VOLUME 1, ISSUE 1 & 2, DECEMBER, 2016

NJDR

NIGERIAN JOURNAL OF DENTAL RESEARCH

Official Publication of the School of Dentistry, College of Medical Sciences, University of Benin, Benin City, Nigeria

Expressed Feelings, Attitude and Reactions toward Halitosis Sufferers

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ABSTRACT

Objective: To determine the expressed feelings, attitude and reactions toward halitosis sufferers among undergraduates in University of Benin.

Methods: This questionnaire-based cross-sectional study was conducted among undergraduates of University of Benin, Nigeria. Data collected include demographic characteristics, halitosis experience, feeling, attitude and reactions towards halitosis sufferers.

Results: The prevalence of halitosis was 57.3% which is purely based on reaction and information from other people. About three-quarters (73.3%) of the respondents reported that they have met people with halitosis and half (50.0%) of the respondents reported perceivable halitosis from their relatives. The majority (81.3%) of the respondents wish to be informed if they have halitosis. Half (50.0%) of the respondents reported that they would consult a dentist if they have halitosis. Over a third, (41.3%) felt sympathy towards halitosis sufferers while about a quarter (26.7%) expressed anger and sadness. About three-quarters (76.0%) of the respondents would feel unhappy having a classmate/roommate with halitosis. The reported stigmatizing and discrimination reactions on meeting halitosis sufferer in a bus in descending order were putting nose out of the window, changing position, dropping off the bus and closing nose. One-eighth (12.7%) of the respondents were in agreement with expulsion of any student with halitosis. The majority (87.3%) of the respondents reported advising a friend suffering from halitosis to seek urgent solution but 4% of the respondents reported stopping the relationship with the halitosis sufferers.

Conclusion: The dominant non-receptive feelings, negative attitudes, stigmatizing and discriminatory reactions towards halitosis sufferers even in the midst of prevalent halitosis provided the explanatory insight into the adverse social interaction and relationship effects of halitosis

Keywords: Feeling, halitosis, reactions, social contact

Citation: *Isere OD, Azodo CC. Expressed feelings, attitude and reactions toward halitosis sufferers. Nig J Dent Res 2016; 1(1-2):22-27.*

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INTRODUCTION

Definitive first impression which is usually created on physical interaction, is instrumental to the development and sustenance of a relationship. Fresh breath plays a major role in the creation of a good first impression while unpleasant odour consistently emanating from the mouth known as halitosis, adversely influences this first impression and impedes further social interaction potentials.[1] The relational life of halitosis sufferers is usually hampered because halitosis impedes attraction, pleasantry and seduction wishes.[2] Reports stated that the smell from halitosis disconnects a person from their social environment and intimate relationships by creating a social barrier between sufferers and their friends, relatives, partners or colleagues at work.[3,4]

Halitosis is considered as a social malady because a reasonable proportion of the population are reluctant to inform the sufferers about the condition and majority of individuals consider being told of their halitosis as both embarrassing and insulting, and therefore prefer to be uninformed.[5] In-addition, sickening feeling on encounters with halitosis sufferers has been reported by the majority of the individuals studied in different parts of the world.[6] Halitosis sufferers exhibit social anxiety which is the fear of interaction with other people that brings on self-consciousness, feelings of being negatively judged and evaluated, and, as a result, leads to avoidance.[7,8]

The adverse impact of halitosis on human relationship triggers afflicted individual into the use of all forms of agent to prevent and treat halitosis. Halitosis has been cited as one of the oral conditions that sufferers engage commonly in self-medication and this self-medication practice with mouthrinses and chewing gum, temporarily mask the halitosis which in turn delay or prevent dental attendance for the definitive care.[9] The provision

of holistic care to halitosis sufferers will involve the reduction of its social stigmatizing effect, improved readiness to discuss halitosis, reorientation of the public on the aetiology and available remedies for halitosis, and prompt them on ways to convey this sensitive information to the sufferers. The progress will start with understanding the public perception about halitosis which will enhance better understanding of the social dilemma of sufferers and other necessary information. Hence the objective of the study was to determine the expressed feeling, attitude and reactions toward halitosis sufferers among undergraduates in University of Benin, Benin-City, Nigeria.

MATERIALS AND METHODS

This cross-sectional study was carried out among undergraduate students in the University of Benin, Benin City, Nigeria. The data collection tool was a self-administered questionnaire. The questionnaire elicited information on demographic characteristics, encounter with halitosis sufferers, existence of halitosis among relatives, desire to be informed about halitosis if they are suffering from it, the action to be taken if informed to be suffering from halitosis and perceived ways to help halitosis sufferers. Information on feelings, attitude and reactions to halitosis sufferers were also obtained. The questionnaire was face validity by two Periodontologists and pretested on twenty dental students of same university for clarity before the commencement of the study. The questionnaires were hand delivered and collected back in an envelope on completion. Informed consent was obtained from the participants. Participation was voluntary and no incentive was offered. The obtained data was subjected to descriptive statistics using IBM SPSS version 21.0. Test for significance was done using Chi-square or Fisher's statistics where applicable. Statistical significance was set at $P<0.05$

RESULTS

A total of 160 questionnaires were distributed but 150 of them were collected and analyzed giving a 93.8% response rate.

Table 1: Demographic characteristics of the respondents

Characteristics	Frequency (n)	Percent (%)
Age (years)		
≤22	75	50.0
>22	75	50.0
Gender		
Male	92	61.3
Female	58	38.7
Course		
Religion		
Christianity	123	82.0
Non-christianity	27	18.0
Regular religious activity attendance		
More	88	58.7
Less	62	41.3
Total	150	100.0

The age range was 16 to 40 years with a mean age of 23.09±4.13 years. Half 75 (50.0%) of the respondents were above 22 years of age. Males constituted 92 (61.3%) of the respondents while the remaining
58 (38.7%) were females. Over half (58.7%) of the respondents were more regular religious attendees with most of the respondents 123 (82.0%) being Christians (Table 1).

Table 2: Prevalence of halitosis and encounter with halitosis sufferers among the respondents

	Age (years)		Gender		Regularly religious		
	≤22	>22	Male	Female	Less	More	Total
	n(%)	n(%)	n(%)	n(%)	n(%)	n(%)	n(%)
Have you been exposed to somebody with mouth odour							
Yes	54(72.0)	56(74.7)	60(65.2)	50(86.2)	43(69.4)	67(76.1)	110(73.3)
No	21(28.0)	19(25.3)	32(34.8)	8(13.8)	19(30.6)	21(23.9)	40(26.7)
P-value		0.136		0.005		0.355	
Do your relative have mouth odour							
Yes	44(58.7)	31(41.3)	48(52.2)	27(46.6)	31(50.0)	44(50.0)	75(50.0)
No	31(41.3)	44(58.7)	44(47.8)	31(53.4)	31(50.0)	44(50.0)	75(50.0)
P-value		0.034		0.502		1.000	
Have you ever be informed that you have mouth odour by someone							
Yes	46(61.3)	40(53.3)	50(54.3)	36(62.1)	42(67.7)	44(50.0)	86(57.3)
No	29(38.7)	35(46.7)	42(45.7)	22(37.9)	20(32.3)	44(50.0)	64(42.7)
P-value		0.322		0.352		0.031	
Have you ever suspected that you have mouth odour due to action of others							
Yes	46(61.3)	40(53.3)	53(57.6)	33(56.9)	38(61.3)	48(54.5)	86(57.3)
No	29(38.7)	35(46.7)	39(42.4)	25(43.1)	24(38.7)	40(45.5)	64(42.7)
P-value		0.322		0.625		0.411	

Table 3: Respondents' desire to be informed of halitosis and their preferred action to tackle the condition

	Age (years)		Gender		Regularly religious		
	≤ 22	>22	Male	Female	Less	More	Total
	n(%)	n(%)	n(%)	n(%)	n(%)	n(%)	n(%)
Would you like to be told if you have mouth odour							
Yes	60(80.0)	62(82.7)	76(82.6)	46(79.3)	50(80.6)	72(81.8)	122(81.3)
No	15(20.0)	13(17.3)	16(17.4)	12(20.7)	12(19.4)	16(18.2)	28(18.7)
P-value		0.675		0.614		0.856	
What will you do							
Consult the dentist	40(53.3)	35(46.7)	44(47.8)	31(53.4)	26(41.9)	49(55.7)	75(50.0)
Use chewing gums/sweet	4(5.3)	8(10.7)	6(6.5)	6(10.3)	8(12.9)	4(4.5)	12(8.0)
Use toothpaste	11(14.7)	9(12.0)	15(16.3)	5(8.6)	5(8.1)	15(17.0)	20(13.3)
Use mouth wash	1**3(17.3)**	**14(18.7)**	17(18.5)	10(17.2)	13(21.0)	14(15.9)	27(18.0)
Use herbal medicine	7(9.3)	9(12.0)	10(10.9)	6(10.3)	10(16.1)	6(6.8)	16(10.7)
P-value		0.723		0.647		0.038	

Table 4: Expressed feeli gs and attitudes towards halitosis sufferers among the respondents

	Age (years)		Gender		Regularly religious		
	≤ 22	>22	Male	Female	Less	More	Total
	n(%)	n(%)	n(%)	n(%)	n(%)	n(%)	n(%)
How do you perceive person with mouth odour generally							
Very disgusting	33(44.0)	45(60.0)	50(54.3)	28(48.3)	30(48.4)	48(54.5)	78(52.0)
Slightly disgusting	39(52.0)	28(37.3)	38(41.3)	29(50.0)	31(50.0)	36(40.9)	67(44.7)
Not disgusting at all	3(4.0)	2(2.7)	4(4.3)	1(1.7)	1(1.6)	4(4.5)	5(3.3)
P-value		0.143		0.454		0.396	
How would you feel towards someone with mouth odour							
Sympathetic	30(40.0)	32(42.7)	46(50.0)	16(27.6)	27(43.5)	35(39.8)	62(41.3)
Indifferent	24(32.0	24(32.0)	26(28.3)	22(37.9)	15(24.2)	33(37.5)	48(32.0)
Sad	8(10.7)	8(10.7)	7(7.6)	9(15.5)	9(14.5)	7(8.0)	16(10.7)
Angry	13(17.3)	11(14.7)	13(14.1)	11(19.0)	11(17.7)	13(14.8)	24(16.0)
P-value		0.972		0.047		0.283	
How would you feel if you have a classmate/roomate with mouth odour							
Very happy	3(4.0)	1(1.3)	3(3.3)	1(1.7)	2(3.2)	2(2.3)	4(2.7)
Slightly happy	7(9.3)	3(4.0)	7(7.6)	3(5.2)	4(6.5)	6(6.8)	10(6.7)
Not happy not unhappy	8(10.7)	14(18.7)	17(18.5)	5(8.6)	8(12.9)	14(15.9)	22(14.7)
Slightly unhappy	54(72.0)	56(74.7)	63(68.5)	47(81.0)	46(74.2)	64(72.7)	110(73.3)
Very unhappy	3(4.0)	1(1.3)	2(2.2)	2(3.4)	2(3.2)	2(2.3)	4(2.7)
P-value		0.294		0.400		0.982	
Students with mouth odour should be expelled from the university							
Strongly agree	10(13.3)	6(8.0)	10(10.9)	6(10.3)	6(9.7)	10(11.4)	16(10.7)
Agree	1(1.3)	2(2.7)	1(1.1)	2(3.4)	3(4.8)	0(0.0)	3(2.0)
Disagree	49(65.3)	40(53.3)	55(59.8)	34(58.6)	35(56.5)	54(61.4)	89(59.3)
Strongly disagree	15(20.0)	27(36.0)	26(28.3)	16(27.6)	18(29.0)	24(27.3)	42(28.0)
P-value		0.105		0.838		0.255	

About three-quarters 110 (73.3%) of the respondents reported that they have met halitosis a sufferer. Gender was found to be significant associated with encounter with halitosis sufferers (P=0.005). In this study, half of the respondents reported perceivable halitosis from their relatives. A total of 86 (57.3%) of the respondents reported that they have been told they have halitosis at one time or the other. The regularity of religious attendance was significantly associated with being informed of having halitosis (P=0.031). More than half 86 (57.3%) of the respondents had ever suspected that they have halitosis due to action of others (Table 2). The majority 122 (81.3%) of the respondents wished to be informed if they suffer from halitosis. The preferred action on being informed about halitosis is to consult the dentist. Other actions taken in descending order include the use of mouth washes (18.0%), toothpaste (13.3%), herbal medicine (10.7%), and chewing gums and licking sweets to mask odour of halitosis (8.0%). The regularity of religious attendance was significantly associated with preferred action on information of halitosis (P=0.038) (Table 3). More than half (52.0%) of the respondents felt very disgusted generally on perception of halitosis from someone. Over a third (41.3%) felt sympathetic towards halitosis sufferers followed by indifferent 48 (32%), sad 18 (12%) and angry 24 (16%). More than two-thirds (76.0%) of the respondent felt unhappy [very unhappy (2.7%) and slightly unhappy (73.3%)] on having classmate/roommate with halitosis. One-eighth of the respondents were in agreement [strongly agree 2.0%, agree 10.7%)] with expulsion of student with halitosis (Table 4). The stigmatizing and discrimination behaviours reported in descending order are "put my nose out of the window", "change position", "drop off the bus" and "close my nose". The majority (87.3%) of the respondents reported advising a friend suffering from halitosis to seek urgent solution. Only one in every 25 respondents reported stopping the relationship with a friend suffering with halitosis. There was no significant association between age (P=0.553), gender (P=0.424) and regular religious attendance (P=0.930) (Table 5).

Table 5: Reactions towards halitosis sufferers among the respondents

	Age (years)		Gender		Regularly religious		
	≤ 22	> 22	Male	Female	Less	More	Total
	n(%)	n(%)	n(%)	n(%)	n(%)	n(%)	n(%)
What will you do if someone with mouth odour sit next to you in a bus							
Do nothing	30(40.0)	26(34.7)	32(34.8)	24(41.4)	20(32.3)	36(40.9)	56(37.3)
Change position	6(8.0)	10(13.3)	11(12.0)	5(8.6)	11(17.7)	5(5.7)	16(10.7)
Close nose	4(5.3)	0(0.0)	4(4.3)	0(0.0)	2(3.2)	2(2.3)	4(2.7)
Put nose out of the window	15(20.0)	23(30.7)	23(25.0)	15(25.9)	16(25.8)	22(25.0)	38(25.3)
Drop from the bus	9(12.0)	4(5.3)	6(6.5)	7(12.1)	3(4.8)	10(11.4)	13(8.7)
Tell the person to go clean up	6(8.0)	8(10.7)	9(9.8)	5(8.6)	4(6.5)	10(11.4)	14(9.3)
Tell the person to seek urg	5(6.7)	4(5.3)	7(7.6)	2(3.4)	6(9.7)	3(3.4)	9(6.0)
P-value		0.167		0.530		0.089	
What will you do if you perceive mouth odour from a friend							
Advice the person to seek urg	65(86.7)	66(88.0)	79(85.9)	52(89.7)	54(87.1)	77(87.5)	131(87.3)
Maintain my relationship	8(10.7)	5(6.7)	10(10.9)	3(5.2)	5(8.1)	8(9.1)	13(8.7)
Stop relating with the person	2(2.7)	4(5.3)	3(3.3)	3(5.2)	3(4.8)	3(3.4)	6(4.0)
P-value		0.553		0.424		0.930	

urg=urgent solution

DISCUSSION

Halitosis is common and universal condition that affects any individual irrespective of age, sex, ethnicity and socioeconomic status. The prevalence of halitosis confirmed based by being informed by other people or their reactions was high. This may be related to the high level of stressors in the university community. Volatile sulfur compound production which is the major gas emitted in halitosis, has been reported to be increased in stressful situations.[10,11] Less regular religious attendees (67.7%) were significantly more likely to have experienced halitosis than the more regular religious attendees (50.0%) based by being informed by other people. This may be due to the fact that religiosity has been reported to offer a protective effect against periodontal disease and dental caries which are major causes of halitosis.[12,13]

Genuine halitosis sufferers are usually unaware and need to be informed of the halitosis to trigger behavioural reactions. The fact that high level of

interaction that goes on in the University community which is relevant for success may be impeded by unawareness of the existence of halitosis may explain why a large proportion (81.3%) of the respondents expressed the wish to be informed if they have halitosis. The burden of having relatives with perceivable halitosis in this study may have also resulted in increased desire of the respondents to be informed of halitosis if they are suffering from it. This is similar to 88% of undergraduate dental hygiene students in Japan who wished to know whether they had oral malodour or not[6] and 83.1% of individual that attended an oral health education programme would like to be told if their breath smells foul and were of the opinion that such information was helpful.[14]

The preferred action of the respondents on notification of unpleasant mouth odour is to seek dentist attention. However, the proportion of the respondents that sought out for mouthwash, toothpaste and herbal medicine was still found to be high. One in approximately every thirteen (8.0%) respondents would chew gums and lick sweets to mask odour of halitosis. This represent a call for concern as this behaviour may lead to dental caries and consequent worsening of the halitosis by a positive feedback mechanism. There is a need to increase awareness and reorientate the public about the aetiology and available treatment options for halitosis. Although religiosity was not found to significantly influence dental check-up, it was generally associated with healthy behaviour.[15] However in this study, less regular religious attendees in comparison with the more regular religious attendees were significantly less likely to consult a dentist and more likely to use chew gum and lick sweets to mask the odour of halitosis.

A reasonable proportion (96.7%) of the respondents felt disgusted on perception of halitosis from someone. The fact that respondents thought that they have escaped the offensive odour of their relatives only to be exposed to such may have triggered the negative attitudes and reactions because the human sense of smell which is a primary factor in the sensation of comfort evokes memory of past exposures to such odours.[16] The irritating and nuisance nature of their odour memories will adversely influence interpersonal relationships thereby reflecting the diminutive social situations and social relations among halitosis sufferers.

Halitosis is an age-old troublesome social malady which can lead to a significant amount of social disharmony and embarrassment. The destruction of communication and the pleasures of social contact by offensive odour of halitosis explains why over two-third of the respondents reported unhappiness if they have a classmate or roommate with halitosis. One-eighth of the respondents agreed to the expulsion of students with halitosis which is an extreme unfriendly and non-receptive tendencies. This may help explain the social and personal isolation of halitosis sufferer and the consequent halting of career aspiration and progression.[1,17]

Although, a substantive proportion of the respondents felt sympathetic towards people with halitosis, one quarter (26.0%) of them expressed anger and sadness towards halitosis sufferers. The stigmatizing and discrimination reactions toward halitosis sufferers in a bus reported by the respondents depicted by reducing exposure the offensive odour nature of halitosis by "closing nose" or "putting nose out of the window" and maintaining a social distance by "changing position" or "dropping off the bus". This reactions may be related to the fact that laypersons view halitosis as a cosmetic problem which is usually caused by declined cleanliness. Hygiene which reflects sanitary attributes and lowered likelihood to habour disease, is one of distinct criteria for attractiveness because caring for oneself shows self-reliance, responsibility, and measures of self-respect. These reactions confirm interactional difficulty tendencies among halitosis sufferers because consistent communication which leads to relationship development and improvement, will occur between individuals that are happy at each other's company. de Jongh et al.[18] cited halitosis as one of the most unattractive aspects of social interactions which exerts potentially damaging effects on psychosocial interactions and relationships.

The effects of halitosis extends beyond the afflicted individual, as it is a source of embarrassment for relatives and friends of the halitosis sufferers and also constitutes a constant source of unhappiness to the sufferers, relatives and friends. This may be the reason why the majority of the respondents reported advising a friend suffering from halitosis to seek urgent solution. The potential readiness to inform halitosis sufferers may facilitate their seeking an adequate treatment for this socially offensive condition. However, one in every 25 respondents reported stopping the relationship with a friend suffering with halitosis. The expressed feeling, attitudes and reactions toward halitosis sufferers in this study provided the explanatory insight into the adverse social interaction and relationship

effects of halitosis. The uneasy feeling about one's oral malodour, and expressed feeling and reactions of people toward halitosis sufferers result in work and social life interference.[6,19,20]

CONCLUSION

The dominant non-receptive feelings, negative attitudes, stigmatizing and discriminatory reactions towards halitosis sufferer even in the midst of prevalent halitosis confirm the social handicapping characteristics of halitosis.

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