Perception on halitosis among dental patients attending Muhimbili National Hospital dental clinic

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Abstract
The aim was to investigate the perception on halitosis among dental patients attending Muhimbili National Hospital (MNH) dental clinic. A total of 200 patients aged 18^{+} years of whom 41.5% were males and 58.5% were females were randomly selected. A pre-structured questionnaire in Kiswahili language was administered to the respondents. The Chi-square and the student's t-tests were used to compare different subgroups. While 52% of the respondents had primary education, 36% had secondary education. About two thirds of the respondents came from Kinondoni district (64.5%). Of the 200 study respondents, 55.5% assessed themselves to have good sense of smell. Self-perception of halitosis was reported in 44% of the respondents. Sixty six percent (66%) of the respondents reported that halitosis was a problem in the society around them. Almost half of the respondents (49%) perceived that halitosis was equally distributed between men and women. Most of the respondents (92.5%) reported that there is a need to give oral health education on halitosis to the society. In conclusion, the study indicated that, some dental patients attending MNH dental clinic perceived halitosis as an existing problem in their settings and most of respondents recommended public health education on the condition. Further studies on perception and prevalence of halitosis at community level are recommended

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Introduction

Oral health means more than healthy teeth. Some oral health problems can affect self-esteem, ability to eat, how we look, the way we communicate and the way we feel about ourselves. A healthy smile does not only mean healthy teeth, but healthy tissues surrounding the oral cavity and good smell too. Healthy oral cavity not only makes one look and feel good, but also enables him or her to speak confidently. With a healthy and well-cared oral cavity, one will not have to worry about bad breath (halitosis) chasing away one's listeners.

Halitosis is the general term used to describe any disagreeable odour in expired air, regardless of whether the odourous substances originate from oral or non-oral sources (Tangerman, 2002). The condition has been reported to affect large proportions of the populations (Meskin, 1996; Söder et al., 2000; Frexinos et al., 1998; Löesche, 1999) .Chronic halitosis can be detrimental to one's self image and confidence causing social, emotional and psychological anxiety to those suffering from it (Hine, 1957, Lenton et al, 2001).

The origin of halitosis may be oral, systemic and psychological (Yaegaki, 2000). In majority of cases (80 to 90%), halitosis originates within the oral cavity (Butt and Chindia, 2002), where anaerobic bacteria degrade sulphur-containing amino acids to the foul smelling volatile sulphur compounds (VSC), namely hydrogen sulphide and methylmercaptan. An estimated 10 to 20% of halitosis has no-oral causes (Tonzetich, 1977; Durham et al., 1993).

The cleanest human mouth harbours millions of potentially pathogenic bacteria, and given the right set of circumstances, these bacteria may decompose food particles left in the mouth. Halitosis of oral origin in associated with poor oral hygiene, dental plaque, dental caries, gingivitis, stomatitis, periodontitis, tongue coating, and oral carcinoma (Attia and Marshall, 1982). Dry mouth (xerostomia) might also promote halitosis of the oral cavity origin (Lu, 1982; Durham et al., 1993; McDowell JD and Kassebaum, 1993). In healthy subjects, tongue coating is by far the most important source of oral based halitosis. Most of the odour comes from the dorso-posterior surface of the tongue where the crypts are favoured sites for growth of the anaerobic bacteria responsible for halitosis (Yaegaki and Sanada, 1992; Rosenberg, 1996). A dry mouth enables dead cells to accumulate on the tongue, gums, and cheeks. These cells

decompose and cause mouth to smell bad. Smoking of cigarette and use of other tobacco products tend to dry out the mouth more often, causing the mouth halitosis. Cavities in carious teeth may be a source of halitosis while unclean dentures of any kind can cause bad breath by absorbing the odour themselves and/or by helping to retain food particles.

Systemic pathological states that may be associated with halitosis may emanate from the ears, nose, throat, gastrointestinal tract, bronchopulmonary, liver and psychiatric conditions. A high percentage of patients who come to the clinic with a primary complaint of halitosis do not have detectable problem. This has been referred to as psychogenic halitosis. In Japan 80% of patient who visited a halitosis clinic claimed to been self conscious of the condition, but only 24% actually had halitosis (Iwakura et al., 1994).

Public oral health programme usually focus on the prevention of two major diseases, dental caries and periodontal diseases. However, in Japan, it has been realized that the measures taken to control halitosis may lead to prevention of dental caries and periodontal diseases (Saito and Kawaguchi, 2002). The improvement in social life style has increased awareness among people seeking a solution to this problem. It has been reported that 41% of US dentists see six or more patient a week with halitosis (Loesche, 1999). Bad breath is democratic as it affects male and female, the rich and the poor, the young and the old of all races. It tends to get worse and more frequent as one gets older.

It is generally agreed that, halitosis is a social stigma. Even in close relationship, people are often reluctant to inform others their breath is offensive. Although it may be assumed that halitosis (bad breath) is not a common problem in the Tanzanian society, the scope of the problem has not been investigated. The aim of this study is to investigate the perception of halitosis among dental patients aged 18^{+} years attending Muhimbili National Hospital Dental Clinic.

SUBJECTS AND METHODS

Subject

The study was conducted at the School of Dentistry involving 200 randomly selected dental patients attending Muhimbili National Hospital dental clinic of whom 41.5% were males and 58.5% were females. Inclusion criteria for the respondents were age at the time of study (18^{+} years), only African Tanzanian origin, and willingness to participate in the study. A verbal consent was obtained from the respondents. Distribution of the respondents is presented in table 1.

Table 1: Number of respondents according to age and gender

Age (years)	Males		Females		Total	
	n	%	n	%	n	%
18-27	38	19	54	27	92	46
28-37	24	12	45	22.5	69	34.5
38-48	8	4	13	6.5	21	10.5
48-70	13	6.5	5	2.5	18	9
Total	83	41.5	117	58.5	200	100

Methods

A pre- structured questionnaire in Kiswahili language was administered to all 200-respondents who were randomly selected and accepted to participate in the study. The questionnaire consisted of 20 items and was divided into two sections. The first section of the questionnaire was referring to the demographic characteristics of the respondents with particular attention to age, gender, education and employment status. The second section was dealing with respondents' perception of halitosis.

Data processing and analysis were carried out using Epi Info 2000. Descriptive statistics were analyzed. The Chi-square and the student's t-tests were used to compare different subgroups. The significant level (p-value) was set at 0.05.

Results

Table 2 shows the demographic characteristics of the respondents. More than half of the respondents had a primary education level (52%) and only 7.5% had a higher level of education. Except for the unemployed/housewives category

of respondents where more women than men were unemployed/housewives, the demographic characteristics of males and females were generally similar. Almost two thirds of the respondents 64(32%) were self-employed and few (8%) were peasants. Also about two thirds of the respondents (64.5%) reported to come from Kinondoni Municipal.

Table 3 shows the frequencies of the responses to questions on perception of halitosis. The proportion of respondents who judged themselves to have good sense of smell was 55.5%. Forty four percent (44%) of the respondents were sometimes sensing bad breath from their own mouth. While for about one third of the respondents (34%), it was common to sense bad breath from their colleagues' mouths, 30.5% had a close colleague with bad breath problem.

Table 2: Demographic characteristics of respondents

	Male		Female		Total	
	n	%	n	%	n	%
Education Level						
No formal education	4	44.4	5	55.6	9	4.5
Primary education	35	33.7	69	66.3	104	52
Secondary education	34	47.2	38	52.8	72	36
Higher education	11	73.3	4	26.7	15	7.5
Occupation						
Employed	23	53.5	20	46.5	43	21.5
Self employed	39	60.9	25	39.1	64	32
Unemployed/Housewife	3	5.5	51	94.5	54	27
Peasant	7	43.8	9	56.2	16	8
Student	11	47.8	12	52.2	23	11.5
Residence in Dar es Salaam						
Ilala	17	50	17	50	34	17
Kinondoni	52	40.3	77	59.7	129	64.5
Temeke	16	43.2	21	56.8	37	18.5

Majority of the respondents (89.5%) reported to know the cause of halitosis. Almost all respondents (97%) reported to know how to help a friend with a bad breath problem. Two thirds of the respondents (66%) perceived that bad breath is a problem in our society.

About half of the respondents (49%) perceived that bad breath problem was equally distributed between males and females. On the other hand, 12.5% of the respondents perceived that more males were affected while 12% perceived that more females were affected. Most of the respondents (92.5%) thought that there is a need of providing oral health education on bad breath (halitosis) to the Tanzanian community.

Table 4 shows the perception of the respondents on age group, which is commonly affected by halitosis. Majority of the respondents perceived that age group which is commonly affected by halitosis is 18-35 years. Forty-five of the respondents (45%) didn't know which age group is commonly affected by halitosis.

Table 3: Frequencies of responses to questions on perception on halitosis

Statement	Yes (%)	No (%)
Having good sense of smell	55.5	44.5
Common to sense halitosis from colleagues	34.0	66.0
Self-perception of halitosis	44.0	56.0
Having a close colleague with halitosis problem	30.5	69.5
Knowing the cause of halitosis	89.5	10.5
Knowing how to help a friend with halitosis	97.0	3.0
Halitosis is a problem in our society	66.0	34.0
Halitosis more common among men	12.5	87.5
Halitosis more common among women	12.0	88.0
Halitosis equally distributed among men and women	49.0	51.0
Need of health education on halitosis	92.5	7.5

Discussion

There is no published data from Tanzania on the prevalence or perception of halitosis. Although the present study is a pathfinder type, the results may not be generalized to the general Tanzanian population because of the selective nature of the study sample. The respondents in our study may have been more conscious about oral health conditions including halitosis. However, the study has shed some light on the perception of halitosis among dental patients in Tanzanian urban hospital settings.

There were many study subjects from Kinondoni Municipal than other Ilala and Temeke Municipalities. This situation could be attributed to the close proximity of MNH dental clinic to Kinondoni Municipal. Majority of the patients from Ilala and Temeke Municipalities may prefer to seek oral health care from their respective Municipal dental clinics due to the distance factor.

Table 4: Respondents' perception on the age group commonly affected by halitosis.

Age (years)	Frequency	Percentage
0-18	25	12.5
18-35	50	25.0
35+	35	17.5
Don't know	90	45.0
Total	200	100.0

The proportion of respondents who judged themselves to have bad breath was comparable to the Japanese report (Saito and Kawaguchi 2002) whereby 50% or more of the people complained about their own bad breath. On the other hand, it has been reported that in U.S.A (Meskin, 1996) most adults suffer from halitosis occasionally, with an estimation of 10% to 30% of the U.S.A population on regular basis.

In the present study, thirty four percent of the respondents reported to sense bad breath from colleagues, 44% reported self-perception of bad breath and 30.5% having a close friend/colleague with bad breath problem. These results are corresponding to a Saudi Arabian study where 32% to 44% of the dental students reported self-perception of bad breath (Almas wt al., 2003).

The majority of the respondents perceived that bad breath is a problem in the Tanzanian society, had good knowledge on the causes of bad breath and reported to know how to help a friend with a bad breath problem.

Generally, the respondents in the present study perceived that bad breath was equally distributed between men and women. Literature from elsewhere also shows no gender-based differences with regard to prevalence and severity of halitosis (Rosenberg et al., 1991; Iwakura et al., 1994).

Majority of the respondents perceived that the age group that is commonly affected by halitosis is 18-35 years. Probably because most of the respondents were found in this age group; they may have been referring to themselves.

In conclusion, the study indicated that, some dental patients attending MNH dental clinic perceived halitosis as an existing problem in their settings and most of respondents recommended public health education on the condition. Further studies on perception and prevalence of halitosis at community level are recommended.

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On opening of college, the Principal addressed the students pointing out some of the rules: "The girls hostel will be out-of bounds for all male students, and the boys hostel to the female students. Anybody caught braking this rule will be fined TShs. 5,000 the first time". TShs. 10,000 on second time and TShs. 20,000 on third time, is there any question.

At this point, a male student in the crowd inquired:

"How much for a season pass, sir?"