

Oral self-care practices, dental attendance and self-perceived oral health status among internal medicine residents in Nigeria

Sandra Omozehio Iwuala, Kehinde Adesola Umeizudike², Obianuju Beatrice Ozoh, Olufemi Adetola Fasanmade

Department of Medicine, Faculty of Clinical Sciences, College of Medicine, University of Lagos,

²Department of Preventive Dentistry, Faculty of Dental Sciences, College of Medicine, University of Lagos, Lagos, Nigeria

Address for correspondence:

Dr. Sandra Omozehio Iwuala,
Department of Medicine, Faculty of
Clinical Sciences, College of Medicine,
University of Lagos, Lagos, Nigeria.
E-mail: sandraerhuanga@yahoo.com

ABSTRACT

Background: Oral health is important for well-being and chronic disease prevention. Physician's confidence and willingness to counsel patients on lifestyle practices is related to their personal behavior. Limited data exists regarding oral self-care practices among physicians in developing countries, as the majority seeks oral health advice and care from doctors rather than dentists. **Aim:** To determine the oral self-care practices, dental attendance, and self-perceived oral health status of internal medicine residents in Nigeria. **Methods:** A cross-sectional study was conducted among internal medicine resident doctors attending an update course using a self-administered structured questionnaire, which included oral care practices. Data were analyzed with SPSS version 21.0, $P < 0.05$ was significant. **Results:** The response rate was 82.0%. Data from 109 residents from the 6 geopolitical zones in Nigeria were analyzed. The mean age of the residents was 33.1 (4.0) years. 39.8% brushed twice a day, 20.2% used dental floss regularly, 10.1% used the roll technique for brushing and 30.3% of the doctors had never been to a dentist. However, 61.1% felt dental visits should be undertaken every 6 months and 57.8% strongly agreed/agreed that the state of their oral health was excellent. There was no difference in the oral hygiene practices by gender, designation or geopolitical zone of the residency program apart from dental flossing (female > male, $P = 0.002$). A higher proportion of junior compared to senior residents strongly agreed/agreed and strongly disagreed/disagreed that their oral health status was excellent ($P = 0.026$). **Conclusion:** The oral self-care practices of these doctors involved in managing patients with medical conditions linked to oral health is inadequate. There is a need for better education on oral self-care among physicians.

Key words

Dental attendance, internal medicine, Nigeria, oral health, oral self-care

INTRODUCTION

Oral diseases are risk factors for serious systemic disorders such as diabetes, stroke, ischemic heart disease, pneumonia, and osteoporosis.^[1-4] Oral care practices such as brushing with fluoride toothpaste, dental flossing, regular dental checkup including cleaning the teeth professionally at least twice a year, are recommended measures for maintaining good oral health. Physicians

have a major role in promoting the practice of good oral hygiene among their patients because persons with dental problems often report first to physicians.^[5-7] Furthermore, in developing countries such as Nigeria where the dentist: population ratio is grossly inadequate, many patients receive oral health education/care from physicians.^[5,6] The dental personnel: Population ratio, according to a 2014 World Health Organization (WHO) world health statistics report in Nigeria, Egypt and Canada was 0.2, 4.2, 12.6/10,000,^[8] Studies have also shown poor oral health utilization, oral health habits and poor oral health status among adult Nigerians.^[9,10] Periodontal disease was found in 15–58% in those aged above 15 years,^[10] while a national survey involving 7630 persons from the 6 geo-political zones in Nigeria reported that only 26.4% had visited the dentist, 10.5% used dental floss and 42.0% brushed twice daily.^[9]

It is known that physicians' confidence, ability and willingness to counsel and motivate patients on lifestyle

Access this article online

Quick Response Code:



Website:
www.ejgd.org

DOI:
10.4103/2278-9626.154179

behaviors is related to their personal practices. This has been demonstrated in several lifestyle practices such as smoking, physical activity, obesity and oral hygiene practices.^[11-13] Physicians act as role models of healthy habits and behavior in the society since they are more knowledgeable about health care choices and their consequences.

Oral self-care practices among dentists^[14-16] and dental students^[17] from different countries including Nigeria^[18] have been described. There is limited data on oral self-care practices, dental attendance and self-perception of oral health among medical doctors in Nigeria.^[19] Azodo and Unamatokpa, in their study among medical house officers, reported that 61.9% had no previous history of dental attendance and 64.9% perceived their health status as good/excellent^[19] Considering the association of oral health with serious systemic diseases and the important role that physicians have in identifying poor oral health, counseling on good practices and appropriate referral for dental care, it is imperative to evaluate the personal oral health practices of physicians. This study was therefore designed to evaluate the oral self-care practices, dental attendance, as well as self-perceived oral health status, of resident doctors specializing in internal Medicine from various parts of Nigeria.

METHODS

Study design and participants

This cross-sectional study was carried out among residents in internal medicine from various institutions all over the country, attending the 2014 faculty of internal medicine update course organized by the National Postgraduate Medical College of Nigeria. The National Postgraduate College of Nigeria has the responsibility for postgraduate training of medical doctors and dentists in Nigeria; attendance at these update courses is mandatory to qualify for the postgraduate examinations.^[20]

Sample size calculation

The sample size was calculated using the Kish and Leslie formula for cross-sectional studies:

Sample size = $Z^2 pq/d^2$, where $Z = 1.96$, $p =$ with a prevalence of 7.3% of dental floss use among senior dental students in Nigeria,^[18] $q = 1-p$. The minimum calculated sample size was 104.

Inclusion and exclusion criteria and data collection

All residents attending the course were invited to participate in the study. The inclusion criteria was being a resident doctor in internal medicine while the exclusion criteria was unwillingness to participate in the study. A self-administered structured questionnaire was distributed to residents who attended the update course. The questionnaire was researcher developed.

Items from the questionnaire were pooled from similar studies encountered during the literature review. Face validity of the questionnaires was done by experts in dentistry. The questionnaire consisted of 2 parts. The first part obtained information on sociodemographic characteristics of the participants including the number of years since they graduated from medical school, number of years spent in the residency program and the geopolitical zone their residency program was located. The second part inquired about their oral health practices and self-perception of oral health status. Information on oral health practices included questions on oral cleaning aids used (toothbrush, toothpaste, chewing stick, mouthwash, regular use of dental floss), method used in tooth brushing, frequency of tooth brushing, duration since last visit to the dentist, as well as reasons for not ever visiting a dentist (for those who had never visited), reason for their last visit to the dentist, treatment received at the dentist (if any), and dental attendance. The resident's knowledge on the recommended frequency of dental visits also was assessed. The perceived oral health status was evaluated with the question "I would rate the state of my oral health as excellent" with the response in a 5 point Likert scale. The questions on this part on the questionnaire were closed-ended questions. The questionnaires were retrieved on the same day they were distributed.

Ethical approval and informed consent

The questionnaire contained no identifiers. The study was approved by the Health Research and Ethics committee of the hospital. Participation was voluntary, and the respondents were free to withdraw from the study at any point in time. Written informed consent was also obtained from the participants.

Data management and statistical analysis

The 6 geopolitical zones (north-west, north central, northeast, south east, south west and south-south) were merged to 2 (north and south) for analysis purposes. The data were analyzed with SPSS version 21.0. Continuous variables were expressed as means with a standard deviation while categorical variables were expressed as frequencies with accompanying percentages. Differences between groups were compared using the Chi-square for categorical variables or Fishers exact test and t -test for continuous variables. Pearson's correlation coefficient was used to determine the relationships among age, the duration since graduation from medical school, duration of the residency program, $P < 0.05$ was considered statistically significant.

RESULTS

Of 150 questionnaires distributed, 123 were returned giving a response rate of 82.0%. However, due to missing or incomplete data only 109 were analyzed.

Sociodemographic characteristics

Participants' ages ranged from 27 to 45 years. Their sociodemographic characteristics are described in Table 1. The male resident doctors were significantly older than the females (33.7 ± 4.2 years vs. 31.8 ± 3.0 years, $P = 0.020$). The senior residents were older than the junior residents (37.1 ± 3.1 vs. 32.3 ± 3.6 years, $P < 0.001$).

There was a strong correlation between the age of the residents and the duration since graduating from medical school ($r = 0.79$, $P < 0.001$). The correlation between the age and the duration of the residency program was moderate ($r = 0.45$, $P < 0.001$).

The senior residents had a longer duration in the residency program compared to the junior residents (6.2 ± 1.3 years vs. 2.0 ± 0.4 years, $P < 0.001$).

Oral care practices of internal medicine residents

The oral care practices of the medicine resident doctors and comparison by sociodemographic characteristics are shown in Table 2. With regards to the oral cleaning aids, toothbrush with toothpaste either alone or in combination with other cleaning aids was used by almost all (99.1%); one resident used only chewing stick. The combination of toothbrush, toothpaste, and chewing stick was used by 12.8% ($n = 14$) of the residents. 1 resident (0.9%) reported using mouthwash in addition to toothbrush and toothpaste. 22 (20.2%) respondents reported using dental floss regularly. The gender, designation, and geopolitical zone distribution of oral cleaning aid used

was similar ($P > 0.05$) among the residents apart from dental flossing. Female residents used dental floss more regularly compared to male residents (odds ratio = 4.3, 95% confidence interval: 1.6–11.3, $P = 0.002$).

The distribution of tooth brushing methods is shown in Table 2. 108 participants indicated the method used in brushing their teeth. Of these, the majority, 62% ($n = 67$) used the up and down method while the roll technique was used by 10.2% ($n = 11$) residents. There was no difference in the distribution of the tooth brushing methods by sociodemographic characteristics as shown in Table 2.

With regards to frequency of cleaning the teeth [Table 2], 52.8% ($n = 57$) residents reported brushing before breakfast, 30.6% ($n = 33$) brushed before both breakfast and bedtime, and 9.3% ($n = 10$) reported brushing both after breakfast and before bedtime. There was no gender difference in the oral hygiene practices apart from dental flossing as shown in Table 2.

Pattern of dental attendance and knowledge on recommended frequency of dental visits

Table 3 shows participants' pattern of dental attendance. Nearly 70% ($n = 76$) of the residents reported a history of dental attendance. Of these, 51.3% ($n = 39$) reported dental pain as the reason for their dental visit while 25% ($n = 19$) indicated their dental visit was for a routine check-up. Other reasons included professional dental cleaning 8.9% ($n = 7$), dentures 1.3% ($n = 1$), tooth fracture 1.3% ($n = 1$), dental cosmetics 1.3% ($n = 1$), and halitosis 1.3% ($n = 1$).

Among the residents with a history of dental attendance, 18.4% ($n = 14$) had done so in the preceding 6 months, 21.1% ($n = 16$) within the preceding 6–12 months and 46 (60.5%) over 12 months ago. The most common dental treatment received was scaling and polishing: 42.1% ($n = 32$), followed by tooth extraction in 28.9% ($n = 22$) of the participants. Other treatments included restorations: 5.2% ($n = 4$) and dentures: 5.3% ($n = 4$).

A total of 33 residents (30.2%) had never been to a dentist. The most commonly cited reasons included the absence of dental problems (60.6%), fear of dentists (6.1%), and being too busy (9.1%). Others (24.2%) did not respond to the question. The distribution of dental attendance and knowledge regarding recommended dental visits was similar according to gender, designation, and geopolitical zone.

Regarding the question "how often should one visit the dentist?" Among the 108 surveys analyzed, 61.1% ($n = 66$) of participants responded "every 6 months" [Figure 1]. The pattern of dental attendance and knowledge about recommended frequency of dental visits was similar ($P > 0.05$) by gender, designation, and geopolitical zone.

Table 1: Sociodemographic characteristics of the study population

Variable	All ($n=109$) (%)
Age (years)	33.1 (4.0)
Ethnic group	
Yoruba	38 (34.9)
Igbo	35 (32.1)
Hausa	5 (4.6)
Others	30 (27.5)
Unknown	1 (0.9)
Designation	
Registrar	91 (83.5)
Senior registrar	18 (16.5)
Geopolitical zone of residency program	
South West	30 (27.5)
South East	27 (24.8)
South-South	18 (16.5)
North Central	16 (14.7)
North East	5 (4.6)
North West	9 (8.3)
Nonresponse	4 (2.9)
Number of years postmedical school graduation	7.4 (2.8)
Duration of residency (years)	2.7 (1.7)

Values are mean (SD) or frequencies with accompanying percentages. SD - Standard deviation

Table 2: Oral hygiene practices of the internal medicine residents and comparison by sociodemographic variables

Variable	All (n=109)	Gender			Designation			Geopolitical zone of residency program ^a		
		Female (n=35) (%)	Male (n=74) (%)	P	Registrar (n=91) (%)	Senior registrar (n=18) (%)	P	North (n=30) (%)	South (n=75) (%)	P
Type of oral cleaning aid										
Toothbrush and toothpaste	92 (84.4)	28 (30.4)	64 (69.6)	0.297	77 (83.7)	15 (16.3)	0.828	26 (29.5)	62 (70.5)	1.000
Chewing stick	1 (0.9)	1 (100.0)	0 (0.0)		1 (100.0)	0 (0.0)		0 (0.0)	1 (100.0)	
Toothbrush toothpaste and chewing stick	14 (12.8)	5 (35.1)	9 (64.3)		11 (78.6)	3 (21.4)		4 (28.6)	10 (71.4)	
Toothbrush, toothpaste, and mouthwash	1 (0.9)	0 (0.0)	1 (100.0)		1 (100.0)	0 (0.0)		0 (0.0)	1 (100.0)	
Others	1 (0.9)	1 (100.0)	0 (0.0)		1 (0.0)	0 (0.0)		0 (0.0)	1 (100.0)	
Regular use of dental floss										
Yes	22 (20.2)	13 (59.1)	9 (40.9)	0.002*	17 (77.3)	5 (22.7)	0.380	5 (22.7)	17 (77.3)	0.495
No	87 (79.8)	22 (25.3)	65 (74.7)		74 (85.1)	13 (14.9)		25 (30.1)	58 (69.9)	
Method of brushing										
No particular direction	16 (14.7)	4 (25.0)	12 (75.0)	0.729	12 (75.0)	4 (25.0)	0.503	3 (20.0)	12 (80.0)	0.054
Horizontal	6 (5.5)	1 (16.7)	5 (83.3)		4 (66.7)	2 (33.3)		5 (83.3)	1 (16.7)	
Up and down	67 (61.5)	22 (32.8)	45 (67.2)		58 (86.6)	9 (13.4)		18 (28.1)	46 (71.9)	
Horizontal plus up and down	8 (7.3)	3 (37.5)	5 (62.5)		7 (87.5)	1 (12.5)		1 (12.5)	7 (87.5)	
Roll technique	11 (10.1)	5 (45.5)	6 (54.6)		9 (81.8)	2 (18.2)		3 (27.3)	8 (72.7)	
Not indicated	1 (0.9)	1 (100.0)	0 (0.0)		1 (100.0)	0 (0.0)		0 (0.0)	1 (100.0)	
Frequency of cleaning teeth										
Before breakfast	57 (52.3)	17 (29.8)	40 (70.2)	0.518	48 (84.2)	9 (15.8)	0.953	16 (28.6)	40 (71.4)	0.119
After breakfast	7 (6.4)	1 (14.3)	6 (85.7)		6 (85.7)	1 (14.3)		4 (57.1)	3 (42.9)	
Before breakfast and before bedtime	33 (30.3)	14 (42.4)	19 (57.6)		27 (81.8)	6 (18.2)		5 (16.1)	26 (83.9)	
After breakfast and before bedtime	10 (9.2)	3 (30.0)	7 (70.0)		8 (80.0)	2 (20.0)		4 (44.4)	5 (55.6)	
Others	1 (0.9)	0 (0.0)	1 (100.0)		1 (100.0)	0 (0.0)		0 (0.0)	1 (100.0)	
Not indicated	1 (0.9)	0 (0.0)	1 (100.0)		1 (100.0)	0 (0.0)		0 (0.0)	1 (100.0)	

*Statistically significant, ^an=105**Table 3: Dental attendance and knowledge about recommended frequency of dental visits of the internal medicine residents, and comparison by gender, designation and geopolitical zone of residency program**

Variable	All (n=109)	Gender			Designation			Geopolitical zone of residency program ^a		
		Female (n=35) (%)	Male (n=74) (%)	P	Registrar (n=91) (%)	Senior registrar (n=18) (%)	P	North (n=30) (%)	South (n=75) (%)	P
Have you ever visited a dentist?										
Yes	76 (69.7)	27 (35.5)	49 (64.5)	0.246	64 (84.2)	12 (15.8)	0.757	21 (28.8)	52 (71.2)	0.863
No	33 (30.3)	8 (24.2)	25 (75.8)		27 (81.8)	6 (18.2)		9 (28.1)	23 (71.9)	
Reason for dental visit (n=76) ^b										
Dental pain	39 (51.3)	16 (41.0)	23 (59.0)	0.589	32 (82.1)	7 (17.9)	0.843	12 (30.7)	27 (69.2)	0.941
Routine	19 (25.0)	9 (47.4)	10 (52.6)		17 (89.5)	2 (10.5)		4 (23.5)	13 (76.5)	
Others	18 (23.7)	10 (35.6)	8 (44.4)		15 (83.3)	3 (16.7)		5 (29.4)	12 (70.6)	
How often should one visit the dentist?										
6 months	66 (60.6)	22 (33.3)	44 (66.7)	1.000	58 (87.9)	8 (12.1)	0.448	19 (29.7)	45 (70.3)	0.183
12 months	35 (32.1)	11 (31.4)	24 (68.6)		27 (77.1)	8 (22.9)		8 (24.2)	25 (75.8)	
2 years	2 (1.8)	0 (0.0)	2 (100.0)		2 (100.0)	0 (0.0)		2 (100.0)	0 (0.0)	
Only where there is a problem	4 (3.7)	1 (25.0)	3 (75.0)		3 (75.0)	0 (0.0)		1	3	
No response	2 (1.8)	1 (50.0)	1 (50.0)		1 (50.0)	1 (50.0)		0 (0.0)	2 (100.0)	

Statistically significant

Self-rating of oral health

Figure 2 shows the distribution of participants' responses to the statement "I would rate the state of my oral health as excellent." Among the respondents, 16.5% (n = 18) strongly agreed, 41.3% (n = 45) agreed, 22.9% (n = 25)

were neutral, and the remaining 12.8% (n = 12) disagreed with the statement.

Table 4 shows the comparison of the self-rating of oral health as excellent according to gender, designation, and

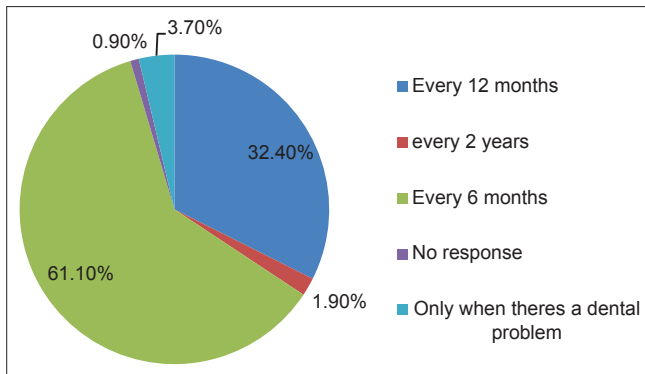


Figure 1: Distribution of the response to the question "how often should one visit the dentist?"

sociodemographic characteristics. There was a difference in the self-rating of oral health as excellent according to the designation ($P = 0.026$) but not by gender or geopolitical zone. Junior residents compared to senior residents were more likely to strongly agree/agree (60.4% vs. 44.4%) or strongly disagree/disagree (14.3% vs. 5.6%) while senior compared to junior residents were more likely to be neutral (50.0% vs. 17.6%) regarding that statement.

DISCUSSION

The impact of oral health on systemic health is evidenced in conditions such as diabetes, stroke, and ischemic heart disease. In view of the fact that internal medicine residents in Nigeria are often the first to assess the oral health care needs of patients in the hospital setting, this study was conducted. It is well-known that the personal behaviors of physicians affect their ability to motivate, counsel and educate patients. This has been demonstrated previously with behaviors such as smoking, physical activity, obesity and oral health.^[11-13]

Various oral hygiene aids are available to assist in the maintenance of oral hygiene. In this study, the majority (99.1%) of residents reported using both a toothbrush and toothpaste for cleaning their teeth. This finding is similar to that of other studies among various categories of health care professionals in different parts of the world that have reported the use of toothbrush and fluoride toothpaste as a cleaning aid in over 90% of the participants.^[18] This was expected among this group of health practitioners and is encouraging since it is the most often recommended and preferred method for maintaining good oral hygiene.

When used correctly, chewing sticks, a traditional cleaning aid in Nigeria^[21] and other parts of the world^[17] even among health care professionals^[17] demonstrate beneficial effects on oral health.^[22,23] Surprisingly, the frequency of chewing stick use among the residents

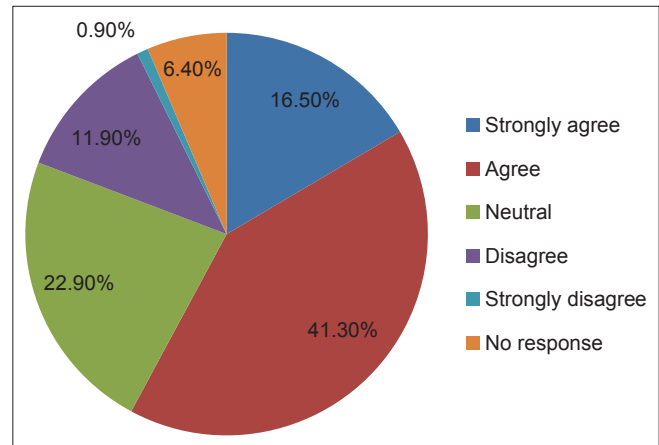


Figure 2: Distribution of the response to the statement "I would rate the state of my oral health as excellent."

in this study was higher than the 7% reported among 100 undergraduate students in the Nigerian study by Akhimie *et al.*^[24] In their study, chewing stick was used in combination with toothbrush. The reason for the higher prevalence of chewing stick use among our study participants can be ascribed to their relatively older age since older persons may be more likely than younger persons to adhere to traditional practices. Older persons were also found to use chewing stick more frequently in a study from Cameroon.^[25]

Various patterns of tooth brushing techniques have been reported. The most commonly recommended are the Bass technique and roll techniques.^[26] The fact that the roll (10.2%) technique was not commonly utilized in the present study could possibly highlight the ignorance of most of the respondents about the recommended tooth brushing technique. It would be interesting to assess their reasons for the choice of brushing techniques in future studies. On the other hand, the lower frequency of use of the horizontal (scrub) method by the doctors in our study (5.6%) compared to the higher frequency (37.1%) among the university undergraduates in Nigeria^[24] may be attributed to the doctors' greater oral health knowledge and awareness of the association between the horizontal brushing method and gum recession and cervical abrasion.

Recommended oral self-care includes brushing the teeth at least twice a day,^[27] in the morning, (preferably after breakfast) and before bedtime at night. In this study, less than half (39.9%) of the respondents brushed their teeth twice a day with nearly 77% brushing before both breakfast and bedtime. Our study found a higher frequency of persons who brushed twice daily compared to 24.2% of the university undergraduates in Nigeria.^[24] On the contrary, it was lower than the 55.9% in an Indian study of dental professionals.^[14] This poor oral hygiene practice will compromise effective plaque control and should be addressed among the resident doctors through proper oral health education.

Table 4: Self-rating of oral health as excellent of the internal medicine residents and comparison by sociodemographic variables

Variable	All (n=109)	Gender			Designation			Geopolitical zone of residency program ^a		
		Female (n=35) (%)	Male (n=74) (%)	P	Registrar (n=91) (%)	Senior registrar (n=180) (%)	P	North (n=30) (%)	South (n=75) (%)	P
Self-rating of oral health as excellent										
Strongly agree/agree	63 (57.8)	18 (25.6)	45 (28.6)	0.550	55 (87.3)	8 (12.7)	0.026*	17 (27.9)	44 (72.1)	0.993
Neutral	25 (22.9)	7 (28.0)	18 (72.0)		16 (64.0)	9 (36.0)		7 (29.2)	17 (70.8)	
Strongly disagree/disagree	14 (12.8)	6 (42.9)	8 (57.1)		13 (92.9)	1 (7.1)		4 (28.6)	10 (71.4)	
No response	7 (6.4)	4 (57.1)	3 (42.9)		7 (100.0)	0 (0.0)		2 (33.3)	4 (66.7)	

Statistically significant

It is well-established that the sole use of a toothbrush is inadequate for effective dental plaque removal. Thus, use of other interdental cleaning aids like dental floss is recommended.^[28] The present study found a low frequency of the use of regular dental floss (20.2%) among the internal medicine residents. It is plausible that dental floss is not readily available in Nigeria. This may be due to its cost or poor awareness of its role as an interdental cleaning aid among the resident doctors in maintaining good oral hygiene. In this study, a significantly higher proportion of females reported using dental floss regularly compared to males among our study participants. Zadik *et al.*^[29] likewise, observed a higher frequency of dental flossing among females compared to males. Several studies have indeed reported better knowledge,^[30] attitude^[31] and practices of oral health among females compared to males.^[19,32,33]

Attending regular dental checkups, at least every 6 months, is recommended for maintaining oral health. In this study among medical doctors, it is noteworthy that less than a third (30.3%) had never been to the dentist, a finding, which clearly contrasts with the statement by the majority that dental visits should be undertaken every 6 months. Dental pain was the most frequent reason (51.3%) for visiting the dentist in our study, which has also been described among dental students,^[32,34] dental personnel^[11,31] and other categories of health workers.^[35] The situation is not different among dental professionals with better knowledge and access to dental practices. 35.7% of dentists in an Indian study admitted to visiting dentists only when there was a dental problem.^[14] The poor dental attendance among these residents may be a reflection of the poor perception of the importance preventive dental care, which has been reported among other categories of Nigerian health workers including medical doctors,^[19] and dental surgeon assistant students.^[36]

Self-rated oral health is a subjective assessment of individuals oral health status and perceived oral health needs.^[37] Factors such as sociodemography,^[38] oral health behavior^[39] and clinical oral condition^[40] have been found to affect self-rating of oral health.

Younger persons have been reported to rate their oral health better compared to older persons, even among dental personnel in Nigeria. It is interesting to note that although majority (57.8%) of the residents strongly agreed/agreed that their oral health status was excellent, it was not reflected in some oral care practices essential for maintaining good oral health. It would be interesting to establish the relationship among the self-rated oral health status, knowledge of preventive oral health behavior and actual oral health status among these doctors. The high proportion of self-rating of oral health as excellent despite gaps in their personal oral care practices may also affect the perceived dental treatment needs of medical patients they care for.

In this study, 50.0% of the senior residents were neutral on the self-rating of oral health as excellent, whereas the junior residents were more likely to either agree or disagree with the statement There were no differences in the oral care habits and dental attendance between the senior and junior residents. The explanation could be due to the higher level of medical knowledge and experience of the senior residents makes them have a deeper insight/perception about the true state of their oral health compared to the junior residents. This also made them more cautious in agreeing or disagreeing with the statement. We did not find a gender difference in the self-rating of oral health, as reported by Azodo and Unamatokpa, in their study among Nigerian medical house officers.^[19]

The strength of the study was the inclusion of resident doctors from all the geopolitical zones of Nigeria, which is a representative sample.

The use of self-report of oral health habits and perceived oral health is a limitation of this study. The information obtained may thus be prone to response bias. However, a good correlation between self-perceived and actual oral health status has been reported.^[40]

CONCLUSION

The promotion of oral self-care is one of the goals that the WHO has set for the year 2020. Although over half of the

residents rated their oral health status as excellent, it is apparent that their oral self-care and dental attendance is inadequate. This is important since they are at the forefront of managing a diverse array of patients with medical conditions linked to oral health and may affect their effectiveness as good role models of oral care as well as oral health educators.

There is a need for greater awareness among physicians about their oral hygiene practices, which would help to propagate positive oral health behaviour to the patients they manage and to the public at large.

REFERENCES

- Demmer RT, Desvarieux M. Periodontal infections and cardiovascular disease: The heart of the matter. *J Am Dent Assoc* 2006;137 Suppl:14S-20.
- Mealey BL. Periodontal disease and diabetes. A two-way street. *J Am Dent Assoc* 2006;137 Suppl:26S-31.
- Aspalli SS, Shetty VS, Parab PG, Nagappa G, Devnoorkar A, Devarathnamma MV. Osteoporosis and periodontitis: Is there a possible link? *Indian J Dent Res* 2014;25:316-20.
- Bansal M, Khatri M, Taneja V. Potential role of periodontal infection in respiratory diseases – A review. *J Med Life* 2013;6:244-8.
- Cohen LA, Bonito AJ, Eicheldinger C, Manski RJ, Macek MD, Edwards RR, *et al.* Comparison of patient visits to emergency departments, physician offices, and dental offices for dental problems and injuries. *J Public Health Dent* 2011;71:13-22.
- Cohen LA, Cotten PA. Adult patient visits to physicians for dental problems. *J Am Coll Dent* 2006;73:47-52.
- Sa'adu ZO, Abdulraheem IS. Oral health care practice and socio-demographic findings among the physicians in Ilorin, Nigeria. *Niger J Med* 2003;12:211-6.
- Health Systems. World Health Statistics. World Health Organization; 2014. Available from: http://www.apps.who.int/iris/bitstream/10665/112738/1/9789240692671_eng.pdf?ua=. [Last accessed on 2015 Jan 13].
- Olusile AO, Adeniyi AA, Orebanjo O. Self-rated oral health status, oral health service utilization, and oral hygiene practices among adult Nigerians. *BMC Oral Health* 2014;14:140.
- Akpata ES. Oral health in Nigeria. *Int Dent J* 2004;54:361-6.
- Howe M, Leidel A, Krishnan SM, Weber A, Rubenfire M, Jackson EA. Patient-related diet and exercise counseling: Do providers' own lifestyle habits matter? *Prev Cardiol* 2010;13:180-5.
- Lobelo F, Duperly J, Frank E. Physical activity habits of doctors and medical students influence their counselling practices. *Br J Sports Med* 2009;43:89-92.
- Zhu DQ, Norman IJ, While AE. The relationship between doctors' and nurses' own weight status and their weight management practices: A systematic review. *Obes Rev* 2011;12:459-69.
- Gopinath V. Oral hygiene practices and habits among dental professionals in Chennai. *Indian J Dent Res* 2010;21:195-200.
- Madan C, Arora K, Chadha VS, Manjunath BC, Chandrashekar BR, Rama Moorthy VR. A knowledge, attitude, and practices study regarding dental floss among dentists in India. *J Indian Soc Periodontol* 2014;18:361-8.
- Wagle M, Trovik TA, Basnet P, Acharya G. Do dentists have better oral health compared to general population: A study on oral health status and oral health behavior in Kathmandu, Nepal. *BMC Oral Health* 2014;14:23.
- Almas K, Al-Hawish A, Al-Khamis W. Oral hygiene practices, smoking habit, and self-perceived oral malodor among dental students. *J Contemp Dent Pract* 2003;4:77-90.
- Folayan MO, Khami MR, Folaranmi N, Popoola BO, Sofola OO, Ligali TO, *et al.* Determinants of preventive oral health behaviour among senior dental students in Nigeria. *BMC Oral Health* 2013;13:28.
- Azodo CC, Unamatokpa B. Gender difference in oral health perception and practices among Medical House Officers. *Russian Open Med J* 2012;1:0208.
- Tanwani LK, Mokshagundam SL. Lipodystrophy, insulin resistance, diabetes mellitus, dyslipidemia, and cardiovascular disease in human immunodeficiency virus infection. *South Med J* 2003;96:180-8.
- Bukar A, Danfillo IS, Adeleke OA, Ogunbodede EO. Traditional oral health practices among Kanuri women of Borno State, Nigeria. *Odontostomatol Trop* 2004;27:25-31.
- al-Otaibi M. The miswak (chewing stick) and oral health. *Studies on oral hygiene practices of urban Saudi Arabians. Swed Dent J Suppl* 2004; 167:2-75.
- Malik AS, Shaikat MS, Qureshi AA, Abdur R. Comparative effectiveness of chewing stick and toothbrush: A randomized clinical trial. *N Am J Med Sci* 2014;6:333-7.
- Akhimie EE, Oginni FO, Oginni AO. A study of tooth brushing pattern and its effects on dental tissues in Obafemi Awolowo University students. *Niger Dent J* 2013;21:70-6.
- Agbor MA, Azodo CC. Assessment of chewing stick (miswak) use in a muslim community in Cameroon. *Eur J Gen Dent* 2013;2:50-3.
- Gibson JA, Wade AB. Plaque removal by the Bass and Roll brushing techniques. *J Periodontol* 1977;48:456-9.
- Attin T, Hornecker E. Tooth brushing and oral health: How frequently and when should tooth brushing be performed? *Oral Health Prev Dent* 2005;3:135-40.
- Gluch JI. As an adjunct to tooth brushing, interdental brushes (IDBs) are more effective in removing plaque as compared with brushing alone or the combination use of tooth brushing and dental floss. *J Evid Based Dent Pract* 2012;12:81-3.
- Zadik Y, Galor S, Lachmi R, Proter N. Oral self-care habits of dental and healthcare providers. *Int J Dent Hyg* 2008;6:354-60.
- Al-Ansari JM, Honkala S. Gender differences in oral health knowledge and behavior of the health science college students in Kuwait. *J Allied Health* 2007;36:41-6.
- Ostberg AL, Halling A, Lindblad U. A gender perspective of self-perceived oral health in adolescents: Associations with attitudes and behaviours. *Community Dent Health* 2001;18:110-6.
- Komabayashi T, Kwan SY, Hu DY, Kajiura K, Sasahara H, Kawamura M. A comparative study of oral health attitudes and behaviour using the Hiroshima University – Dental Behavioural Inventory (HU-DBI) between dental students in Britain and China. *J Oral Sci* 2005;47:1-7.
- Polychronopoulou A, Kawamura M. Oral self-care behaviours: Comparing Greek and Japanese dental students. *Eur J Dent Educ* 2005;9:164-70.
- Kawamura M, Ikeda-Nakaoka Y, Sasahara H. An assessment of oral self-care level among Japanese dental hygiene students and general nursing students using the Hiroshima University – Dental Behavioural Inventory (HU-DBI): Surveys in 1990/1999. *Eur J Dent Educ* 2000;4:82-8.
- Umezudike KA, Ayanbadejo PO, Taiwo OA, Savage KO, Alade GO. Utilization of Dental Services by Administrative workers in a Tertiary Health Institution in Lagos, Nigeria – A Pilot Study. *Niger Q J Hosp Med* 2014;24:86-90.
- Lawal FB, Olawole WO, Sigbeku OF. Self rating of oral health status by student dental surgeon assistants in Ibadan, Nigeria – A pilot survey. *Ann Ib Postgrad Med* 2013;11:12-7.
- Atchison KA, Gift HC. Perceived oral health in a diverse sample. *Adv Dent Res* 1997;11:272-80.

38. Okunseri C, Yang M, Gonzalez C, LeMay W, Iacopino AM. Hmong adults self-rated oral health: A pilot study. *J Immigr Minor Health* 2008;10:81-8.
39. Kojima A, Ekuni D, Mizutani S, Furuta M, Irie K, Azuma T, *et al.* Relationships between self-rated oral health, subjective symptoms, oral health behavior and clinical conditions in Japanese university students: A cross-sectional survey at Okayama University. *BMC Oral Health* 2013;13:62.
40. Kim HY, Patton LL. Intra-category determinants of global self-rating of oral health among the elderly. *Community Dent Oral Epidemiol* 2010;38:68-76.

How to cite this article: Iwuala SO, Umeizudike KA, Ozoh OB, Fasanmade OA. Oral self-care practices, dental attendance and self-perceived oral health status among internal medicine residents in Nigeria. *Eur J Gen Dent* 2015;4:79-86.

Source of Support: Nil, **Conflict of Interest:** None declared.