

Determinants of self-rated oral health among undergraduate students in Port Harcourt, Rivers State, Nigeria

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Abstract

Background: Self-rated oral health is a useful and essential indicator of overall oral health status which has an impact on general well-being and quality of life. No study on the perception of oral health has been conducted among young adults in Port Harcourt. Thus, this study investigated whether sociodemographic factors and oral health practices were associated with self-reported oral health status in a young population in Port Harcourt.

Methods: A cross-sectional survey conducted among young undergraduate students in the University of Port Harcourt, Rivers State. Data were collected using pre-tested self-administered questionnaires and analysed using the Statistical Package for Social Sciences version 21.0.

Results: There were 120 respondents, all within 16–34 years old, with the mean age of 21.7 ± 3.8 years. More females 61 (50.8%) than males 59 (49.2%). A total of 5 (4.2%) are married and 66 (55%) were in health sciences. Out of 42 (35.0%) of the respondents that had utilised dental service in the past; complaints of a toothache accounted for 52.4%. The percentages of participants that rated their oral health as excellent, good, fair and poor were 20.8%, 58.4%, 16.7% and 4.2%, respectively. Sociodemographics factors, such as age, gender, course of study, level of study and monthly allowance were significantly associated with self-rated oral health ($P < 0.05$). Oral health practices for example, previous dental visit, type of toothbrush used and frequency of tooth brushing were also significantly associated with perceived oral health.

Conclusions: The perceived high oral health status of participants was influenced by sociodemographic factors and oral health practices. However, there is poor utilisation of dental services among the students.

Keywords: Oral health practices, self-rated oral health status, sociodemographic factors

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INTRODUCTION

Self-rated oral health is a useful and essential indicator of overall oral health status; which in turn have an impact on general well-being and quality of life.^{1,2} Perceived

oral health status has been found useful in determining dental treatment needs, predicting oral health behaviour, performing routine diagnostic procedures and collecting dental information on young and adults.³⁻⁵ It is also a useful tool for planning and monitoring oral promotion

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interventions. Ostberg *et al.*⁶ emphasised that surveillance of oral health in young people should include information on self-rated oral health.

Self-rated oral health has been found to be associated with sociodemographic, clinical and socioeconomic status.² However, most of the studies in our environment were conducted in the adult population.^{2,7} Thus, it is valuable to identify the determinants of self-rated oral health in young undergraduate people. Furthermore, many university students lived on their own far away from home and faced with the responsibility for their own health, lifestyle and behaviour, and during this period, poor health behaviour may affect self-rated oral health.¹ Thus, it is important to focus on any factors related to self-rated oral health in university students. We hypothesised that factors such as sociodemographic factors and oral health practices do not influence self-rated oral health in the University of Port Harcourt undergraduate students. The purpose of this study was to investigate whether sociodemographic factors and oral health practices were associated with self-reported oral health (SROH) status in a young population in Port Harcourt.

METHODS

This cross-sectional survey was conducted among young undergraduate students in the University of Port Harcourt, Rivers state between October 2016 and July 2017. The students were randomly selected at the convocation arena where students from the various faculty of the University often assemble to receive lectures. The objective of this study was explained to the participants, and informed consent was obtained before administering the questionnaires. Those who declined to participate in the study were excluded from the study. A total of 160 questionnaires were distributed, and 120 properly completed questionnaires were found usable. Ethical approval was obtained from the Research and Ethics Committee of the University of Port Harcourt Teaching Hospital.

The self-administered and semi-structured questionnaire was pre-tested among nursing school students not selected for the study. Necessary modifications were made to the questionnaire before data collection to ensure the validity and reliability of the questionnaire.

Questionnaires contained information on sociodemographics, oral health practices and self-rated oral health status. Participants were asked to rate their oral health as excellent, good, fair and poor. Data analysis was done with the Statistical Package for the Social Sciences (Version 21.0.

IBM Corp., Armonk, NY, USA), descriptive statistics were obtained and frequency distribution calculated. Statistical significance was done with the Chi-square test and logistic regression to identify the determinants that were strongly associated with SROH status. For binary logistic regression analysis, response variable, namely SROH status was transformed to binary variables as good (excellent + good) versus poor (fair + poor). $P \leq 0.05$ was considered to be statistically significant.

RESULTS

A total of 160 questionnaires were distributed and 120 properly completed questionnaires were found usable giving a response rate of 75%. All the respondents were within 16–34 years age range with a mean age of 21.7 ± 3.8 . There were more female (61, 50.8%) than males (59, 49.2%) and only 5 (4.2%) are married. Most 66 (55%) of the respondents were in the health sciences. Majority 101 (84.2%) of the students are dependent on their parent, and 78 (65.0%) receive a $\leq 10,000$ naira monthly allowance as shown in Table 1.

Table 1: Description of the respondents according to sociodemographic variables

Sociodemographics	Frequency, n (%)
Age groups	
16-20	48 (40.0)
21-25	54 (45.0)
26-30	16 (13.3)
31-35	2 (1.7)
Gender	
Male	59 (49.2)
Female	61 (50.8)
Marital status	
Single	15 (95.8)
Married	5 (4.2)
Faculty	
Health sciences	66 (55.0)
Sciences	16 (13.3)
Education	3 (2.5)
Engineering	12 (10.0)
Humanities	23 (19.2)
Sponsor	
Parent	101 (84.2)
Relatives	8 (6.7)
Self	9 (7.5)
Spouse	2 (0.8)
Year of study	
1	24 (20.0)
2	22 (18.3)
3	15 (12.5)
4	21 (17.5)
5	12 (10.0)
6	26 (21.7)
Monthly allowance (naira)	
$\leq 10,000$	78 (65.0)
11,000-20,000	25 (20.8)
21,000-30,000	11 (9.2)
$\geq 31,000$	6 (5.0)
Total	120 (100.0)

The number and percentage of the participants that rated their oral health as excellent, good, fair and poor were 25 (20.8%), 70 (58.3%), 20 (16.7%) and 5 (4.2%), respectively. Most of the students ≤25 years of age rate their oral health as good (72/102) and excellent (24/102) while those above 25 years have fair (9/18) and good (8/18) self-rated oral health [Table 2]. More females (70.5%) rate their oral health as good compared to 45.8% of males. Furthermore, all the students irrespective of their monthly allowance rate their oral health as good. Sociodemographics factors for example, age, gender, the course of study and monthly allowance were found to be significantly associated ($P < 0.05$) with self-rated oral health as shown in Table 2.

Perceived oral health status was considered to be good among those with previous dental service utilisation more than those that have not visited a dentist; though 29.5% of those without previous dental visit rate their oral health excellent. Oral health practices for example, previous dental visit, type of toothbrush texture used and frequency of tooth brushing were found to be significantly associated with perceived oral health status as shown in Table 3.

Out of 42 (35.0%) of the respondents that had utilised dental service in the past; complaints of toothache accounted for 52.4% as shown in Figure 1.

Determinants of self-reported oral health status

Logistic regression modelling identified three independent variables (gender, toothbrushing aid and frequency of toothbrushing) to be significantly associated with SROH status. The frequency of toothbrushing (odds ratio 4.1;

95% confidence interval [CI]: 1.27–13.0) and gender (odds ratio 3.7; 95% CI: 0.99–13.5) have a higher odds of predicting the students’ perceived oral health status compared to the other variables as shown in Table 4.

DISCUSSION

This study examined the SROH status among university students in the South-South region of Nigeria. SROH is a subjective patient-centred measure of oral health which involves the individual in the decision-making process and assessment of their oral health.⁸ Perceived oral health status has been found useful in determining dental treatment needs, predicting oral health behaviour, performing routine diagnostic procedures and collecting dental information on young and adults.

Although most of the respondents had a positive view of their oral health, they, however, have poor regular oral health utilisation habits. Only 35% of them had a previous

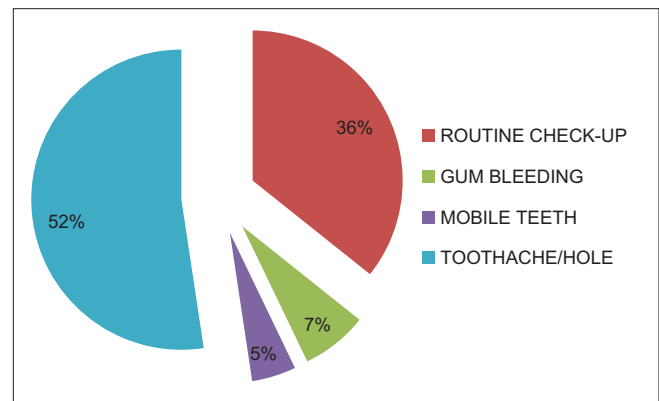


Figure 1: Reasons for dental attendance by the participants

Table 2: Association of self-reported oral health and sociodemographic variables

Sociodemographics	Self-reported oral health status, frequency (%)					P
	Excellent	Good	Fair	Poor	Total	
Age groups						
16-20	10 (20.8)	34 (70.8)	4 (8.3)	0 (0.0)	48 (100.0)	0.000
21-25	14 (25.9)	28 (51.9)	7 (13.0)	5 (9.3)	54 (100.0)	
26-30	1 (6.3)	8 (50.0)	7 (43.8)	0 (0.0)	16 (100.0)	
31-35	0 (0.0)	0 (0.0)	2 (100.0)	0 (0.0)	2 (100.0)	
Gender						
Male	14 (23.7)	27 (45.8)	16 (27.1)	2 (3.4)	59 (100.0)	0.01
Female	11 (18.0)	43 (70.5)	4 (6.6)	3 (4.9)	61 (100.0)	
Faculty						
Health sciences	7 (10.6)	43 (65.2)	15 (22.7)	1 (1.5)	66 (100.0)	0.000
Sciences	10 (62.5)	4 (25.0)	2 (12.5)	0 (0.0)	16 (100.0)	
Education	0 (0.0)	3 (100.0)	0 (0.0)	0 (0.0)	3 (100.0)	
Engineering	4 (33.3)	5 (41.7)	3 (25.0)	0 (0.0)	12 (100.0)	
Humanities	4 (17.4)	15 (65.2)	0 (0.0)	4 (17.4)	23 (100.0)	
Allowance (naira)						
≤10,000	13 (16.7)	50 (64.1)	15 (19.2)	0 (0.0)	78 (100.0)	0.03
11,000-20,000	8 (32.0)	10 (40.0)	3 (12.0)	4 (16.0)	25 (100.0)	
21,000-30,000	2 (18.2)	7 (63.6)	1 (9.1)	1 (9.1)	11 (100.0)	
≥31,000	2 (33.3)	3 (50.0)	1 (16.7)	0 (0.0)	6 (100.0)	
Total	25 (20.8)	70 (58.3)	20 (16.7)	5 (4.25)	120 (100.0)	

Table 3: Association of self-rated oral health and oral health practices

Oral health practices	Self-reported oral health status, frequency (%)					P
	Excellent	Good	Fair	Poor	Total	
Previous dental visit						
Yes	2 (4.8)	28 (66.7)	8 (19.0)	4 (9.5)	42 (100.0)	0.004
No	23 (29.5)	42 (53.8)	12 (15.4)	1 (1.3)	78 (100.0)	
Reason for dental visit						
Routine check	1 (6.7)	12 (80.0)	2 (13.3)	0 (0.0)	15 (100.0)	0.15
Bleeding gum	1 (33.3)	2 (66.7)	0 (0.0)	0 (0.0)	3 (100.0)	
Mobile teeth	0 (0.0)	2 (100.0)	0 (0.0)	0 (0.0)	2 (100.0)	
Toothache/hole on tooth	0 (0.0)	12 (54.5)	6 (27.3)	4 (18.2)	22 (100.0)	
Toothbrushing aids						
Toothbrush	25 (22.7)	66 (60.0)	16 (14.5)	3 (2.7)	110 (100.0)	0.005
Toothbrush and chewing stick	0 (0.0)	4 (40.0)	4 (40.0)	2 (20.0)	10 (100.0)	
Toothbrush texture						
Soft	9 (28.1)	12 (37.5)	7 (21.9)	4 (12.5)	32 (100.0)	0.05
Hard	4 (21.1)	12 (63.2)	3 (15.8)	0 (0.0)	19 (100.0)	
Medium	12 (17.4)	46 (66.7)	10 (14.5)	1 (1.4)	69 (100.0)	
Frequency of tooth brushing						
Once	7 (12.7)	30 (54.5)	14 (25.5)	4 (7.3)	55 (100.0)	0.02
Twice	18 (27.7)	40 (61.5)	6 (9.2)	1 (1.5)	65 (100.0)	
Method of tooth brushing						
Vertical	11 (20.8)	33 (62.3)	7 (13.2)	2 (3.8)	53 (100.0)	0.43
Horizontal	0 (0.0)	9 (81.8)	2 (18.2)	0 (0.0)	11 (100.0)	
Both	14 (25.0)	28 (50.0)	11 (19.6)	3 (5.4)	56 (100.0)	
Total	25 (20.8)	70 (58.3)	20 (16.7)	5 (4.25)	120 (100.0)	

Table 4: Logistic regression coefficient for self-reported oral health status model

Independent variables	B	SE	Wald	df	P	OR	95% CI	
							Lower	Upper
Age	-0.172	0.113	2.345	1	0.126	0.84	0.68	1.049
Gender	1.299	0.668	3.779	1	0.05*	3.70	0.99	13.5
Faculty	0.064	0.176	0.131	1	0.717	1.07	0.75	1.50
Previous dental visit	-0.256	0.629	0.165	1	0.684	0.77	0.23	2.66
Brushing aid	-1.118	0.499	5.021	1	0.025*	0.33	0.12	0.87
Toothbrush texture	0.576	0.325	3.145	1	0.076	1.78	0.94	3.36
Frequency of toothbrushing	1.400	0.594	5.551	1	0.018*	4.10	1.27	13.0
Toothbrushing technique	-0.239	0.334	0.510	1	0.475	0.79	0.41	1.52
Monthly allowance	-0.214	0.320	0.445	1	0.505	0.81	0.43	1.51
Constant	2.243	3.352	0.448	1	0.503	9.43		

* $P \leq 0.05$. CI: Confidence interval, OR: Odds ratio, SE: Standard error

dental visit; though this is higher than the findings in a previous study among adults where <25% had a previous dental visit.² A good proportion (79.2%) of the study participants viewed their oral health status as excellent or good, and this is surprising considering their poor utilisation of dental services. Olusile *et al.*⁷ asserted that Nigerians generally associate not visiting a health facility with good health, and this is equally true in this case where participants equated not visiting a dentist with good oral health. The highly positive SROH in this study is in accordance with other studies, where self-assessed dental health was generally good.^{2,7,9-11}

Half of the participants used medium-textured toothbrushes (57.5%) and brushed twice daily (54.2%). This is higher than what has been observed in previous studies.^{2,7,9,10} Our findings may have been influenced by information obtained from schools and the media by the students.

Furthermore, most of them reside in a tertiary hospital environment where they are likely to have benefitted from dental outreaches.

In this study, sociodemographic factors, such as age, gender, the course of study and monthly allowance were significantly associated with self-rated oral health ($P < 0.05$). Furthermore, oral health practices for example, previous dental visit, type of toothbrush texture used and frequency of tooth brushing were significantly associated with perceived oral health. The results obtained in this study disputed the hypothesis of the study and revealed that gender, age, income level and oral health practices are related to self-rated oral health. Factors, such as higher education, current employment, higher income, female gender and younger age, have all been positively associated with good self-rated oral health.^{2,5,11,12}

A greater proportion of females than males, in contrast to other studies,^{11,12} rated their oral health as good. This observation may be related to the fact that, women have been found to be more likely to visit dental clinics and to report dental symptoms than men.^{11,13} Our findings showed that those who have made use of dental services in the past rate their oral health as good. This is in contrast to the findings by Olutola and Ayo-Yusuf¹¹ where those with previous dental visits rate their oral health as poor. Individuals who do not practice routine dental check-ups or wait more than 3 years between visits have been found to have an increase in the prevalence of negative self-rated oral health¹⁴ since oral health problems may progress without professional care, causing pain, discomfort and irreversible damage to teeth. The findings in this study showed that sociodemographic variables and oral health practices are the major determinants of SROH among university students.

Limitation of the study

This study may have selection bias due to the sampling method. Studies with higher representative numbers from different faculty may give a more accurate understanding of the perceived oral health status of the undergraduate students.

CONCLUSIONS

Most of the respondents rate their oral health as good. Perceived good oral health status was common among females, respondents using medium-textured toothbrushes, those that brush twice daily and those with a previous dental visit. The odds of rating good oral health status among the respondents was highly determined by gender and frequency of toothbrushing. The perceived high oral health status of the participants in this study was influenced by sociodemographic factors and positive oral health practices. However, there is poor utilisation of dental services among the students. We recommend routine oral check and oral hygiene education among undergraduate students. Further studies are needed for determining the correlation between SROH status and intraoral clinical status of the students.

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Conflicts of interest

There are no conflicts of interest.

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