



(RESEARCH ARTICLE)



Dental knowledge and reasons for non-utilization of dental services among final year undergraduates in a University of Port Harcourt, Nigeria

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Abstract

Background: Oral systemic interactions have been established by scientific studies through the common risk factor and inflammatory pathways. Since the health practitioners are the ones that those with oral diseases first present to, there is the need for them to be dentally aware so they can help patients get holistic care and thus improve their quality of life.

Methodology: One hundred and eighty-five participants in final year in health-related professions (Dentistry, Pharmacy, Medicine and surgery and Nursing) were recruited. Self-administered questionnaires were used to collect data on dental knowledge and service utilization. Data was analyzed using IBM SPSS (Statistical Package for the Social Sciences) version 25.

Results: Seventy percent participants in Dentistry and Medicine & Surgery knew a dentist should be visited twice yearly. One third of participants in Pharmacy said the dentist should only be visited when there is a toothache ($p=0.002$). One third of participants from Medicine & Surgery have not heard of dental caries. Participants from Pharmacy had the least knowledge about dental caries, calculus and scaling and polishing ($p<0.001$). Half of participants from Medicine & Surgery and Pharmacy did not know that patients with facial swelling should be sent to the dentists for management ($p=0.001$). Four-fifth of participants from Pharmacy do not know what halitosis is ($p<0.0001$). 61.6% of the study population had never had a dental visit and only 14.5% reported to have had regular dental visits.

Conclusion: Dental awareness is slightly improved among the students but there is still the need translate knowledge to practice.

Keywords: Dental awareness; Past dental visit; Regular dental visit; Reasons for non- utilization

1. Introduction

The association between oral health and the general body system has been established by research studies [1, 2]. There are oral manifestations of systemic diseases and drugs on one hand, and oral systemic interactions where periodontitis has been associated with non-communicable diseases (NCDs) like diabetes mellitus, coronary heart disease, infertility in males, rheumatoid arthritis, chronic kidney disease among others on the other hand [3-12]. Thus, there is the need for collaboration between medical and dental practitioners in managing patients with NCDs.

Of importance is the need for medical practitioners to have some level of dental knowledge to enable them know when to refer their patients to dentists for adequate care. In Nigeria, people with health issues always go to nurses, pharmacists and medical doctors and hardly go to the dentists except for frank dental issues as they believe that they

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are just ‘doctors of teeth’ [13]. Awareness and knowledge about possible oral systemic interactions will help other health practitioners know when and what to refer to dentists for management.

Periodic dental checkups have been documented to be an important factor in preventing oral diseases and complications [14]. Despite this, dental service utilization is poor in Nigeria and reasons such as lack of time, high cost of treatment and far distance to the facilities have been offered [16]. Nevertheless, it has been documented that people in the vicinity of dental facilities hardly make use of them for preventive purposes but for emergency dental problems [15, 16].

This study assessed dental knowledge and dental visits among final year undergraduates in health-related courses like Dentistry, Medicine & Surgery, Nursing, and Pharmacy.

2. Material and methods

A cross sectional study done among all final year students in four health-related courses in University of Port Harcourt, Port Harcourt, Rivers State. The four faculties were Faculties of Dentistry, Medicine & Surgery, Nursing and Pharmacy.

Self-administered questionnaire was used to collect data on participant’s demographics, dental visits and dental knowledge. The questions on dental knowledge elicited information on general dental awareness and oral systemic interactions.

Ethical approval was obtained from the University of Port Harcourt Teaching Hospital Research and Ethics Committee.

Data were recorded for statistical analyses and univariate and secondary log-linear statistics of several categorical variables were performed. Twelve questions on oral systemic interactions were recorded into numeric variables where 5 replaced “strongly agreed,” 4 replaced “agreed,” 3 replaced “neutral,” 2 replaced “Partially disagree,” and 1 replaced “Strongly disagreed”. The maximum score was 60 and minimum was 12. The summative scores for individual participants were categorized into 4 where score 12-23 was ‘poor knowledge’, 24-35 was ‘fair knowledge’, 36-47 was ‘good knowledge’ and 48-60 was ‘excellent knowledge’.

Data was analyzed using the Statistical Package for Social Sciences version 20.0 (IBM SPSS Statistics Armonk New York). Results were expressed in frequency and percentages and chi square analysis was done for the categorical variables with the statistical significance set at $P < 0.05$.

3. Results

The characteristics of the participants showed a female predominance among all groups. Majority were in their third decade of life. Mean age was 23.25 ± 2.61 years Table 1.

Table 2 shows participants dental knowledge. About seventy percent participants in Dentistry and Medicine & Surgery knew a dentist should be visited twice yearly. The knowledge was poor among participants in Nursing and Pharmacy. About one third of participants in Pharmacy said the dentist should only be visited when there is a toothache. Statistical analysis showed this to be significant ($p=0.002$). Many participants knew that the dentists not only treat teeth ($p=0.002$). One third of participants from Medicine & Surgery have not heard of dental caries. Half of participants from Medicine & Surgery and Pharmacy did not know that patients with facial swelling should be sent to the dentists for management ($p=0.001$). Four-fifth of participants from Pharmacy do not know what halitosis is. ($p= <0.0001$). Many participants knew that the dentists not only treat teeth ($p=0.002$). One third of participants from Medicine & Surgery have not heard of dental caries. Half of participants from Medicine & Surgery and Pharmacy did not know that patients with facial swelling should be sent to the dentists for management ($p=0.001$). Four-fifth of participants from Pharmacy do not know what halitosis is. ($p= <0.0001$).

Table 3 shows participants knowledge about oral systemic interaction and prevention Nine in ten participants in all faculties (40.5%) knew that oral diseases can affect systemic Health, that systemic drugs can cause teeth discoloration and that there can be oral manifestation of systemic diseases. The awareness of the association between poor oral hygiene and non-communicable diseases as well as periodontitis and adverse pregnancy is poor among participants from Medicine & Surgery and Pharmacy. Only about one-third of participants from Medicine & Surgery, Nursing and Pharmacy knew that periodontitis is associated with adverse pregnancy outcomes like preterm deliveries and low birth weight babies.

Table 1 Participants' characteristics

Variables	Dentistry	Medicine & Surgery	Nursing	Pharmacy	Total	χ^2	P
	N (%)	N (%)	N (%)	N (%)	N (%)		
Gender						5.74	0.13
Female	10 (62.5)	37 (61.7)	25 (83.3)	47 (59.5)	119 (64.3)		
Male	6 (37.5)	23 (38.3)	5 (16.7)	32 (40.5)	66 (35.7)		
Age group (years)						11.85	0.07
10-19	0 (0.0)	1 (1.7)	0 (0.0)	8 (10.1)	191 (45.3)		
20-29	16 (100.0)	58 (96.6)	28 (93.3)	70 (88.6)	227 (53.8)		
>30	0 (0.0)	1 (1.7)	2 (6.7)	1 (1.3)	4 (0.9)		
Mean Age \pm SD (years)	25.13 \pm 2.02	23.98 \pm 1.74	24.57 \pm 2.11	21.81 \pm 2.72	23.25 \pm 2.61		
Range (years)	22-29	19-32	21-30	18-37	18-37		
Tribe						12.99	0.37
Hausa	0 (0.0)	0 (0.0)	0 (0.0)	1 (1.3)	1 (0.5)		
Yoruba	0 (0.0)	2 (3.3)	3 (10.0)	4 (5.1)	9 (4.9)		
Igbo	6 (37.5)	26 (43.3)	10 (33.3)	43 (54.4)	85 (45.9)		
South-South	10 (62.5)	32 (53.3)	17 (56.7)	29 (36.7)	88(47.6)		
Others	0 (0.0)	0 (0.0)	0 (0.0)	2 (2.5)	2 (1.1)		
Total	16 (100.0)	60 (100.0)	30 (100.0)	79(100.0)	185 (100.0)		

Table 2 Participants' dental knowledge

Variables	Dentistry	Medicine & Surgery	Nursing	Pharmacy	Total	χ^2	P
	N (%)	N (%)	N (%)	N (%)	N (%)		
When should you see a Dentist						25.89	0.002*
6 monthly	15(93.8)	47 (78.3)	22 (73.3)	45 (57.0)	129 (69.8)		
Once in 2 years	0 (0.0)	0 (0.0)	1 (3.3)	0 (0.0)	1 (0.5)		
When you have toothache	0 (0.0)	3 (5.0)	4 (13.3)	23 (29.1)	30 (16.2)		
Yearly	1 (6.2)	10 (16.7)	3 (10.0)	11 (13.9)	25 (13.5)		
Dentist treat conditions related to						21.03	0.002*
No idea	0 (0.0)	0 (0.0)	2 (6.7)	9 (11.4)	11 (5.9)		
Teeth only	0 (0.0)	0 (0.0)	4 (13.3)	10(12.7)	14 (7.6)		
The oral cavity and associated structures	16 (100.0)	60 100.0)	24 (80.0)	60 (75.9)	160 (86.5)		
Tooth deposits are called						45.13	<0.0001*
Calculus	13 (81.3)	40 (66.7)	21 (70.0)	19 (24.1)	93(50.3)		
Don't know	0 (0.0)	8 (13.3)	4 (13.3)	25 (31.6)	37 (20.0)		
Food deposits	0 (0.0)	0 (0.0)	2 (6.7)	11 (13.9)	13 (7.0)		

Not sure	3 (18.7)	12 (20.0)	3 (10.0)	24 (30.4)	42 (22.7)		
Heard of Dental Caries						42.59	<0.0001*
Don't know	1 (6.3)	1 (1.7)	1 (3.3)	9 (11.4)	12 (6.5)		
No	1 (6.3)	6 (10.0)	4 (13.3)	37 (46.8)	48 (25.9)		
Yes	14 (87.4)	53 (88.3)	25 (83.4)	33 (41.8)	125 (67.6)		
Heard of Scaling and Polishing						38.55	<0.0001*
No	0 (0.0)	1 (1.7)	5 (16.7)	33 (41.8)	39 (21.1)		
Yes	16 (100.0)	59 (98.3)	25 (83.3)	46 (58.2)	146 (78.9)		
Done scaling before						30.81	<0.0001*
No	5 (31.2)	38 (63.3)	27 (90.0)	69 (87.3)	139 (75.1)		
Yes	11 (68.8)	22 (36.7)	3 (10.0)	10 (12.7)	46 (24.9)		
Previous referral of a patient to dentist						16.53	0.06
Always	4 (25.0)	15 (25.0)	5 (16.7)	15 (19.0)	39 (21.1)		
Frequent	5 (31.3)	7 (11.7)	7 (23.3)	6 (7.6)	25 (13.5)		
Never	1 (6.3)	15 (25.0)	4 (13.3)	28 (35.4)	48 (25.9)		
Occasionally	6 (37.4)	23 (38.3)	14 (46.7)	30 (38.0)	73 (39.5)		
Patient with facial swelling should be referred to						27.35	0.001*
Dentist	15 (93.8)	29 (48.3)	19 (63.3)	30 (38.0)	93 (50.3)		
Doctor	1 (1.2)	31 (51.7)	11 (36.7)	41 (51.9)	84 (45.4)		
Nurse	0 (0.0)	0 (0.0)	0 (0.0)	2 (2.5)	2 (1.1)		
Pharmacist	0 (0.0)	0 (0.0)	0 (0.0)	6 (7.6)	6 (3.2)		
Halitosis is same as bad breath						77.76	<0.0001*
Don't know	1 (6.3)	8 (13.3)	9 (30.0)	63 (79.7)	81 (43.8)		
No	0 (0.0)	2 (3.3)	1 (3.3)	2 (2.5)	5 (2.7)		
Yes	15 (93.7)	50 (83.4)	20 (66.7)	14 (17.8)	99 (53.5)		
Number of adult dentitions						10.67	0.10
16	0 (0.0)	0 (0.0)	1(3.3)	0 (0.0)	1 (0.5)		
30	0 (0.0)	0 (0.0)	1 (3.3)	0 (0.0)	1 (0.5)		
32	16 (100.0)	60 (100.0)	28(93.4)	79(100.0)	183 (99.0)		
Total	16 (100.0)	60 (100.0)	30 (100.0)	79(100.0)	185 (100.0)		

Table 4 shows participants' knowledge about oral systemic interactions with some non-communicable diseases. Four-fifth of participants from Dentistry, two-third from Medicine and Surgery, one-fifth from Nursing and one third from Pharmacy had excellent knowledge about oral-systemic interactions ($p < 0.0001$).

Table 5 shows participants dental visit profile. Majority of participants from Pharmacy have not visited the dentist in the past. Participant's reasons for past dental visit were majorly for scaling and polishing. More of participants in Pharmacy who visited did so for extraction of teeth. Regular visit among participants was poor and various reasons were given by the participants for not regularly visiting the dentists.

Table 3 Participants knowledge about prevention and oral systemic interactions

Variables	Dentistry	Medicine & Surgery	Nursing	Pharmacy	Total	χ^2	P
	N (%)	N (%)	N (%)	N (%)	N (%)		
Oral diseases can affect systemic health						21.53	0.001*
Strongly agree	12 (75.0)	43 (71.7)	15(50.0)	32 (40.5)	102 (55.1)		
Agree	4 (25.0)	17 (28.3)	14 (46.7)	38 (48.1)	73 (39.5)		
Neutral	0 (0.0)	0 (0.0)	1 (3.3)	9 (11.4)	10 (5.4)		
Some systemic drugs can cause teeth discolouration?						33.26	<0.0001*
Strongly agree	12 (75.0)	44 (73.4)	14 (46.7)	24 (30.4)	94 (50.8)		
Agree	4 (25.0)	14 (23.3)	15 (50.0)	44 (55.6)	77 (41.6)		
Neutral	0 (0.0)	2 (3.3)	1 (3.3)	7 (8.9)	10 (5.4)		
Disagree	0 (0.0)	0 (0.0)	0 (0.0)	4 (5.1)	4 (2.2)		
There can be oral manifestations of systemic diseases?						41.06	<0.0001*
Strongly agree	13 (81.2)	38 (63.4)	13 (43.4)	18 (22.8)	82 (44.3)		
Agree	3 (18.8)	20 (33.3)	12 (40.0)	44 (55.7)	79 (42.7)		
Neutral	0 (0.0)	2 (3.3)	4 (13.3)	17 (21.5)	23 (12.5)		
Disagree	0 (0.0)	0 (0.0)	1 (3.3)	0 (0.0)	1 (0.5)		
Micro-organisms implicated in dental caries are transmitted mainly from the mother to the child?						20.64	0.06
Strongly agree	3 (18.8)	1 (1.7)	3 (10.0)	5 (6.3)	12 (6.5)		
Agree	5 (31.2)	7 (11.7)	4 (13.3)	15 (19.0)	31 (16.8)		
Neutral	2 (12.5)	22 (36.6)	3 (10.0)	23 (29.2)	50 (27.0)		
Disagree	3 (18.8)	23 (38.3)	15 (50.0)	28 (35.4)	69 (37.3)		
Strongly disagree	3 (18.8)	7 (11.7)	5 (16.7)	8 (10.1)	23 (12.4)		
There is association between poor oral health (POH) and non-communicable diseases?						43.70	<0.0001*
Strongly agree	7 (43.8)	7 (11.7)	3 (10.0)	2 (2.5)	19 (10.3)		
Agree	6 (37.4)	18 (30.0)	17 (56.7)	26 (32.9)	67 (36.2)		
Neutral	1 (6.3)	32 (53.3)	6 (20.0)	36 (45.6)	75 (40.5)		
Disagree	2 (12.5)	2 (3.3)	4 (13.3)	13 (16.5)	21 (11.4)		
Strongly disagree	0 (0.0)	1 (1.7)	0(0.0)	2 (2.5)	3 (1.6)		
Association between adverse pregnancy outcomes and periodontitis						46.92	<0.0001*
Strongly agree	9 (56.2)	4 (6.7)	3 (10.0)	3 (3.8)	19 (10.3)		
Agree	4 (25.0)	19 (31.7)	11 (36.7)	21 (26.6)	55 (29.7)		
Neutral	2 (12.5)	31 (51.6)	13 (43.3)	50 (63.3)	96 (51.9)		
Disagree	1 (6.3)	5 (8.3)	2 (6.7)	3 (3.8)	11 (5.9)		
Strongly disagree	0 (0.0)	1 (1.7)	1 (3.3)	2 (2.5)	4 (2.2)		
Association between periodontitis and cardiovascular disease						70.16	<0.0001
Strongly agree	10 (62.5)	9 (15.0)	5 (16.7)	2 (2.5)	26 (14.1)		

Agree	5 (31.2)	29 (48.3)	10 (33.3)	20 (25.3)	64 (34.6)		
Neutral	0(0.0)	17 (28.3)	8 (26.7)	52 (65.8)	77 (41.5)		
Disagree	1 (6.3)	3 (5.0)	6 (20.0)	4 (5.1)	14 (7.6)		
Strongly disagree	0(0.0)	2 (3.3)	1 (3.3)	1 (1.3)	4 (2.2)		
Association between periodontitis and chronic kidney disease						38.91	<0.0001*
Strongly agree	6 (37.5)	5 (8.3)	4 (13.3)	2 (2.5)	17 (9.2)		
Agree	7 (43.8)	18 (30.0)	9 (30.0)	21 (26.6)	55 (29.7)		
Neutral	3 (18.8)	31 (51.7)	8 (26.7)	48 (60.7)	90 (48.6)		
Disagree	0 (0.0)	6 (10.0)	8 (26.7)	47(8.9)	21 (11.4)		
Strongly disagree	0 (0.0)	0 (0.0)	1 (3.3)	1 (1.3)	2 (1.1)		
Association between periodontitis and diabetes						62.01	<0.0001*
Strongly agree	10 (62.5)	6 (10.0)	5 (16.7)	3 (3.8)	24 (13.0)		
Agree	5 (31.2)	29 (48.3)	8 (26.7)	37 (46.8)	79 (22.7)		
Neutral	1 (6.3)	23 (38.3)	8 (26.7)	31 (39.2)	63 (34.1)		
Disagree	0 (0.0)	1 (1.7)	8 (26.7)	6 (7.6)	15 (8.1)		
Strongly disagree	0 (0.0)	1 (1.7)	1 (3.3)	2 (2.5)	4 (2.2)		
Proper brushing of teeth and flossing will prevent dental caries and gingivitis						7.52	0.82
Strongly agree	12 (75.0)	32 (53.3)	13 (43.3)	38 (48.1)	95 (51.4)		
Agree	3 (18.8)	22 (36.7)	14 (46.7)	32 (42.5)	71 (38.4)		
Neutral	1 (6.3)	6 (10.0)	3 (10.0)	7(8.9)	17 (9.2)		
Disagree	0 (0.0)	0 (0.0)	0 (0.0)	1 (1.3)	1 (0.5)		
Strongly disagree	0 (0.0)	0 (0.0)	0 (0.0)	1 (1.3)	1 (0.5)		
Frequency of consumption of sugar containing food is more detrimental than the quantity of consumed.						17.20	0.14
Strongly agree	12 (75.0)	32 (53.3)	13 (43.3)	38 (48.1)	95 (51.4)		
Agree	3 (18.8)	22 (36.7)	14 (46.7)	32 (40.5)	71 (38.4)		
Neutral	1 (6.3)	6 (10.0)	3 (10.0)	7 (8.9)	17 (9.2)		
Disagree	0 (0.0)	0 (0.0)	0 (0.0)	1 (1.3)	1 (0.5)		
Strongly disagree	0 (0.0)	0 (0.0)	0 (0.0)	1 (1.3)	1 (0.5)		
Scaling and polishing can enhance systemic health?						17.20	0.14
Strongly agree	7 (43.8)	18 (30.0)	4 (13.3)	20 (25.3)	49 (26.5)		
Agree	6 (37.5)	27 (45.0)	15 (50.0)	39 (49.4)	87 (47.0)		
Neutral	3 (18.8)	11 (18.3)	11 (36.7)	16 (20.3)	41 (22.2)		
Disagree	0 (0.0)	4 (6.7)	0 (0.0)	3 (3.8)	7 (3.8)		
Strongly disagree	0 (0.0)	0 (0.0)	0 (0.0)	1 (1.3)	1 (0.5)		
Total	16 (100.0)	60 (100.0)	30 (100.0)	79(100.0)	185 (100.0)		

Table 4 Participants' knowledge score about oral-systemic interaction with non-communicable diseases

Variables	Dentistry	Medicine & Surgery	Nursing	Pharmacy	Total	χ^2	P
	N (%)	N (%)	N (%)	N (%)	N (%)		
Knowledge of oral-systemic interaction						25.25	<0.0001
Fair knowledge (24-35)	0 (0.00)	0 (0.00)	0 (0.00)	3 (3.8)	3 (1.6)		
Good knowledge (36-47)	3 (18.8)	36 (60.0)	20 (66.7)	59 (74.7)	118 (63.8)		
Excellent Knowledge (48-60)	13 (81.2)	24 (40.0)	10 (33.3)	17 (21.5)	64 (34.6)		
Total	16 (100.0)	60 (100.0)	30 (100.0)	79(100.0)	185 (100.0)		

Table 5 Participants' dental visit characteristics

Variables	Dentistry	Medicine & Surgery	Nursing	Pharmacy	Total	χ^2	P
	N (%)	N (%)	N (%)	N (%)	N (%)		
Past dental visit						21.01	<0.0001*
No	4 (25.0)	28 (46.7)	23 (76.7)	57 (72.2)	112 (60.5)		
Yes	12 (75.0)	32 (53.3)	7 (23.3)	22 (27.8)	73(39.5)		
Total	16 (100.0)	60 (100.0)	30 (100.0)	79(100.0)	185 (100.0)		
Reasons for past dental visit						21.03	0.002*
Routine check-up	2 (16.7)	2 (6.3)	2 (28.6)	5 (22.7)	11 (15.1)		
Desensitization	1 (8.3)	0 (0.0)	0 (0.0)	0(0.0)	1 (1.4)		
Extraction	1 (8.3)	5 (15.6)	3 (42.8)	7(31.8)	16 (21.9)		
Filling	1 (8.3)	1 (3.1)	0 (0.0)	1(0.0)	3(4.1)		
Scaling and polishing	6 (50.0)	24 (75.0)	2 (28.6)	8 (36.4)	40 (54.8)		
Splinting of teeth	1 (8.3)	0 (0.0)	0 (0.0)	0 (0.0)	1 (1.4)		
Total	12 (100.0)	32 (100.0)	7 (100.0)	22 (100.0)	73(100.0)		
Regular dental visit						16.00	0.001*
No	10 (62.5)	55 (91.7)	29 (96.7)	73 (92.4)	167 (90.3)		
Yes	6 (37.5)	5 (8.3)	1 (3.3)	6 (7.6)	18 (9.7)		
Total	16 (100.0)	60 (100.0)	30 (100.0)	79(100.0)	185 (100.0)		
Frequency of regular dental visit						20.19	0.02
Every 6 months	3 (50.0)	2 (40.0)	1 (100.0)	3 (50.0)	9 (50.0)		
Yearly	3 (50.0)	2 (40.0)	0 (0.0)	2 (33.3)	7 (38.9)		
Occasionally	0 (0.0)	1 (20.0)	0 (0.0)	1 (16.7)	2 (11.1)		
Total	6 (100.0)	5 (100.0)	1 (100.0)	6 (100.0)	18 (100.0)		
Reasons for non-regular dental visit						53.31	<0.0001*
Far distance	8 (80.0)	23 (41.8)	5 (21.7)	7 (9.6)	43 (25.7)		
Fear of treatment	0 (0.0)	2 (3.6)	1 (4.4)	8(11.0)	11 (6.6)		

No dental problem	2 (20.0)	22 (40.0)	17 (73.9)	45 (61.6)	86 (51.5)		
No time	0 (0.0)	7 (12.8)	5 (21.7)	6 (8.2)	18 (10.8)		
Treatment Costly	0 (0.0)	1(1.8)	1 (4.4)	7 (9.6)	9 (5.4)		
Total	10 (100.0)	55 (100.0)	23 (100.0)	73(100.0)	167 (100.0)		

4. Discussion

The oral cavity is the portal to the whole body. Poor oral hygiene can adversely affect the general health while some systemic diseases and drugs can have oral manifestations. This study assessed the dental knowledge and dental visits of final year undergraduates in health-related courses and also assessed if dental knowledge correlated with awareness among final year dental students. One hundred and eighty-five participants were recruited for the study. There was a female predominance across all faculties and overall mean age of 23.25 ± 2.61 years. This compares with studies done among university students in Southern Brazil and Lithuania that also reported female predominancies [17, 18], and contrasts with other studies that reported male predominancies [19, 20].

Dental knowledge about dental caries, calculus, scaling and polishing (S&P) and oral-systemic interactions were good among the participants. 67.6% had knowledge of dental caries and about 78.9% had knowledge of scaling and polishing. This compares with a study done among medical students that reported same good knowledge among their participants [21]. This however did not translate to better attitude as only 25.9% of them did S&P in the past and most participants do not visit the dentists regularly.

Oral systemic interactions have been established through the literature. Though, majority of the participants had good knowledge about oral-systemic interactions, they neither ask their patients with NCDs about their periodontal health nor routinely collaborate with dentists for their management [22]. A study done among general practitioners in France reported that 74.3% of their participants do not ask their patients about their periodontal health [23]. However, one-fifth of dental students were not aware of all possible systemic conditions that have been associated with periodontitis and that mothers can infect their babies with microorganisms that can cause dental caries despite the fact that their curriculum contains oral system interactions. Likewise, a few lacked knowledge about some aspects of dental visits. Thus, their knowledge did not translate to awareness.

Majority of participants in all faculties knew that dentists treat conditions related to the oral cavity and not teeth only. This compares to the study done by Neela et al where majority of medical students are aware of the dental profession.²⁴ Yet, despite this knowledge, their attitude to dentistry was still poor [24].

Periodic dental checkups are important in preventing oral diseases and their complications as well as educating patients about how to maintain good oral health.^{14, 25} Regular dental visits and routine dental checkup is still very low among our participants. In this present study only about 39.5% of students visited the Dentist in the past for extraction, scaling and polishing, filling and routine checkup. This is similar to a study that reported that 33% of respondents have visited the dentist in the past [25]. Half of those who saw dentists in the past did so for scaling and polishing and one fifth for extraction. About two-fifth of participants from nursing visited for extraction.

Regular dental visit prevalence in the study was 9.7% among the participants and compares to another study that reported a 10.6% prevalence [15]. Half of the participants in our study did not visit the dentist in the past because they had no dental problem. A study done in reported that 56.1% of their participants reported lack of need for dental treatment as the major reason for non-visit [16]. Other reasons given for non-regular visit were lack of time, no dental problems, fear of treatment, cost of treatment and far distance to dental facility. It is interesting that 62.5% of participants from Dentistry do not visit the dentists regularly and 80% of them cited far distance to dental facility as the excuse. That is however preposterous as they do clinical postings in dental clinics as part of their requirements for professional examinations. Their lack of visit could be as a result of their high academic workload.

About 70% of our participants knew dental visits should be done twice a year. However, 16.2% of participants said it should be when one has a toothache. About one-third of participants from Pharmacy did so. A study reported that 42.8% of their participants mentioned that the frequency of dental visits should be less than once every two years [24].

5. Conclusion

Though the dental knowledge of participants was good, this did not translate into better attitude. Also, only 9.7% of them visit the dentists routinely and they do not incorporate dental care into the management of their patients. There is the need to further educate the medical practitioners about oral systemic interactions and emphasize the need for collaboration while treating patients.

Compliance with ethical standards

Acknowledgments

All final year students in the Faculties of Dentistry, Medicine & Surgery, Nursing and Pharmacy in the University of Port Harcourt, Rivers State in 2021.

Disclosure of conflict of interest

The authors declare no conflict of interest.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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