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Knowledge, attitude and practice towards halitosis among clinical students of the University of Benin

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Abstract

Background: Halitosis is a universal medico-social problem in all communities of the world. Objective: Aimed to find out the level of knowledge, attitude and practice of clinical students towards halitosis.
Materials and Method: This was a cross-sectional study conducted to assess the perception towards halitosis among clinical students in the University of Benin. The inclusion criteria included; any student who was eligible to give consent for the research and, those that consented to participate in the study. Data from the questionnaires was analyzed using the IBM statistical package for Scientific Solutions (SPSS) version 21.0.
Results: A total of 80 clinical students were assessed on the perception of halitosis. The age group between 21-25 years accounted for the highest proportion with 49 (61.3%) of the respondents. On knowledge of halitosis, 78 (97.5%) of the respondents reported to have heard about halitosis. Concerning the source of halitosis, 79 (98.8%) agreed that it is due to oral conditions. Concerning the most qualified health professional to treat halitosis, 79 (98.8%) agreed that is the dentist. About 75(93.8%) believe that halitosis can be treated and that if not treated, can lead to loss of confidence 76 (95%) and poor academic performance 39 (48.8%).
Conclusion: The knowledge and attitude of clinical students towards halitosis was good but their practice towards halitosis was not so encouraging and as such, there is need for more dental education towards routine oral health practices so that the clinical students can be an effective role model to the general populace.

Key words: Halitosis, knowledge, attitude, practice.

Introduction

Halitosis is a Latin word which is derived from halitus (breathed air) and osis (pathological alteration). It is used to describe unpleasant odour emanating from the mouth or from breath. Foetor oris, oral malodour, mouth odour, bad breath are other terms which are used to describe and characterize the halitosis.[1]

The exact prevalence of halitosis is still uncertain due to limited number of studies. However, studies available evaluated the prevalence of halitosis in general population with rates ranging from 22 to 50%.[2,3] In Nigeria, few studies have been documented on the prevalence of halitosis ranging from 13 to 14.8%.[4-6]

The causes of halitosis could be intra-oral or extra-oral. Intra-oral causes constitute 85% of malodour,[7] and this includes unclean dentures, infections of the throat, poor oral hygiene, periodontal diseases, faulty restorations, tongue coats and oral carcinomas. Extra-oral causes include, Ear Nose and Throat infections (acute pharyngitis, purulent sinusitis and postnasal drip), bronchial and lung disease (chronic bronchitis, bronchiectasis, bronchial carcinoma), liver disease (cirrhosis), kidney disorders (chronic renal failure), metabolic

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disorders (diabetes mellitus), Gastrointestinal disorders (gastroesophagal reflux disease).[8]

Halitosis is a universal medico-social problem in all communities of the world; a common complaint for both genders irrespective of age, social status, race or nationality.[9] Concern regarding the social impart of halitosis is the third most common reason, patients visit dental clinic after tooth decay and gum disease.[10]

Halitosis is a source of concern to those affected and frequently causes embarrassment that may disrupt interpersonal social communication.[11] The immense impact of halitosis on affected persons and its associated personal discomfort, low self-esteem, suicidal tendencies and emotional distress has often led to the abuse or excessive use of mouthwashes, rinses, spray, and chewing gum with a view to mask the odour. Hence, halitosis is an oral problem worth paying attention to by dentist, other health care providers and the society at large. [6]

There is limited information available on halitosis in Nigeria. There is little knowledge regarding the cause and the treatment options available in eradicating halitosis. Extensive study on halitosis is necessary because it can be considered as a major factor that would influence the quality of life and reduce social stigmatization. Since clinical students are the future health care providers, hence the aim of this study is to find out their level of knowledge, attitude and practice towards halitosis. The information collected can be helpful in updating the clinical students' current curriculum concerning halitosis.

Methodology

This was a cross-sectional study conducted to assess the perception towards halitosis among clinical medical and dental students (400 level to 600 level) residing in the clinical students hostel of the University of Benin, Benin City. The period of the study was from June to August, 2018. The inclusion criteria included; any student who was eligible to give consent for the research and, those that consented to participate in the study. Psychiatric and uncooperative clinical students were excluded from the study. Participants were approached in the clinical students' hostel and were introduced to the project and asked if they were willing to participate in the study. All participants who agreed to join the study signed a consent form and were handed the self-administrated questionnaires which consisted of 4 sections namely; demographics (age, gender, course, level and marital status), knowledge of halitosis, attitude and practice toward halitosis.

The minimum sample size for this study was calculated using the formula for single proportions in epidemiological study.[12]

$$n = \frac{Z2pq}{d2}$$

Where:

n = minimum sample size, z = standard normal deviate set at 1.96 (at 95% confidence interval)

p = prevalence value (proportion of a particular characteristic in a study)[12]

q = 1 – p (0.05), d = degree of accuracy which was 0.05 for this study

Thus:

p = prevalence n value = 5% = 0.05, q = 1.0 – p = 1 – 0.05 = 0.95

Substituting for the above equation,

n = 1.96 x 1.96 x 0.05 x 0.95 / 0.05 x 0.05 = 0.182476/0.0025 = 72.9904

Assuming an attrition of 10% = 10/100x72.9904 = 7.29904

Thus, for this study, sample size will be 72.9904 + 7.29904 = 80

Data from the questionnaires was analyzed using the IBM statistical package for Scientific Solutions (SPSS) version 21.0. The results were presented as prose and frequency tables.

Verbal informed consent was obtained from participants who agreed to participate in the study.

Results

A total of 80 clinical students were assessed on the perception of halitosis. The number of male respondents was slightly higher than the female respondents with respective proportion being 1.2:1. The age group between 21-25 years accounted for the highest proportion with 49(61.3%) of the respondents. The mean age of the respondent was 23.23 + 2.98 years (Table 1).

On knowledge of halitosis, 78(97.5%) of the respondents reported to have heard about the term halitosis. Concerning the source of halitosis, 79(98.8%) agreed that it is due to oral conditions in the patient. Other respondents also ticked other primary sources such as gastrointestinal tract

disorders 39(48.8%) and other body conditions 29(36.3%). Majority of the total respondents 76(95%) agreed that the major intraoral cause of halitosis is due to poor oral hygiene. Concerning the most qualified health professional to treat halitosis, 79(98.8%) agreed that the dentist is the most appropriate health professional to manage cases of halitosis. Other respondents also ticked other health professionals such as Ear Nose and Throat Surgeons 33(41.3%), Physicians 18(22.5%) and other health workers 7(8.8%). Almost all the respondents 79(98.8%) agreed that halitosis is not contagious (Table 2).

About one-thirds of the participant 25(31.3%) self-reported that they have experienced halitosis.

Among the respondents, 27(33.8%) said they experienced halitosis immediately after waking up in the morning while 16(20%) experience theirs when they are hungry and during fasting. A higher proportion of the respondents 75(93.8%) believe that halitosis can be treated and that if not treated, can lead to loss of confidence 76(95%) and poor academic performance 39 (48.8) (Table 3).

On oral health practice, 61(76.3%) of respondents brush their teeth twice daily, 72(90.0%) believes that drinking plenty of water can reduce halitosis, while 77(96.3%) increased their water intake to relieve halitosis, and 10(12.5%) indulge in brushing their tongue. Majority of the respondents 72(90%), agreed that the most appropriate examination for patients with halitosis is the comprehensive examination of the mouth and throat of the patient (Table 4).

Table 1: Socio demographic characteristics of the respondents

Variables	Frequency (%) n=80
Age Group (years)	
15 - 20	17 (21.3%)
21 – 25	49 (61.3%)
26 – 30	11 (13.8%)
31 - 35	3 (3.8%)
Gender	
Male	44 (55.0%)
Female	36 (45.0%)
Marital status	
Single	80 (100.0%)
Married	0 (0.0%)
Level	
400	40 (50.0%)
500	30 (37.5%)
600	10 (12.5%)

Mean age = 23.23 ± 2.98yrs

Table 2: Knowledge of halitosis by the respondent

Variables	Frequency (%) n=80
Have you heard of halitosis?	
Yes	78(97.5%)
No	2(2.5%)
What is the primary source of halitosis?	
Oral conditions	79(98.8%)
Gastrointestinal tract disorders	39(48.8%)
Other body system	29 (36.3%)
What are the intraoral causes of halitosis?	
Poor oral hygiene	76 (95.0%)
Carious cavities	67 (83.8%)
Periodontal diseases	68 (85.0%)
Oral infections	73 (91.3%)
Xerostomia	59 (73.8%)
What are the extraoral causes of halitosis?	
Sinus/pulmonary infections	59(73.8%)
Gastrointestinal tract infections	56(70.0%)
Renal infections	20(25.0%)
Liver infections	28(35.0%)
Stress	23 (35.0%)
Certain foods e.g garlic	76 (95.0%)
Alcohol/smoking	66(82.5%)
Who are the appropriate health profession to treat halitosis?	
Dentist	79(98.8%)
ENT Specialist	33(41.3%)
Physician	18(22.5%)

Table 3: Attitude toward halitosis by the respondents

Variables	Frequency (%) n=80
Have you had halitosis?	
Yes	25(31.3%)
No	55(68.8%)
How did you know you have halitosis?	
Could smell my bad breath	26(32.5%)
Someone told me	11 (13.8)
People cover their nose when I talk	5 (6.3%)
When did you experience halitosis more?	
After waking up	27(33.8%)
When talking to others	3(3.8 %)
When fasting	16 (20.0%)
In the afternoon	8 (10.0%)
In the evening	8 (10.0%)
The whole day	4(5.0%)
Can halitosis be treated?	
Yes	75(93.8%)
No	1 (1.3%)
I don't know	1 (1.3%)
Can halitosis lead to loss of confidence?	
Yes	76(95.0%)
No	2(2.5%)
I don't know	0 (0.0)
Can halitosis affect academic performance?	
Yes	39(48.8%)
No	33(41.3%)
I don't know	6(7.5%)

Table 4: Practice towards halitosis

Variables	Frequency (%) n=80
Routine oral health practice	
Brushing twice daily	61 (76.3%)
Use of dental floss	23 (28.8%)
Visit to the dentist	21 (26.3%)
Drinking plenty of water	72 (90.0%)
Brushing tongue	77 (96.3%)
Examination of patient with halitosis	
Examination of the mouth/throat	72 (90.0%)
Blood test	19 (23.8%)

Discussion

This study was conducted to assess the self-perception, knowledge, awareness and altitude of halitosis among young, undergraduate clinical students. Its findings are important because halitosis is one of the most unattractive aspects of social interaction. In line with the findings of Alshehri F, 2016,[13] the participants in this study cited oral conditions most frequently as a main cause of bad breath, followed by gastrointestinal tract disorders. The knowledge among 98.8% of respondents that halitosis is not contagious is consistent with the 82% reported in an earlier study.[14] Also the knowledge among almost all the respondents that halitosis can be treated was also very overwhelming. This could be related to the respondents' extent of knowledge, since the participants were clinical students.

As in prior studies, most respondents agreed that having poor oral hygiene, is the main intraoral cause of halitosis.[13,15] In the literature, self-reported halitosis has been connected to insufficient oral hygiene and infrequent tooth brushing.[16,17]

According to the results obtained in this study, it was seen that people are only aware about tooth brushing and tongue brushing as the remedial measures for halitosis. There was lack of knowledge among the respondents about the availability of other oral hygiene aids such as use of dental floss. Lack of knowledge about halitosis prevention among people with halitosis has been also reported previously.[18] Nonetheless, awareness and concern regarding halitosis are reported to result in better extra oral self-care practices as reported in previous studies.[19,20]

As in the present study, Sedky NA, 2015[15] reported that a high percentage of respondents identified dentists as the best professionals to treat halitosis, in contrast to a Portuguese study in which gastroenterologists were most frequently selected.[21]

In this study, halitosis was seen to have a huge negative impact on one's confidence and this is in agreement with the recent review of Akaji et al., 2014[8] which emphasized the importance of controlling bad breath because it has serious impact on social life of those affected by the condition. In their study on attitudes towards individuals with halitosis among the Dutch general population, de Jongh et al.[22] documented that halitosis or bad breath was reported to be a strong 'downer' when meeting a person for the first time. This indicates that bad breath greatly lowers one's respect among the people he/she encounters. In an article on halitosis and its psychological impact,[23] it was concluded that bad breath represents a problematic element for the

individual and his/her relational life. And that smelly emanation comes into conflict with the wish to attract, to please, and or to seduce. In his retrospective qualitative study of 55 clinical records of the Breath Odour Clinic in Thunder Bay Ontario Canada, MacKeown (2003)[24] analyzed the breath odour and psychological history documentation that had been collected during the consultation and interview process. The main findings did indicate that once a bad breath problem is experienced, or thought to exist, an individual's self-confidence, self and body image is eroded. This leads to insecurity in social situations.[23] This was further emphasized by a recent study that stated halitosis is a frustrating condition that can lead to significant discomforts, negative social and psychological effects including social interaction suppression and self-confidence diminution.[25]

Overall, while respondents in the current study demonstrated excellent knowledge and correct perceptions in many respects, unacceptably low figures attended others - reflecting serious lack of perception in some areas about halitosis.

Conclusion

The knowledge and attitude of clinical students towards halitosis was good but their practice towards halitosis was not so encouraging and as such, there is need for more dental education towards routine oral health practices so that the clinical students can be an effective role model to the general populace.

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