

Self Reported Halitosis, Oral Hygiene Practices, Medical Conditions and Habits in OPD Patients of a Government Sector Institute in Karachi

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ABSTRACT

Objective: To compare the difference of response in male and female patients associated with halitosis in relation to factors such as self reported halitosis, oral hygiene practices, medical conditions and habits.

Methods: A cross section study was conducted at the OPD of a government sector institute Karachi. Samples of 400 participants were enrolled in the study. Data was collected through a formulated questionnaire and palm test. Statistically significant difference between males and females with respect to different factors was detected by Chi square test.

Results: Factors which showed statistically significant result were “did you notice bad breath” (table1). “Tongue coated with deposits” brushing teeth everyday”, “use of mouthwash and floss everyday” (table 2). In table 3 “respiratory” and “GIT problems” were statistically significant while in table 4 only “mouth breathing” habit was statistically insignificant.

Conclusion: Halitosis itself produces symptoms which could affect the social and personal interaction.

Key words: self reported halitosis, caries, oral hygiene practices, dental factors, and malodour.

How to cite this article:

Taufeeq H, Nadim R, Aslam K and Ansari SA. Self reported halitosis, oral hygiene practices, habits and medical condition in opd patients of a government sector Institute in Karachi. J Dow Uni Health Sci 2017; 11 (3):63-66.

INTRODUCTION

Odors are essential clues as they are loaded with cultural values. In 1550 BC, the Romans used perfumed tablets, chewing leaves and stalks of plants to get rid of halitosis¹⁻⁴. Primary and secondary halitosis originates from different sites, one exhaled by lungs (primary) and the ones exhaled by upper airways (secondary)¹. Volatile sulfur compounds (VSCs) in the oral cavity marks the severity of bad breath^{5-8,13}.

Halitosis (approximately 80–90%) originate within the oral cavity and not in the stomach which is proved by

investigations^{1,6,9,10}. Saliva plays an essential part as it provides protein substrate that is readily used by bacteria. Saliva also performs vital roles of enzymatic digestion, antimicrobial action, regulation of pH, protection of oral tissues, lubrication, assistance in swallowing, potentiating of taste and elimination of the food bolus and facilitation of the removal of carbon and oxygen source for bacteria. Slightly acidic pH of saliva (6.5) restrains the proliferation of gram-negative and anaerobic bacteria and hinders enzymes used for the disintegration of amino acids thus producing compounds containing reduced sulfur (SH₂).

Halitosis can be classified as genuine, pseudo-halitosis, and halitophobia halitosis. Genuine halitosis can be characterized as malodor severity is beyond socially acceptable level. Pseudo halitosis is only self reported by individual¹¹. If the individual is treated successfully for genuine halitosis or pseudo halitosis and still complains of halitosis, the diagnosis is referred to as halitophobia halitosis⁶. Reduction

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in salivary flow is seen as a side effect of antidepressants, antihistamines, antipsychotics, anti-hypertensive, decongestants and narcotics^{6,11,12}. Decrease in salivary flow is also experienced during sleep which gets resolved after cleaning and eating breakfast³. The tongue coating and periodontal condition are also one of the main related factors for halitosis⁴.

Occasional oral malodor disorder is seen in 50% of the adult population while 25% have a chronic problem according to American Dental Association³. Anxiety producing volatile sulphur compounds indicates a link between anxiety and halitosis³.

Treatment can only reduce bad breath but not treat it completely. Halitosis being a common complaint of both genders and has a multifactorial etiology⁶. Since its cause is multidimensional and is established for both the genders but whether the factors are same for both males and females is still uncertain therefore the objective of this study was to compare the difference of response in male and female patients associated with halitosis in relation to factors such as self reported halitosis, oral hygiene practices, medical conditions and habits.

METHODS

A cross sectional study was done by using non probability convenience sampling technique of n=400 hundred participants. The study was done in Dow Dental OPD during the month of July 2015. Participants above the age of twelve were included in the study and excluded participants were below the age of twelve, having any psychological problem or any physical disability. Data was collected through response to the questions done in factors such as self perceived halitosis, oral hygiene maintenance, habits and systemic conditions which was formulated by reviewing the literature Almas et al⁸ and amended in accordance to local culture. In palm test participants were asked to put their right hand in front of the mouth and exhale to breathe out and categorize its odour by smelling it on its own. Examination instruments were used for overall oral observation.

The study was conducted according to ethical guidelines and detailed informed consent was obtained prior to inclusion of participants in the research. The nature of the research was explained to the study participants and anonymity and confidentiality of the study participants were maintained throughout the research.

All procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2008. Informed consent was obtained from all patients for being included in the study.

RESULTS

Data recorded in the performa was entered into SPSS (Statistical Package for Social Sciences) version 20.0 for statistical analysis. Descriptive statistics was performed. Mean and standard deviation are continuous variables while frequency/percentage is categorical variable. Chi-square statistics was used to compare the difference between male and female genders associated with halitosis with response to different factors. P-value less than 0.05 at 95% confidence interval was considered significant.

Factors which showed statistically significant difference between males and females associated with halitosis were “did you notice bad breath” in table 1. In table 2 “tongue coated with deposits” brushing teeth everyday”, “use of mouthwash” and “floss everyday” were statistically significant. In table 3 “respiratory” and “GIT problems” were statistically significant while in table 4 only “mouth breathing” habit was statistically insignificant.

Table 1: Self reported Halitosis compared in males and females

Self-reported halitosis	Male		Female		p-value
	No	Yes	No	Yes	
Did you notice bad breath	60	142	83	115	0.011
Palm test for halitosis positive/negative	64	138	59	139	0.683
Has anyone told you about bad breath	128	74	120	78	0.570
Has anyone in family complained	94	108	90	108	0.828
Has your social life been effected by halitosis	164	38	145	53	0.058

Table 2: Oral Hygiene compared in males and females

Oral hygiene	Male		Female		p-value
	No	Yes	No	Yes	
Bad taste	79	123	87	111	0.327
Decayed tooth	100	102	94	104	0.685
Bleeding Gums	98	104	105	93	0.366
Tongue coated(yellow/white deposit)	113	89	139	59	0.003
Brushing teeth everyday	25	177	52	146	0.000
Clean your tongue everyday	107	95	99	99	0.552
Mouthwash everyday	165	37	182	16	0.003
Floss everyday	162	40	193	5	0.000

Table 3: Drugs and Medical Condition compared in males and females.

Drugs and Medical Condition	Male		Female		p-value
	No	Yes	No	Yes	
Are you taking any medicines	177	25	182	16	0.157
History of sinus/respiratory problems	165	37	176	22	0.042
History of GIT problems	130	72	172	25	0.000

Table 4: Habits compared in males and females

Habits	Male		Female		p-value
	No	Yes	No	Yes	
Do you snore	116	86	158	40	0.000
Are you mouth breather	112	90	92	106	0.072
Do you take tea/coffee regularly	20	182	78	120	0.000
Do you eat raw onions/garlic regularly	150	52	112	86	0.000

DISCUSSION

Halitosis is a common dilemma affecting more than 54% of every population⁽¹⁾. Several methods have been formulated to figure out the actual cause, but remain intricate. Etiology of halitosis is composed up of several factors like biological, dental, psychological and pathological^{11,15}. Bad breath (halitosis) has been described as a serious problem that may ultimately become a social problem and the individual may refrain making from socializing with family, friends and colleagues as observed in our study (53% males and 47% females) and in the study of McKeown¹². Males reported more relatives complaining of bad breath as opposed to females but the difference was insignificant. Females being more concerned about oral health and hygiene which might explain an exaggerated self-perception percentage response on the part of females as seen in our study. In several studies, the methods for evaluation rely upon the individual subject's self perception and awareness^{2,6,8}. This method is not considered to be extremely reliable because of its lack of objectivity, reproducibility and equality and there are greater chances for error. Despite of its flaws hand-on mouth techniques is widely used because of their simplicity.

Within the field of dentistry majority of practitioners believe that halitosis is caused by intra-oral conditions which are also reflected in our study and studies by Eldarrat et al², Soares et al⁷ and Patil et al¹⁰. Lack of oral hygiene measures including brushing, use of mouthwashes and flossing everyday are implicated in breath odor⁹ and a statistical significant difference was seen in our study and comparable to study by Crowe T¹⁴. Tongue coating can be associated by halitosis as proposed by Yaegaki et al¹⁵ which is comparable to

our study. Some people seek the advice of physicians or local practitioners although this responsibility is under the domain of dental surgeon. Patients generally avoid going to the dentist due to dental fear. Special clinics or departments within clinics that deal with this manifestation have not been developed yet in Pakistan and many dentists within both the government and private practice do not devote adequate time for proper treatment and management of patients with bad breath. Currently the only followed therapy after treatment is mouthwash¹².

Statistical significant difference was found between males and females with halitosis when asked about the GI (Gastro-Intestinal) problems. Disease of GI leads to odourous gases that can be breathed out and can be a contributing factor suggested by Scully et al¹⁶.

Habits have an etiological role in the investigation and treatment of several diseases including halitosis. In Pakistani community, huge scale of individuals has a habit of cigarette smoking and tea consumption. In our study a statistically significant difference was reported between males and females but both groups showed a high percentage of tea consumption also reported by Shehata et al¹³. According to a survey both working and non-working males and females consume at least 2-3 cups of tea daily¹⁵. Statistical significant difference was seen in our study who consumed raw onions and garlic everyday which could be a contributing factor as also suggested by Xiao-Jia et al¹⁷.

CONCLUSION

Reasons of halitosis and its treatment are not well known to patients. There could be multiple reasons and other factors that need examination so that a clear difference between the two genders can be figured out. Halitosis requires both the professional and psychological support. Dental professionals play a pivotal role in oral hygiene maintenance and should be highlight in the community because bad oral health is a major initiative factor in halitosis as seen in this study. Need to improve oral hygiene practice is reflected from this study. Factors can be enhanced which are contributive to report the presence of halitosis between the two genders.

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