

Halitosis and its Psychosocial Effects Among Patients Reporting at Dental out Patients Department: A Neglected Oral Health Issue in Pakistan

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ABSTRACT

Objective: To assess the burden of halitosis among dental patients and to explore the psychosocial factors associated with halitosis at Liaquat University Hospital, Hyderabad.

Study Design: Cross sectional study

Study Setting & Duration: was conducted at Dental OPD of Liaquat University Hospital Hyderabad from March to August 2017. Patients presented with halitosis at Dental OPD of Liaquat University Hospital Hyderabad via convenient sampling technique were selected within duration of six months.

Methodology: A group of 239 subjects were included in this study and the simple convenient sampling technique was used to obtain data for the research. Written consent form was taken from each subject.

Results: Among 239 participants, 115 were male and 124 were female. 81.59% of patients reported experience of bad breath. 62.50% of individuals claimed that having bad breath had made them less social, 65% of respondents said they feared social interaction and public events.

Conclusion: The most of participants of the study had halitosis, whether it was real or imagined, and it had an effect on the patients' social and marital lives and produces psychiatric symptoms such as stress, lack of confidence, isolation and avoidance of gathering.

Keywords: Halitosis, Socialization, Emotional distress, Self-confidence

INTRODUCTION

Halitosis, sometimes known as "foul breath," is an unpleasant odour that emanates from the mouth. It may have a detrimental impact on a person's self-esteem, self-confidence, and ability to work. Because of the ensuing psychological worry and psychological pain, social isolation and its related problems result.¹ Halitosis, also known as bad breath in layman's terms, is characterised by an offensive odour coming from the mouth. This can have a negative impact on a person's self-esteem and confidence, which in turn causes emotional trauma and psychological stress, and eventually social isolation with all of its associated problems.^{2,3}

The term "halitosis," which was first used by the Listerine Company in 1921, refers to bad breath that is brought on by both non-oral and oral influences.⁴ In the company of other people who aren't impacted by halitosis, those who have it may feel uneasy and ashamed and may steer clear of social situations and close relationships.⁵ Halitosis is a prevalent issue for both men and women that generally affects both oral health condition and quality of life.⁶

In accordance with the American Dental Association, 25% of people have chronic odor issues, which may be caused by various external factors like smoking, drinking, poor diet, demographic and social alterations, and alcohol usage. 50% of people experience occasional foul breath disorders.⁷

The two most common oral causes of halitosis are defined as tongue coating and periodontal disorders. Several other gases could be identified by your nose, including methyl mercaptan and hydrogen sulphide.⁸

Islam also emphasizes good dental hygiene and having fresh breath. There are still several traditional medicines from long ago that treat halitosis.⁹

It is discovered that oral bad breath is a long-standing issue that affects people of all sexes equally. All age categories are affected, and the occurrence of halitosis in the overall population ranges from 8 to 50%. 10 One-third of the population suffers from moderate persistent halitosis on a regular basis, and the remaining people experience it at least occasionally.¹⁰

According to a study on 911 Chinese patients, 77% of them reported having halitosis, which had a negative effect on their ability to communicate with people in social situations.

Halitosis was discovered to be statistically related to coating of the tongue (P 0.05). Out of all (50.3%) of the individuals in a cross-sectional study indicated concerned regarding bad breath, had inaccurate understanding about teeth brushing, and claimed happiness with their dental looks, but they continued to worry about the colour of their gingival.^{11,12} According to reports, the proportion of observed bad breath is 14% in the Middle East, in Europe 23.3% and in 61.1% of the Thai patients.¹³

The purpose of this research was to evaluate how persons with poor breath are seen in society, the state of oral health, how halitosis affects people's social lives, and the psychological repercussions that are brought on by it.

This investigation is expected to serve as a starting point for further research into this underserved and untapped sector in our nation and offer up new research opportunities for others. Therefore, it was crucial to do out research in Pakistan to look at this under-researched region and its associated issue.

METHODOLOGY

Place: It was carried out at Department of Oral Diagnosis and Out Patients Department Dental (OPD) Liaquat University Hospital Hyderabad

Duration: Six months

Sample Size: Total sample size calculated for this study was 239, this is in view of previous study where halitosis prevalence was found to be 17.5%.⁵

The prevalence of Halitosis is 17%⁵ keeping this value as a reference value. The sample size is

calculated by using the following equation.

$N = t^2 \times P (1-P)$

e^2

$n =$ sample size

$t =$ critical value at 95% confidence interval

$p =$ prevalence of Halitosis; 0.17

$q = 1-P$

e = Margin of error; 0.05
 Putting the value together
 $n = 1.96 \times 1.96 \times 0.17(1-0.17)$
 0.05×0.05
 $n = 3.84 \times 0.17 \times 0.83$
 0.0025
 $n = 3.84 \times 0.1411$
 0.0025
 $n = 0.541824 = 216.72$
 0.0025
 10% non represents = 21.67
 $n = 216.72 + 21.67 = 238.39$
 Sample size of study: n= 239

Inclusion criteria:

> All patients attending dental OPD

Exclusion criteria:

> Teaching faculty
 > Students
 > Paramedical staff

Data Collection Procedure: Data was obtained using a proforma where all the relevant information was gathered and then processed by the principal investigator. The study is cross-sectional in design and patients who fulfilled the requirements of inclusion criteria were chosen. Separated from socio-segment factors, patients' level of familiarity with and expediency concerning halitosis were recorded on a pre-validated questionnaire. Focus on people fuses, patients visiting above 18 years of age, and individuals who didn't consent were blocked from the review.

Data Analysis: Patient's data was compiled and analyzed through SPSS Version 20. Frequency and percentage will be figured out for variables i.e. gender. $P \leq 0.05$ will be considered as significant.

RESULTS

The results showed that an age group of 18-53 years old was observed; the mean age of patients was 30 years, with a standard deviation of ± 6.65 . The highest numbers of cases were reported in the age group of 28–32 years of age. One hundred fifteen (48.12%) patients were males and one hundred twenty-four (51.88%) patients were females. Most of the males were married (77, or 32.21%), while 38, or 15.89%, were unmarried. Out of 124 females, 72(30.12%) were married, forty-two (17.57%) were unmarried, five (2.09%) were divorced, no one was divorced due to halitosis, and five (2.09%) were widowed. 39 (16.32%) respondents were professionals, 55(23.01%) were skilled workers, 97(40.59%) were unskilled, and 48(20.08%) were unemployed. All these findings are mentioned in table 1.

Table No. 2 demonstrates that whereas 19 (7.95%) individuals never avoided speaking, smiling, or laughing owing to poor breath, 28 (11.72%) people did so often, 105 (43.93%) frequently, and 87 (36.40%) rarely. 195 individuals (81.59%) reported having unpleasant breath, compared to 44 (18.41%) who had never experienced it.

92 (38.549%) participants reported having their mouths reprimanded for having terrible breath, whereas 147 (61.51%) reported not having their mouths reprimanded at all. While 130 respondents (54.39%) said they did not always have terrible breath, 109 responders (45.61%) claimed they did. 172 (71.975%) respondents answered that foul breath had no impact on their confidence, whereas 67 (28.03%) claimed it did. Most of the subjects' 156 (65.27%) said that they feel afraid to socialize and attend public gatherings because of their bad breath, while 83(34.73%) do not bother to become afraid of attending public gatherings. 143 (59.83%) respondents said that bad breath was an issue of concern for society, while 96(40.17%) said it was not a concern for society.

Table 3 shows that 42 (17.57%) respondents preferred to smoke cigarettes, 18 (7.5%) chewed Chalia, and 12 (5%) Ghutka. A majority of participants (59.55%) did not prefer to use smoking and smokeless tobacco.

Table 4 shows that 96 (40.17%) respondents had poor oral hygiene, 33 (13.81%) had tongue coating, 45 (18.83%) had gingivitis, 65 (27.19%) had periodontitis, and

According to Table No. 5, halitosis afflicted 99 (86.09%) men and 96 (77.42%) females, although there was no correlation between the two.

Table 1: Demographic Information of Respondents

Profile	Attributes	Frequencies (%)
Age	18-22 years	22 (9.21)
	23-27 years	51 (21.34)
	28-32 years	62 (25.94)
	33-37 years	43 (17.99)
	38-42 years	25 (10.46)
	43-47 years	21 (8.79)
	48-52 years	10 (4.18)
	53 and above	5 (2.09)
Gender	Male	115 (48.12)
	Female	124 (51.88)
Marital Status	Married Male	77 (32.12)
	Un married Male	38 (15.89)
	Married Female	72 (30.25)
	Un married Female	42 (17.56)
	Divorce	5 (2.09)
	Widow	5 (2.09)
Occupation	Professional	39 (16.32)
	Skilled worker	55 (23.01)
	Un skilled worker	97 (40.59)
	Un employed	48 (20.08)

Table 2: Perceptions about Halitosis

Perception	Frequency	Percentage (%)
Participants avoided Conversation, Smiling or Laughing Very often		
	Often	28 11.72
	Occasionally	105 43.93
	Never	87 36.40
Experience Of Bad Breath	Yes=195	81.59
	No=44	18.41
Received Any Negative Comments As Result of Bad Breath	Yes=92	38.49
	No=147	61.51
Presence of Bad Breath	Yes=109	45.61
	No=130	54.39
Respondents Of Bad Breath Affecting Self Confidence	Yes=67	28.03
	No=172	71.97
Respondents afraid of Socializing & attending Public Gatherings	Yes=156	65.27
	No=83	34.73
Concern of society	Yes=143	59.83
	No=96	40.17

Table 3: Preference of Smoke and Smokeless Tobacco

Smoke and Smokeless tobacco habits	Frequency	Percentage
Smoking (cigarette)	42	17.57
Ghutka	12	5.02
Pan	05	2.09
Chalia	18	7.53
Naswar	23	9.62
None	139	58.16

Table 4: Oral Health Issues which Related to Halitosis

Oral Health Issue	Frequency	Percentage (%)
Gingivitis	45	18.83
Periodontitis	65	27.19
Bad oral hygiene	96	40.17
Tongue coating	33	13.81

Table 5: Association of Gender with Halitosis

Gender	Halitosis	Total	p-value
Male	Yes=99 (86.09%)	115	0.084
	No=16 (13.91%)		
Female	Yes=96 (77.42%)	124	
	No=28 (22.58%)		

DISCUSSION

In this study, there were more female cases with halitosis (51.2%) compared to males (48.8%). According to another study, women are more concerned about halitosis than men are. Females had demonstrated greater concern for halitosis and dental hygiene appearance.¹⁸ The participants in this study with halitosis were 30 years old on average. Likewise, in another analysis, subjective halitosis was associated with age 30 and older.¹³

Total 66.2% of halitosis patients were married, whereas 30.8% of halitosis patients were unmarried. In terms of occupation, most halitosis patients were unskilled workers, 23.33% were skilled workers, 20.42% were unemployed, and only 16.25% of patients were professional. A study done in Brazil has also revealed that halitosis can affect both sexes. Most of the individuals were illiterate and unskilled, and only a few of them were professionals.¹⁴

Twenty three percent prevalence of halitosis was reported in females gender, those who had educated at high school level and had found strong association with use of tooth brushing less than once daily.¹⁵ In eleven percent of patients of different ages and cultures of populations halitosis had been felt at some time in their lives.¹⁶

One hundred seventy-three (173) patients responded that people had acted as if bad breath was offensive to them. Sixty-two percent (62.%) of patients' social lives had been affected due to bad breath, and about eighty percent (80%) said that bad breath damages one's social life, and 44.2% of patients responded that they often avoided conversation. Furthermore, 65% of respondents said they shied away from social situations and large groups. However, according to a different study, halitosis has a detrimental effect on social interaction, causing people to avoid standing close to others, feel uneasy when someone is close to them, and hesitate while speaking to them. 22 Halitosis has an adverse effect on interpersonal relationships, family interactions, and career communications. In the presence of unaffected people, 24 people with halitosis might avoid social interactions and close relationships.⁵

In this study, 63.8% of the participants said that their bad breath caused stress. A patient's self-image is harmed by an unpleasant odour, which also produces emotional trauma and psychological anxiety.³ Halitosis has been linked to social anxiety and depression onset.¹⁷

One hundred forty-nine participants (61%) said that having foul breath made them feel less confident, and ninety-one individuals (37.9%) said that their confidence was unaffected. Another study conducted in Saudi Arabia has confirmed that having foul breath leads to social isolation and a lack of self-confidence.¹⁸

A total of 135 patients One hundred thirty-five (56%) responded that bad breath makes one do underperformance at work, and one hundred fifty-four (43.8%) patients said that performance is not affected due to bad breath. One hundred forty-three (59.6%) responded that bad breath is an issue of concern for our society, but ninety-seven ninety-seven (40%) said it is not an issue of concern for our society.

Eleven percent of cases reported that their significant others were concerned about their halitosis. Eighty-one percent of them said that someone had previously told them they had foul breath. Similar to this, 15.4% of participants in a different study stated that they discovered they had halitosis from other people.¹⁹⁻²¹

Six percent of patients were diagnosed with nephritic diseases, two with respiratory diseases, two with gastrointestinal issues, and eighty-nine percent said they had no systemic diseases. Additionally, there is a strong correlation between halitosis, chronic sinusitis, and gastrointestinal problems.¹⁴ Additional reasons includes cirrhosis of the liver, type 2 diabetes, tonsillitis, reflux esophagitis, pharyngitis, rhinitis, bronchiectasis and abscess of the lungs.^{22,23}

Patients who had poor breath had sought for guidance or treatment made up 58% of the total. In order to maintain oral

hygiene, 92.9% of patients employed adequate brushing techniques, 2.5% cleansed their tongues, and 4.6% used mouthwash. In another study, 19.6% of patients visited the dentist once a year, 17.5% visited every six months, but 62.9% did not visit the dentist. More women than men report having foul breath and seeking medical treatment for it.²⁴

This study's findings about the occurrence of halitosis are consistent with other studies' findings, as the incidence of conscious halitosis in the United States was 31%. In France, it was 32% for people over the age of fifteen. In Switzerland, it was 32% amongst 419 individuals, ranging in age from 18 to 94. Second, Swiss research of 626 army recruits between the ages of 18 and 25 discovered an incidence of self-reported halitosis of 21.4%.¹⁷ In Japan, a similar study of 474 college students in 2010 found that 42% of them said they had bad breath.²⁵

In a study done in Sri Lanka, it was discovered that there was a substantial correlation between self-reported halitosis and having a mother with less education. Of the participants, 19.1% had mothers with education levels below basic. Poorer oral health issues are substantially correlated with the mother's educational level. Teenagers who have worse oral health issues, such as more cavities and periodontal disorders, are more likely to have bad breath.²⁶

Additionally, it has been proposed that the reported oral hygiene practices may not be the sole cause of the formation of oral health issues in adolescents. 37.2% of the students said they never smoked and had halitosis when it came to smoking. Unsurprisingly, despite the fact that it is known that the smell of a cigarette may be mistaken for halitosis and also that tobacco consumption weakens oral health conditions, particularly periodontal conditions, which are linked to halitosis, no association between halitosis and smoking was found in this study. Another significant observation is that 34% of the sample reports having halitosis while not having any systemic illnesses. This demonstrates that halitosis is mostly an oral issue. Participants with lower oral health status and behaviors, as well as those undergoing orthodontic treatment due to the difficulties in completing oral hygiene, should be anticipated to have halitosis at a higher rate.

In contrast, this study discovered that 10.7% of the sample had at some point in their lives been told they had poor breath. It discovered a statistically significant link between halitosis and dental floss use as well as teeth brushing frequency. Of the participants, 4.8% stated they cleaned their teeth three times a day, 4.2% said they used dental floss, and 6% of the men indicated they had been informed they had poor breath. Thus, a connection between purportedly better oral hygiene habits and a lesser degree of halitosis is understood. Another study supports this finding, demonstrating that maintaining proper oral hygiene reduces odour, lessens the effects of bad breath, and improves one's image of oneself when others comment on odour.²⁷

This study discovered the psychosocial effects of halitosis on people's quality of life, interpersonal relations, social gatherings, personality, and self-belief because more than 60% of patients' social lives were impacted by their condition, more than 60% of patients felt stress due to their halitosis, and more than 60% of patients' low self-confidence also had an impact on their achievements at work, in addition to being represented by other studies.

CONCLUSION

This study has been done to actually show how halitosis can impact one's social and psychological life in places, homes and even in learning institution. Halitosis due to tongue coating, bad oral hygiene, periodontitis, gingivitis and may also occur from systematic disease even use of drugs. Gastrointestinal cause of halitosis is also of a major concern. Twelve percent patients told that their life partners had been expressing concern about their halitosis issue. 57% patients responded poor oral health status, 38.8% reported satisfactory oral health status. Only 4.2 % of them

had expressed good health. 12.2% of participants had suffered from systematic diseases like gastrointestinal, respiratory and nephritic diseases.

Majority of patients had experienced bad breath and in 62.5% respondents, the social life was affected because of bad breath, similarly in 61.1% patients bad breath had negatively affected their self-confidence and 65 % patients were afraid of socialization and public gatherings.

The social impact experience has been on the quality of life and interpersonal relationship. Psychological effects have been great such as the impact on self-esteem, lowered confidence and depressive thoughts.

Recommendations and suggestions: In order to lessen the emotional consequences on families, additional analytical studies may be carried out to identify the primary reasons of halitosis. Health education and counselling may also be added for such patients at dental clinics.

Halitosis should be taught as a health issue in undergrad medical schools to raise awareness of the condition and emphasize its significance.

Researchers should record or do out similar studies linked to this unappreciated oral health problem. Additionally, because they are such a complicated topic, psychosocial difficulties also require their own research.

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Conflicts of Interest: None declared

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