INTRODUCTION

Halitosis, or bad breathe, is an incredibly embarrassing medico-social problem that affects a significant number of people around the world irrespective of race. It can be defined as an abnormal breath condition in which there is an unpleasant change in the smell sense, being an obstacle or an incompatibility factor in personal contacts and often leading to a voluntary or discriminatory social withdrawal. The term halitosis is derived from Latin, “halitus” meaning “breath” and the Greek “osis” meaning “abnormal” or “diseased.”

The condition is multifactorial in etiology and may involve both oral and non oral conditions. 80-90% causes of halitosis are of oral origin including coated tongue, blood retention in the dental interstices, carious processes, exposed necrotic tooth pulps, plaque, impacted food or debris, porous prosthetic pieces, gingivitis, periodontitis, stomatitis, ulcers, surgical wounds, alveolitis, pericoronitis, unclean dentures and oral carcinoma.

Non oral etiologies of halitosis include upper respiratory tract infections, particularly sinusitis and polyps, gastrointestinal tract disturbances, liver cirrhosis and some metabolic disorders such as diabetes mellitus.

Being multifactorial, halitosis may require an interdisciplinary assessment and treatment involving professionals from dentistry, medicine, psychology and nutrition. The dentist often is the first healthcare professional to examine the patients of halitosis.

As future dentists, the attitude of dental students towards their own oral health is of paramount importance for their creditability among patients requiring dental treatment. Hence, it is required for the dental professionals to have a considerable commitment and training in managing the referred condition.

AIMS AND OBJECTIVES

The aim of this study was to assess the prevalence of self perceived oral malodor and oral hygiene practices among dental students and to compare differences in halitosis values by gender if applicable.

MATERIALS AND METHOD

The present study was carried out on female and male dental students and interns from Modern Dental College &
Research Centre, Indore. A self-administered questionnaire adapted from a study by Almas K. et al \(^6\) was used to assess the following: Self-perception of oral health, Awareness of bad breath, Timing of bad breath, Treatment received for bad breath, Prevalence of oral hygiene habits, Caries and bleeding gums, Dryness of mouth, Smoking habits, and Tongue coating. Questionnaire was provided to each student containing 10 close ended questions about oral hygiene and oral malodor. They were asked to tick one answer among the choices provided to each of the question. A total of 322 students participated in the study.

**RESULTS**

Among the 322 questionnaires, incomplete questionnaires were dropped from the study and thus total of 300 questionnaires were available for data analysis. Demographic profile of the respondents showed that 60% were females and 40% were males with most of them in the age range of between 20 to 24 years of age.

About 54% (162) of students were aware of halitosis out of which 88 were males and 74 were females (Fig 1). Chi square tests showed that males had significantly higher malodour than females. (p<0.05)

Who reported halitosis

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<tr>
<td>Males</td>
<td>88</td>
<td>74</td>
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<td>Females</td>
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62% of the students were examined by their physicians or dentist for bad breath.

78% of the students had either self medicated using chemical plaque control agents like mouthwashes or traditional medication to treat their own bad breath, while only 22.2% of them went for a professional treatment regarding the same.

Majority of students (90%) experienced bad breath after waking up. 13% & 12% of students felt malodor when they were hungry or thirsty respectively and 36% reported bad breath during morning.

Brushing habits were prevalent among 100% of dental students. Mouthwashes were used by 86.6% of the students while dental floss was used by 29.6% of the students.

Caries were self reported by 34% of the students. This result is significant (P<0.05). Bleeding gums was experienced by 37.3% of students. Dry mouth was reported by 0.006% of students. Smoking was reported by 55% of the males and 1% of the female respondents.

DISCUSSION

Oral malodor is a common problem among the general population. It can have
distressing effect that may become a social handicap and affected person may avoid socializing. Self perception is very important for diagnosing and controlling bad breath by seeking appropriate dental treatment.²

The result showed that majority of students were aware of halitosis as bad breath wherein significantly higher number of males could smell their own breath as compared to females (P<0.05). Research has indicated that prevalence and incidence ratios between the males and the females are the same though women tend to seek treatment more often than men. In a Saudi Arabian study conducted among the dental students of King Saud University 44% of males and 32% of females, reported the self perception of malodour⁸. Participants were asked about self perception of their breath. Many studies on self reported halitosis have stressed that the problem of bad breath is often not self-perceived⁴. In some cases, there is a reduced chance of self detection of oral malodour because the paths between the inhaled and exhaled air diverge (while exhaled air travels horizontally, inhaled air travels primarily vertically) ⁹. In the present study, 88 out of 120 males reported presence of oral malodor while 74 out of 180 females reported the self perceived halitosis.

Among the various methods of self assessment for oral malodours a commonly used method includes Hand on mouth test. In present study, among the positive responders for hand on mouth test, 109 subjects (36%) reported having bad breath. Male subjects were significantly higher as compared to female subjects. (p<0.001). Eldarrat A et al⁴ reported a significant difference in prevalence of self-perceived malodour between males and females (23% and 32%, respectively) in hand on mouth test.

A total of 185 students got themselves examined for their breath from a physician/dentist which depicts a fair level of awareness in the present study regarding oral malodor among dental students. In the present study, majority of subjects reported having bad breath on awakening (90%) followed by having bad breath in the morning hours (36%). Another study has similar results in which 45% of Indian dental students reported halitosis, with >80% of them experiencing morning bad breath¹¹. Sleeping, being hungry or thirsty would certainly reduce saliva flow and lead to oral malodour. Less saliva is produced at night thus the mouth becomes dry and dead cells stick to the tongue and the insides of the cheek. When bacteria living in the mouth use these cells for food, they produce foul odour¹. The oral hygiene habits were excellent among the study population with most of the subject population reporting brushing every day. This was however anticipated as the subject population comprised of dental students. Only 29% of the participants in this study reported to use dental floss. The result is similar to another study by Madan et al¹² regarding the use of dental floss among Indian dentists who found that only 15.8% of the population in India used dental floss, which could be attributed to lack of awareness among people and prescription practices of the dentists¹². However, 86.6% of them were regularly using mouthwash which implies a more conscious attitude among dental students regarding the use of mouthwash and the results are comparable to the study done by Aswath et al¹³.

33% & 37.3% of subjects reported having dental caries (p<0.05) & bleeding gums respectively. Deep carious lesions lead to food impaction & putrefaction. The high prevalence of bad breath among the participants of the present study may be
attributed to the presence of dental caries and gingival inflammation apart from other causes. Thus, majority of these subjects are using chemical agents such as mouthwashes to mask bad breath.

Conclusion

Within the limitation of the present study, the results indicate that the prevalence of self perceived malodor among the dental students is within the range reported by other studies. However there is a need to for enlightenment campaigns and continuous messages on halitosis in institutions nationwide to enhance the knowledge on halitosis, its identification, prevention and management. Also, dental students are expected to be good role models for their patients.

Further research is needed to examine oral malodor and correlate self-perceived oral malodor with clinical or laboratory based evaluation and by the standard procedures available.

References: