

# Assessment of Knowledge about Halitosis and its Management Amongst Fresh Medical Graduates in Lahore, A Survey

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## ABSTRACT

**Introduction:** The origin of halitosis comes from the Latin word "Halitus" meaning 'breath, exhaled air.' Halitosis is an unpleasant odour exhaled in breathing, also known by the name of bad breath. The purpose of this research is to evaluate the level of knowledge of fresh medical graduates and their management skills towards halitosis.

**Methods & Materials:** A questionnaire was designed to collect the required information from the fresh medical graduates. The duration of the study was 6 months January 2020 to June 2020. Study was conducted on fresh medical graduates from private and public sector across Lahore visiting the dental Outpatient Department of Institute of Dentistry, CMH Lahore Medical College

**Results:** The study sample comprised of 59.3% females and 40.7% of males. Astonishing, 71.4% did not treat halitosis amongst patients visiting for treatment whilst 28.6% provided treatment for halitosis. Surprisingly, only 28.6% of medical doctors treated oral malodour. Alarmingly 71% doctor did not treat oral malodour. A whopping 95.2 % blamed poor oral hygiene to the biggest cause of halitosis. Stagnation of food secured 2<sup>nd</sup> place with 70% followed by chronic periodontal disease at 64.8%. Surprisingly, 0.4% mentioned that eating Garlic/raw food was considered as a least reason for oral malodour.

**Discussion:**

**Conclusion:** Halitosis was prevalent among patients visiting medical doctors for treatment. They can benefit from enhanced understanding and encouragement to improve their own and the patient's oral hygiene because of their responsibilities to diagnose and improve oral health..

## INTRODUCTION

The origin of halitosis comes from the Latin word "Halitus" meaning 'breath, exhaled air.' <sup>1</sup> Halitosis is an unpleasant odour exhaled in breathing, also known by the name of bad breath. <sup>2</sup> It is a multifactorial condition, with aetiology being classified into intra-oral or extra oral factors.

Some of the notable intraoral factors include poor oral hygiene from the accumulation of food debris and dental bacterial plaque on teeth and tongue, periodontal diseases, Xerostomia, unclean dentures, deep carious lesions, Pericoronitis, exposed necrotic tooth pulp and factors which cause decreased salivary flow. <sup>2,3</sup> Possible systemic causes include upper respiratory tract infections, gastrointestinal disorders like Gastro-oesophageal reflux disease, Renal Failure (end stage), Hepatic failure (feto hepaticus), Diabetic Ketoacidosis, and Hormonal Changes. <sup>3</sup>

Intraoral halitosis is caused by the microbial breakdown of organic substrates (VSCs) by microorganisms. Hydrogen sulphide and methyl mercaptan make up the bulk of these chemicals. Dimethyl sulphide, the other VSC, is mostly responsible for halitosis that occurs beyond the mouth or in the bloodstream. <sup>4,9</sup>

Halitosis is a universal medico-social problem. Halitosis might have an impact on social interactions resulting in psychological changes which eventually lead to social and personal isolation. Halitosis is observed in all age groups; however, the severity of bad breath rises with age. <sup>1,6</sup> Diagnosis and treatment of the correct type of halitosis is very important. It is necessary for a medical practitioner to identify the underlying cause for the treatment of malodour and manage it accordingly.

The purpose of this research is to evaluate the level of knowledge of fresh medical graduates and their management skills towards halitosis.

## METHODS AND MATERIALS

A questionnaire was designed to collect the required information from the fresh medical graduates. The duration of the study was 6 months January 2020 to June 2020. Study was conducted on fresh medical graduates from private and public sector across Lahore visiting the dental Outpatient Department of Institute of Dentistry, CMH Lahore Medical College. The survey consisted of questions

which were designed to determine the knowledge of the fresh medical graduates about halitosis and its management. The data was collected via a Google survey form. Convenient sampling will be done. Sample size was kept as calculated by using WHO formula with 95% confidence and 5% margin of error. Sample population was approached through electronic means (computer assisted). After the entry of data in Microsoft excel, SPSS version 23 will be used to analyze the data. Descriptive statistics were performed to determine the demographic details of the study participants. Mean and frequencies were calculated.

## RESULTS

The study sample comprised of 59.3% females and 40.7% of males. Majority (51.6%) of the doctors graduated in the year 2019 from various colleges of Lahore highlighting 2-3 years of practicing medicine. Astonishing, 71.4% did not treat halitosis amongst patients visiting for treatment whilst 28.6% provided treatment for halitosis. Surprisingly, only 28.6% of medical doctors treated oral malodour. Alarmingly 71% doctor did not treat oral malodour. Out of the total sample population, maximum number of response rate was observed in 25-year-old age group with 37.4% followed by 24-year-olds with 27.5% and third position was owned by 26-year-olds with 25.6%. A whopping 95.2 % blamed poor oral hygiene to the biggest cause of halitosis. Stagnation of food secured 2<sup>nd</sup> place with 70% followed by chronic periodontal disease at 64.8%. Surprisingly, 0.4% mentioned that eating Garlic/raw food was considered as a least reason for oral malodour.

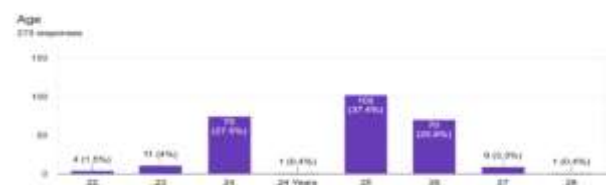


Figure 1: Out of the total sample population, maximum number of response rate was observed in 25-year-old age group with 37.4% followed by 24-year-olds with 27.5% and third position was owned by 26-year-olds with 25.6%

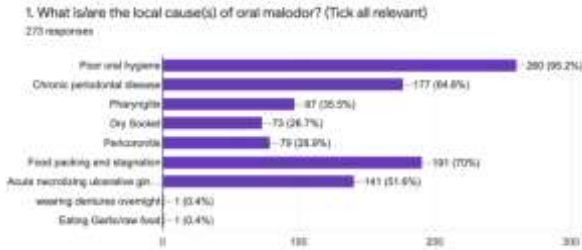


Figure 2: A whopping 95.2% blamed poor oral hygiene to the biggest cause of halitosis. Stagnation of food secured 2<sup>nd</sup> place with 70% followed by chronic periodontal disease at 64.8%. Surprisingly, 0.4% mentioned that eating Garlic/raw food was considered as a least reason for oral malodour.

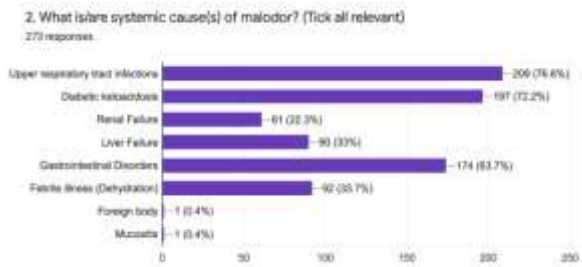


Figure 3: 76.6% of the study participants enlisted Upper respiratory tract infection as a source of oral malodour followed by Diabetic ketoacidosis at 72.2%. Gastrointestinal disorders scored 63.7% in our survey. 0.4% stated Mucositis as a systemic disorder.

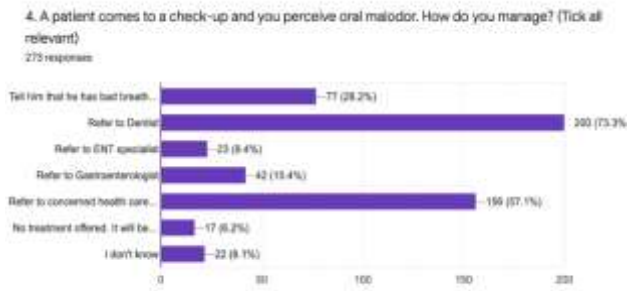


Figure 4: A good 73.3% of medical practitioners referred the patient to a dentist as soon as they perceived oral malodour. 57.1% referred the patient to a health care facility. Astonishingly 8.1% of doctors had no idea what to prescribe whilst 6.2% offered no treatment modality to the patient.

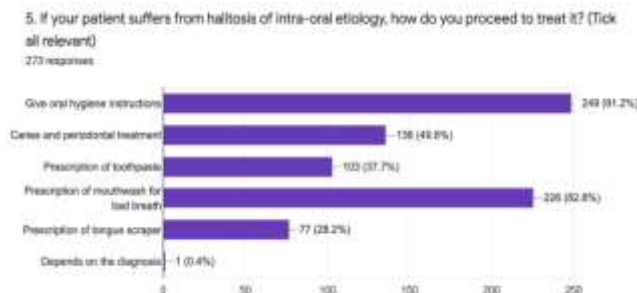


Figure 5: 91.4% of the doctors prescribed oral hygiene instructions to the patients for oral malodour. 82.8% prescribed medicated mouthwash to the treating patient. Nearly twofold doctors recommended dental caries and periodontal disease treatment to combat oral malodour.

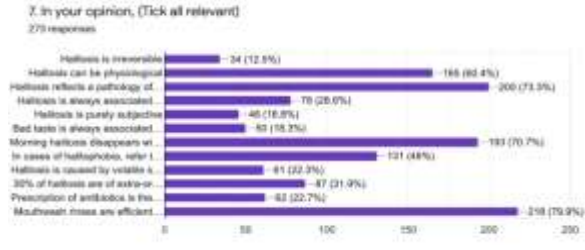


Figure 6: According to the medical doctors, 79.9% doctors stated that mouthwash are sufficient in treating oral malodour. 73.3% doctors reflected that oral malodour is a pathological condition and should be addressed. 70.7% stated that morning malodour diminishes later in the day due to salivary action.

76.6% of the study participants enlisted Upper respiratory tract infection as a source of oral malodour followed by Diabetic ketoacidosis at 72.2%. Gastrointestinal disorders scored 63.7% in our survey. 0.4% stated Mucositis as a systemic disorder. A good 73.3% of medical practitioners referred the patient to a dentist as soon as they perceived oral malodour. 57.1% referred the patient to a health care facility. Astonishingly 8.1% of doctors had no idea what to prescribe whilst 6.2% offered no treatment modality to the patient. 91.4% of the doctors prescribed oral hygiene instructions to the patients for oral malodour. 82.8% prescribed medicated mouthwash to the treating patient. Nearly twofold doctors recommended dental caries and periodontal disease treatment to combat oral malodour. According to the medical doctors, 79.9% doctors stated that mouthwash are sufficient in treating oral malodour. 73.3% doctors reflected that oral malodour is a pathological condition and should be addressed. 70.7% stated that morning malodour diminishes later in the day due to salivary action.

## DISCUSSION

Oral malodour is a typical issue among everyone. It can have distressing impact that might turn into a social debilitation and impacted individual might try not to mingle<sup>10,11</sup> The study sample comprised of 59.3% females and 40.7% of males. Majority (51.6%) of the doctors graduated in the year 2019 from various colleges of Lahore highlighting 2-3 years of practicing medicine. Astonishing, 71.4% did not treat halitosis amongst patients visiting for treatment whilst 28.6% provided treatment for halitosis. Surprisingly, only 28.6% of medical doctors treated oral malodour. Alarmingly 71% doctor did not treat oral malodour.<sup>10</sup> A similar study in the Lahore region found similar results regarding dentistry students' awareness of halitosis and oral hygiene behaviours. The only difference is of undergraduate dental students to our recently graduated medical doctors.<sup>10</sup>

Present study shows that only 59.3% females and 40.7% males' medical doctors who graduated from various colleges of Lahore. These figures are comparable to research conducted in Saudi Arabia and Baghdad.<sup>12,13</sup> In another study, 79.9% of doctors recommended plaque control agents like mouthwash or conventional medication to address dental malodour, whereas only 22.2% sought professional help for the problem.<sup>10,14</sup>

Other research have backed up our claim that systemic disease and drugs may be to blame.<sup>13,15,16</sup>

Oral malodour was suggested to be linked to both Tongue coating thickness and P. gingivalis colonisation in the layer.<sup>17</sup> However, according to a recent study, roughly 70% of doctors cited food stagnation and plaque as causes.<sup>10, 17</sup> According to estimates, 10 to 30 percent of the population in the United States suffers from foul breath on a regular basis.<sup>10</sup> According to a recent study of dentists in the United States, 41% of dentists observed six or more patients with persistent foul breath every week.<sup>10</sup> Oral malodour is a worldwide problem that is experienced differently in different cultures and societies, according to the studies cited above.<sup>10,17.</sup>

## CONCLUSION

Halitosis was prevalent among patients visiting medical doctors for treatment. They can benefit from enhanced understanding and encouragement to improve their own and the patient's oral hygiene because of their responsibilities to diagnose and improve oral health.

## REFERENCES

- 1 Nagy A, Brugoviczky Z, Novák P, Nagy G. Clinical importance, and diagnosis of halitosis. *Fogorvosi szemle*. 2012 Sep 1; 105(3):105-11.
- 2 Adewole RA, Eweka OM, Agbelusi GA. A review of knowledge, diagnosis, and treatment of halitosis among Nigerian dentists-a pilot study. *Oral Biol Dent*. 2014 Jun; 2(1):6.
- 3 Porter SR, Scully C. Oral malodour (halitosis). *Bmj*. 2006 Sep 21; 333(7569):632-5.
- 4 Aylikci BU, Çolak H. Halitosis: From diagnosis to management. *Journal of natural science, biology, and medicine*. 2013 Jan; 4(1):14.
- 5 Heboyan A, Avetisyan A, Vardanyan A. Halitosis as an issue of social and psychological significance. *Journal of research in Medical and Dental Science*. 2019 Jul; 7:33-40.
- 6 Yaegaki K, Coil JM. Examination, classification, and treatment of halitosis; clinical perspectives. *Journal-Canadian dental association*. 2000 May 1; 66(5):257-61.
- 7 Rajasekaran S, Pralhad S. Knowledge About Halitosis Among Undergraduate Students in A Dental College. *International Journal of Clinical Dentistry*. 2019 Oct 1; 12(4):307-15.
- 8 Oppliger N, Roth B, Filippi A. Knowledge of halitosis among dentists and dental hygienists. *Swiss Dent J*. 2014 Jan 1; 124(2):133-43.
- 9 Nunes JC, Martínez-Sahuquillo Á, Cameira MJ, Marques HD. Halitosis: Are dentists being prepared for this challenge? –A questionnaire survey in a dental school. *Revista Portuguesa de Estomatologia, Medicina Dentária e Cirurgia Maxilofacial*. 2011 Jul 1; 52(3):142-6.
- 10 Rana S, Shakoor A, Fahim A. Awareness of Halitosis and Oral Hygiene Among Undergraduate Dental Students. *J Pak Dent Assoc* 2017;26(4):141-45. DOI: <https://doi.org/10.25301/JPDA.264.141>
- 11 Eli I, Baht R, Koriat H, Rosenberg M. Self perception of breath odor. *J Am Dent Assoc* 2001, 132:621-6.
- 12 Almas K, Al-Hawish A, Al-Khamis W. Oral hygiene practices, smoking habit, and self-perceived oral malodour among dental students. *J Contemp Dent Pract* 2003. 15; 4:77-90.
- 13 Al-Atrooshi BA, Al-Rawi AS. Oral halitosis and oral hygiene practices among dental students. *J Bagh Coll Dent* 2007; 19:72-76.
- 14 Azodo C, Umoh A. Self-perceived oral malodour among periodontal patients: prevalence and associated factors. *Int J Med Biomed Res*. 2013; 2:125-132.
- 15 20. Aylikci BU, Colak H. Halitosis: From diagnosis to management. *J Nat Sci Bio Med*. 2013; 4: 14-23.
- 16 Murata T, Fujiyama Y, Yamaga T, Miyazaki H. Breath malodor in an asthmatic patient caused by side effects of medication: a case report and review of the literature. *Oral Dis*. 2003; 9:273-76
- 17 Kishi M, Kimura S, Dhare-Nemoto Y, et. al. Oral malodour and periodontopathic microorganisms in tongue coat of periodontally healthy subjects. *Dentistry in Japan* 2002;38: 24-28