the selected LGA were chosen through simple random sampling. In the third stage, an average of 74 students from SSS1 and SSS2 were randomly selected from each school, resulting in a total of 370 participants.

Data was obtained using semi-structured, interviewer-administered, paper-based questionnaires written in the English Language. The questionnaire was adapted from previous studies.^{12,15} The questionnaire was divided into four major sections comprising the socio-demographic characteristics, knowledge, attitude, and willingness to study dentistry (primary outcome). The questionnaire was given to secondary school teachers, dentists, and linguists to assess for face and content validity, and their comments were used to revise the questionnaire. Following this, the questionnaire was pre-tested among a separate sample of secondary school students who were not part of the main study. Based on their feedback, necessary modifications were made to enhance clarity and relevance.

The parental social class of the participants was determined using the Oyedele classification of socioeconomic status,¹⁶ which combines the highest level of education and occupation of the parents for the calculations. The scores were summed, and the mean (approximated to the nearest whole number) was obtained. The mean score was used to assign the subject to one of the social classes (1-5). The social classes of the subjects were further categorized into upper (social classes 1 and 2), middle (social class 3), and lower (social classes 4 and 5). It was only those who were aware of dentistry that were asked about their knowledge and attitude to the profession. Four questions were asked to assess the participants' knowledge (what dentistry entails, the academic requirements to study dentistry, the length of training, and specialties). A correct answer was awarded "1" while a wrong answer was awarded "0". The knowledge score was subsequently calculated with the highest being "4" and the lowest being "0". Those who scored less than 2 were classified as having poor knowledge, while those with ≥ 2 were classified as having good knowledge. Three questions were asked to assess the participants' attitudes (What do you think about the following statements regarding dentistry? Dentistry would be an exciting career to pursue; dentistry would be personally fulfilling; dentistry can lead to a rewarding future) towards the choice of dentistry. An attitude score was computed by summing the scores for the three questions used to measure

attitude. The options for the questions were “disagree”, “undecided”, and “agree”, and they were assigned scores “1”, “2”, and “3”, respectively. The total score for the three questions was subsequently computed, and the highest score was “9”, while the lowest was “3”. Those who scored less than 5 were classified as having a “negative attitude”, while those with ≥ 5 were classified as having a “positive attitude”.

Information from the filled questionnaires was entered into the IBM SPSS Version 26. Descriptive statistics were conducted, and the proportions, means, and standard deviations were generated and presented in the form of tables and figures as appropriate. An Independent Student T-test was used to test the association between age (continuous variable) and willingness to study dentistry (yes vs no). Pearson’s Chi-square test was conducted to assess the association between “willingness to study dentistry” and the categorical independent variables (socio-demographics, familiarity with dentistry, level of knowledge, attitude to the choice of dentistry). Binary logistic regression modelling was subsequently conducted by including factors that were significantly associated with the primary outcome under bivariate analysis. The significance level for all tests was set at less than 5%.

RESULTS

A total of 370 students participated in the study with a mean ($\pm$ SD) age of 15.2 ($\pm$ 1.1) years, ranging from 13 to 19 years. The majority were males (77.6%) and

Table 1: Socio-demographic characteristics of the study participants

Variables	Frequency (n)	Percent (%)
Gender		
Male	287	77.6
Female	83	22.4
Class		
SSS1	205	55.4
SSS2	165	44.6
Socio-economic class		
Upper class	124	33.5
Middle class	224	60.5
Lower class	22	5.9
Awareness of dentistry		
Yes	318	85.9
No	52	14.1
Knowledge of dentistry (n=318)*		
Good	45	14.2
Poor	273	85.8
Attitude (n=318)*		
Positive	274	86.2
Negative	44	13.8
Willingness to study dentistry		
Yes	147	39.6
No	223	60.4

*Among only those who were aware of dentistry

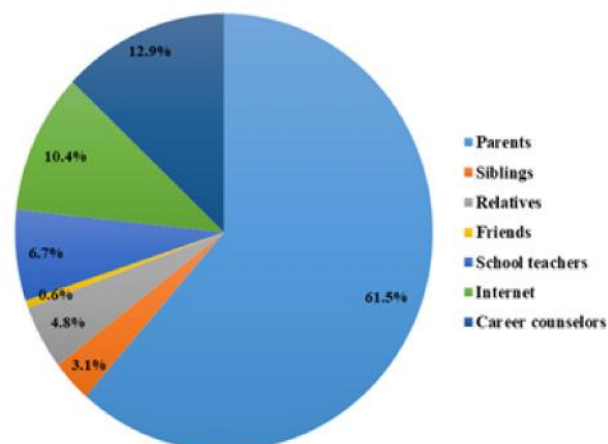


Figure 1: Participants' sources of information about dentistry

in the SSS1 class (55.4%). Most (90%) were from the middle parental socio-economic class. The majority (85.9%) were aware of dentistry as a course of study, and 39.6% indicated their willingness to choose dentistry as their career (Table 1). Most participants chose ‘parents’ (61.5%) as the source of information they relied on when choosing a career, while the least was ‘friends’ (0.6%) (Figure 1).

Among those who were aware of dentistry, the majority (86.2%) demonstrated a positive attitude, while only 14.2% had good knowledge about the course. The participants’ self-reported familiarity with dentistry was as follows: 36% were unfamiliar, 48.4% were somewhat familiar, and 15.6% were very familiar.

Table 2 shows that more females (58.0%) were willing to study dentistry compared to males (34.5%) ($p < 0.001$). Other factors that were significantly associated with willingness to study dentistry were the participants’ self-reported familiarity and their attitude to the dental profession. A higher proportion of those familiar with dentistry (62.2%) compared to those who were “somewhat familiar” (37.9%) or “not familiar” (27.9%) were willing to study dentistry ($p < 0.001$). Similarly, participants with positive attitudes (42.3%) as against negative attitudes (22.7%) were willing to study dentistry ($p = 0.014$).

Following the binary logistic regression analysis, the factors that were independently associated with willingness to study dentistry were gender and participants’ self-reported familiarity with dentistry. The odds that the female students were willing to study dentistry were 2.6 times that of males (aOR = 2.60; 95% CI = 1.43 – 4.73). Similarly, odds for those who were very familiar with dentistry were 4 times higher compared to those not familiar with the profession (aOR=4.17, 95% CI= 1.94 – 8.96). (Table 3)

Table 2: Factors associated with willingness to study dentistry among the study participants who were aware of the dental profession

Variables		Willingness to study dentistry		χ^2 Value	p-value
		Yes n (%)	No n (%)		
Gender	Female	40 (58.0)	29 (42.0)	12.401	<0.001*
	Male	86 (34.5)	163 (65.5)		
Familiarity with dentistry	Not familiar	29 (27.9)	75 (72.1)	15.714	<0.001*
	Somewhat familiar	53 (37.9)	87 (62.1)		
	Very familiar	28 (62.2)	17 (37.8)		
Attitude	Negative	10 (22.7)	34 (77.3)	6.093	0.014*
	Positive	116 (42.3)	158 (57.7)		
Class	SSS1	65 (37.4)	109 (62.6)	0.825	0.420
	SSS2	61 (42.4)	83 (57.6)		
Parental social class	Lower class	10 (47.6)	11 (52.4)	0.899	0.638
	Middle class	72 (37.9)	118 (62.1)		
	Upper class	44 (41.1)	63 (58.9)		
Knowledge	Poor	106 (38.8)	167 (61.2)	0.509	0.475
	Good	20 (44.4)	25 (55.6)		

*Statistically significant; χ^2 Pearson's Chi-Square test

Table 3: Factors independently associated with the willingness to study dentistry among the study participants

Factors	Willingness to study dentistry (Yes)	
	aOR	95% CI
Gender		
Female	2.60	1.43 – 4.73*
Male	Ref.	
Familiarity with dentistry		
Very familiar	4.17	1.94 – 8.96*
Somewhat familiar	1.49	0.84 – 2.62
Not familiar	Ref.	
Attitude		
Negative	0.42	0.17 – 1.01
Positive	Ref.	

*Statistically significant; aOR: Adjusted Odds Ratio; 95%CI: 95% Confidence Interval; Binary logistic regression modelling; Ref.: Reference

DISCUSSION

There is a paucity of empirical studies assessing secondary school students' knowledge, attitudes, and willingness to pursue dentistry as a career in Nigeria. Most existing studies^{6,17,18} have focused on undergraduate dental students, individuals who have already chosen dentistry and are enrolled in dental school, thereby overlooking the earlier decision-making stage. This study addresses that gap by focusing on senior secondary school students, a critical population that is actively deciding on future careers and preparing for the Joint Admissions and Matriculation Board (JAMB) examination, which determines university course placement. By targeting students at this pivotal

stage, the study provides timely insights that can inform upstream interventions in dental career guidance, workforce planning, and health professions education. This study assessed awareness, familiarity, knowledge, attitudes, and willingness to pursue dentistry among science-track secondary school students. While 85.9% of participants were aware of dentistry, only 14.2% demonstrated good knowledge, and just 15.6% reported being very familiar with the profession. Nonetheless, 86.2% held positive attitudes toward dentistry, and 39.6% expressed a willingness to pursue it as a career.

The high level of awareness aligns with findings from previous studies, such as one conducted among students attending university preparatory classes in Enugu, Nigeria, which reported widespread recognition of dentistry as a professional course.¹² This may reflect ongoing oral health outreaches in schools or increased exposure to oral health information. However, awareness alone appears insufficient for informed career decision-making. The vast majority of students, more than eight out of ten, had poor knowledge of what dentistry entails, consistent with a Kenyan study where 80% of dental students reported inadequate understanding of the profession at the time of application.¹⁹ This suggests that while many students may have heard of dentistry, few have in-depth or accurate information about its scope, requirements, or career prospects.

To bridge this gap, schools should integrate career awareness initiatives, including presentations by dental professionals, exposure to clinical environments, and

interactive sessions highlighting pathways, specializations, and opportunities within the field. Personalized counseling could also help students align their interests and abilities with less-popular but highly rewarding professions like dentistry.

Despite the low knowledge levels, the high proportion of students with a positive attitude toward dentistry is encouraging. This contrasts with the reported findings from Tanzania, where less than half of the students had a favorable perception of the profession.²⁰ The difference may reflect improved access to information, a growing presence of dental schools, and greater appreciation for oral health in Nigeria.^{21,22} According to Social Cognitive Career Theory (SCCT), such positive attitudes, if reinforced through vicarious learning experiences and enhanced self-efficacy, can translate into sustained career interest and eventual career choice.²³

Nonetheless, the fact that fewer than half of students were willing to pursue dentistry suggests the influence of other deterrents, including competition with more widely known health professions like medicine, nursing, or pharmacy. Addressing these perceptions through comprehensive career education can support more balanced choices among health professions, helping to alleviate Nigeria's critical shortage of dental professionals.

This study identified three independent predictors of willingness to pursue dentistry: female gender, familiarity with dentistry, and positive attitudes toward the profession. The finding that female students were more likely to consider dentistry is consistent with previous research from Nigeria.^{24,25} This may reflect evolving gender norms, greater representation of women in dentistry, or perceptions of dentistry as more compatible with work-life balance.^{6,26} Career guidance efforts should ensure gender equity while addressing possible stereotypes that limit male or female engagement in particular professions.

Familiarity with dentistry had a strong and statistically significant effect on willingness to pursue it. Students with more personal exposure, whether through family members, clinic visits, or direct interactions with dentists, may develop a more concrete and favorable perception of the profession.²⁷ This reinforces the importance of early, intentional exposure through school-dental clinic partnerships, job-shadowing opportunities, and oral health advocacy programs. Those with positive attitudes toward dentistry were also more willing to choose it, echoing global literature showing that attitudinal orientation is a powerful predictor of vocational intent.²⁸ Schools and public health educators

can build on this by using relatable messaging, testimonials, and real-life success stories to shift perceptions and stimulate genuine interest in the field.

Limitation

This study was conducted exclusively among public-school students in one urban LGA in Ibadan, which limits the generalizability of findings to students in private schools or rural areas. Social desirability bias may have influenced students' responses about willingness to pursue dentistry, although the use of anonymous questionnaires likely minimized this risk. Additionally, as a cross-sectional study, causality cannot be inferred.

CONCLUSION

Approximately one-third of surveyed students reported a willingness to pursue dentistry as a career, despite limited knowledge and familiarity with the profession. Positive attitudes were prevalent, suggesting a foundation that could be strengthened through targeted interventions. Female gender, high familiarity with dentistry, and positive attitudes independently predicted willingness to pursue the profession. These findings underscore the need for early, structured, and inclusive dental career awareness programs within secondary schools to help expand the future oral health workforce in Nigeria and similar settings.

Author contribution:

TPO and OFF conceptualized the study; TPO, OI, AAD, and OFF participated in data collection; TPO and OFF analysed the data, and TPO, OFF, AAD, and OI interpreted the results. TPO wrote the first draft of the manuscript. All authors critically reviewed the first draft and approved the final draft. OFF, AAD, OI, and GAO supervised the research project.

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