Prevalence of Halitosis among Patients Who Smoke

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ABSTRACT

Halitosis is the common term used to define an unpleasant or an offensive odor in expired air, regardless of whether it originates from oral or non-oral sources. Other terms include bad breath, foul breath, breath odor, foul smells, foetor ex ore, breath malodor, oral malodor or offensive breath. Halitosis can be caused by several intra-oral and extra-oral factors. Oral sources of halitosis mentioned in the literature are tongue coating, periodontal disease, extensive carious lesions with exposed tooth pulps, pericoronitis, mucosal ulcerations and diseases, impacted food and debris, unclean dentures, decreased salivary flow rate, and habitual mouth breathing, the latter especially in children. Halitosis is the general term used to describe any disagreeable odour in expired air, regardless of whether the odorous substances originate from oral or non-oral sources. Other names used are fetor ex ore, fetor oris, bad or foul breath, breath malodour, and oral malodour. Halitosis refers to unpleasant breath from the mouth and it is divided in three categories: genuine halitosis, pseudo halitosis and halitophobia. There are several causes of bad breath including those resulting from a systemic or nasopharyngeal pathology or condition, the main source of most halitosis is the oral cavity. Non-oral sources of breath odour are generally related to systemic problems and/or medications including conditions such as diabetes, liver and kidney disorders, and pulmonary disease. Some medications, especially those that reduce salivary flow such as antidepressants, antipsychotics, narcotics, decongestants, antihistamines, and antihypertensive drugs contribute towards non-oral sources of breath odor. The main cause of halitosis is due to lifestyle related habits like smoking, drinking etc. Smoking is one of the main causes for halitosis. Temporary and transitory factors such as diet containing garlic, onion and pepper. This is a retrospective clinical study carried out at Sabetha Dental College. The data were taken from June 2019 to February 2021. A total of 16 samples were collected. The aim of the study is to analyze the prevalence of halitosis among patients who smoke. Within the limitations of the study it can be concluded that there is a high prevalence of Halitosis among patients who smoke.

KEYWORDS
Halitosis, Smokes, Stains, Cigarettes, Alcohol

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INTRODUCTION

Halitosis is the common term used to define an unpleasant or an offensive odor in expired air, regardless of whether it originates from oral or non-oral sources. Other terms include bad breath, foul breath, breath odor, foul smells, foetor ex ore, breath malodor, oral malodor or offensive breath. Halitosis can be caused by several intra-oral and extra-oral factors.[1] Oral sources of halitosis mentioned in the literature are tongue coating, periodontal disease, extensive carious lesions with exposed tooth pulps, pericoronitis, mucosal ulcerations and diseases, impacted food and debris, unclean dentures, decreased salivary flow rate, and habitual mouth breathing, the latter especially in children.[2] Halitosis is the general term used to describe any disagreeable odour in expired air, regardless of whether the odorous substances originate from oral or non-oral sources. Other names used are fetor ex ore, fetor oris, bad or foul breath, breath malodour, and oral malodour. Halitosis refers to unpleasant breath from the mouth and it is divided in three categories: genuine halitosis, pseudo halitosis and halitophobia.[3-7] There are several causes of bad breath including those resulting from a systemic or nasopharyngeal pathology or condition, the main source of most halitosis is the oral cavity. Non-oral sources of breath odour are generally related to systemic problems and/or medications including conditions such as diabetes, liver and kidney disorders, and pulmonary disease. Some medications, especially those that reduce salivary flow such as antidepressants, antipsychotics, narcotics, decongestants, antihistamines, and antihypertensive drugs contribute towards non-oral sources of breath odor. The main cause of halitosis is due to lifestyle related habits like smoking, drinking etc. Smoking is one of the main causes for halitosis. In healthy subjects, tongue coating is by far the most important source of malodor, most of the odor coming from the dorso-posterior surface of the tongue where the crypts are the favored sites for growth of the anaerobic bacteria responsible for halitosis. In approximately 85 % of patients with persistent genuine halitosis, the odour originates from the mouth and is mainly caused by anaerobic microorganisms. Volatile sulfur compounds such as methyl mercaptan, hydrogen sulphide, which are produced by anaerobic microorganisms, are thought to be the primary causes of halitosis. Some investigators believe that besides VSC, other volatiles produced by oral putrefaction processes such as organic acids, ammonia, and amines may also cause oral malodor.[7-15]

MATERIALS AND METHODS

This is a retrospective clinical study, carried out at Saveetha Dental College. This study involves the analysis of the most frequently extracted teeth (quadrant wise). The sample / data were taken over a period of one year and seven months from June 2019 to February 2021. Ethical Approval was obtained from the Institutional Review Board. Approximately 86000 patient records between June 2019 and February 2021 were assessed and data were retrieved.[16]

Inclusion criteria:

- Age (patient age between 18 and above 50 years)
- Gender
- Patient with smoking habits
- Patient having halitosis

Exclusion criteria:

- Systemic disease
- Medication variation seen in different ethnicities, gender and races.
- Patient undergoing extraction of deciduous teeth.

A total of 16 samples / data were collected and assessed for age, gender, smoking habit, halitosis. Collected data was tabulated in the excel sheet. The data were imported and transcribed in Statistical Analysis Package for Social Science, version 20 (SPSS) by IBM. Descriptive Analysis was based on quantitative variables and frequencies for categorical variables (p value < 0.005).[17] Sixty subjects were selected for study; thirty parturients to each group. Sixty five percentage of the subjects were between the age of 21 to 30 years (n = 22 in Ondansetron group and n = 17 in the Saline group). The mean age of patients in the Saline and Ondansetron group was 28.2 and 27.43 years respectively. The difference in the mean age between the two groups had no statistical significance (p -value: 0.498). The mean weight of patients in the Saline and Ondansetron groups was 58.53 and 57.97 kilograms respectively. The difference in mean weight between the two groups had no statistical significance (p - value: 0.663). The ASA of all 60 patients in the study was II. The participants of both groups had comparable hemodynamic variables like baseline Heart Rate (HR), baseline Systolic Blood Pressure (SBP), baseline Diastolic Blood Pressure (DBP) and baseline Mean Arterial blood Pressure (MAP) with no statistically significant difference (p - value: 0.751, p - value: 0.506, p-value: 0.745 and p - value: 0.619 respectively).[18-21]

RESULTS AND DISCUSSION

Smoking is one of the leading causes of halitosis. Halitosis is a term used to describe any undesirable odor in expired air, regardless of whether the odorous substance originated from an oral or non-oral source. Bad breath is not only a personal problem but also affects the public as it occurs within a social and cultural context and it affects one's body image and self-confidence.[22-26] In this study we observed that the prevalence of halitosis was higher in the age group 26 to in this study we observed that the prevalence of halitosis was higher in the age group 26 - 45years and 46 - 55 years which is consistent with another study age group increases prevalence of halitosis increases. This is mainly due to an unhealthy lifestyle and poor oral hygiene. According to this study in the age group 26 to 45 years and 46 to 55 years there are 18.7 5 % smokers each respectively and 12.50 % are non-smokers in the age group 26 to 45 years and 46 to 55 years. However it was statistically not significant which is consistent with other studies In this study 56.25 % of the patient Who had halitosis had a habit of smoking and 43.75 % of the patient or non-smokers smoking is one of the main factor for health assist the uniqueness of the study is that it helps us to understand the prevalence of halitosis among the patient who is more just got includes study of a larger population.[27-30]

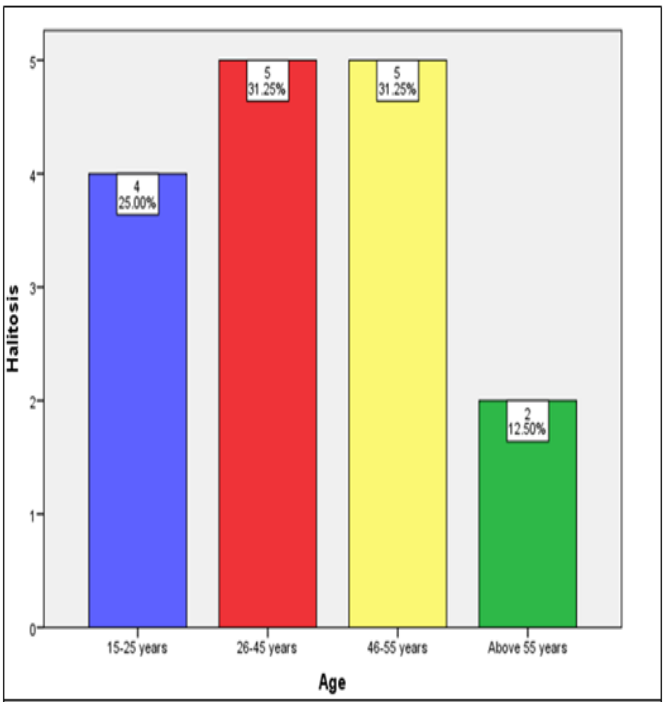

Figure 1. This Graph Shows The Association Of Halitosis And Age Where Blue Represents Age Group 15-25 Years, Red Represents 26-45 Years, Yellow Represents 46-55years And Green Represents Above 55 Years. The X Axis Denotes Age and Y Axis Denotes Halitosis. In this graph most patients with halitosis are in the age group 26-45 years 31.25% and 46-55years 31.25%.

Our study indicates that prophylactic Ondansetron at a dose of 4 mg reduces the incidence of hypotension after spinal anesthesia for elective caesarean delivery. There were also significant reductions in the number of hypotensive episodes in the ondansetron group in comparison to the saline group. Ondansetron use also benefited from a decrease in the need to use of vasopressor agents to maintain haemodynamic stability in the Ondansetron group (Figure 2).

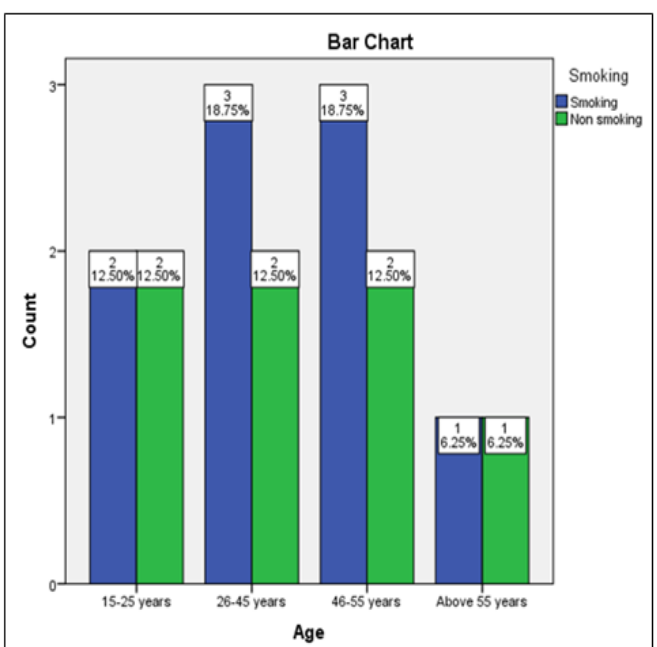

Figure 2. BarGraphs Represent Age Wise Distribution of Smoking and Non-Smoking Patients, Blue Represents Smoking Patients And Green Represents Non-Smoking Patients. The x axis denotes age and y axis denotes counts of smoking and non-smoking patients.

This could be a simple, cost-effective method to counter-act the troublesome side effect of maternal hypotension after spinal anesthesia for an elective caesarean section in the developing countries. Further studies with larger samples and varying doses of ondansetron are needed. Other maternal and foetal outcome measures like incidences of post-operative nausea, vomiting, foetal acidosis, APGAR scores in patients receiving ondansetron is also necessary to understand the safety profile of this technique (Figure 3).[31-33]

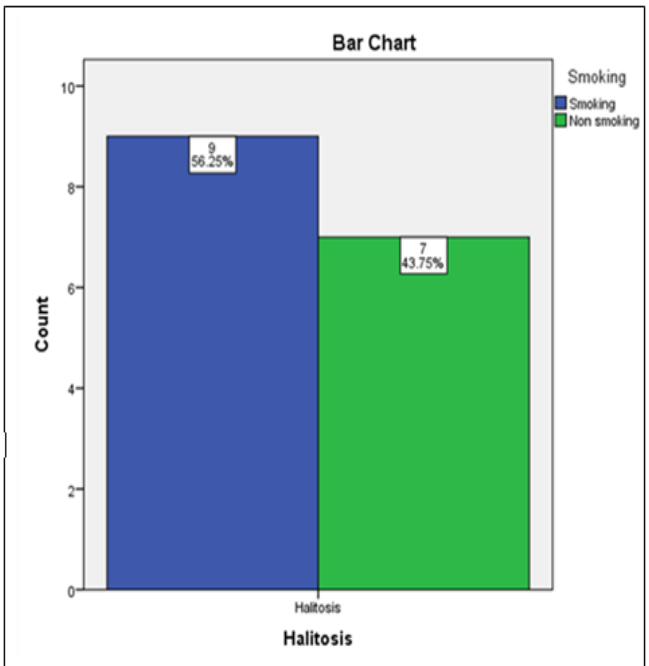

Figure 3. This Graph Represents Patients with Halitosis Wise Distribution of Smoking and Non-Smoking Patients. Blue Represents Smoking Patients And Green Represents Non Smoking Patients. The X Axis Denotes Age and Y Axis Denotes Counts Of Smoking And Non Smoking Patients.

CONCLUSION

Within the limits of the study the prevalence of halitosis among the patients who smoke is quite high the most common age group with halitosis which smoking habit were 26 to 45 years and 46 to 55 years smoking situation resolved or eliminate halitosis at a practical level it is important to educate the patient or the individual about the adverse effects of smoking on oral cavity.

REFERENCES

1. Avinash CKA, Tejasvi MLA, Maragathavalli G, et al. Impact of ERCC1 gene polymorphisms on response to cisplatin based therapy in oral squamous cell carcinoma (OSCC) patients. Indian J Pathol Microbiol 2020;63(4):538.
2. Bornstein M M, Kislig K, Hoti B B, et al. Prevalence of halitosis in the population of the city of Bern, Switzerland: a study comparing self-reported and clinical data. Eur J Oral Sci 2009; 117(3):261–267.
3. Bornstein M M, Stocker B L, Seemann R, et al. Prevalence of halitosis in young male adults: a study in swiss army recruits comparing self-reported and clinical data. J Periodontol 2009; 80(1):24–31.
4. Chaitanya N C, Muthukrishnan A, Rao K P, et al. Oral Mucositis Severity Assessment by Supplementation of High Dose Ascorbic Acid During Chemo and/or Radiotherapy of Oro-Pharyngeal Cancers-A Pilot Project. Indian J Pharm Educ Res 2018;52(3):532–

539.
5. Chaturvedula B B, Muthukrishnan A, Bhuvaraghan A, et al. Dens invaginatus: a review and orthodontic implications. British Dent J 2021; 230(6):345–350.
6. Eldarrat A, Alkhabuli J, Malik A. The Prevalence of Self-Reported Halitosis and Oral Hygiene Practices among Libyan Students and Office Workers. Libyan j med 2008;3(4):170–176.
7. Ezhilarasan D, Apoorva V S, Ashok Vardhan N. Syzygium cumini extract induced reactive oxygen species-mediated apoptosis in human oral squamous carcinoma cells. Journal of Oral Pathology & Medicine: Official Publication of the International Association of Oral Pathologists and the American Academy of Oral Pathology 2019;48(2):115–121.
8. Ezhilarasan D, Lakshmi T, Subha M, et al. The ambiguous role of sirtuins in head and neck squamous cell carcinoma. Oral Diseases 2021.
9. Gudipaneni R K, Alam M K, Patil S R, et al. Measurement of the Maximum Colusa Bite Force and its Relation to the Caries Spectrum of First Permanent Molars in Early Permanent Dentition. Int J Clin Pediatr Dent 2020;44(6):423–428.
10. Hammad M M, Darwazeh A M, Al Waeli H, et al. Prevalence and awareness of halitosis in a sample of Jordanian population. J Int Soc Prev Community Dent 2014;4(3):S178–S186.
11. Hasan G A. Oral Hygiene Practices and Self - Perceived Halitosis among Dental Students. J Bagh College Dentistry 2001:26(3):58–62.
12. Jayasree R, Kumar P S, Saravanan A, et al. Sequestration of toxic Pub (II) ions using ultrasonic modified agro waste: Adsorption mechanism and modelling study. Chemosphere 2021;285:131502.
13. Jiun I L E, Siddik S N A B, Malik S N, et al. Association Between Oral Hygiene Status and Halitosis Among Smokers and Nonsmokers. Oral Health & Preventive Dentistry 2015;13(5):395–405.
14. Kavarthapu A, Gurumoorthy K. Linking chronic periodontitis and oral cancer: A review. Oral Oncology 2021;105375.
15. Kishi M, Ohara Nemoto Y, Takahashi M, et al. Prediction of periodontopathic bacteria in dental plaque of periodontal healthy subjects by measurement of volatile sulfur compounds in mouth air. In Archives of Oral Biology 2013;58(3):324–330.
16. Mehta M, Dhanjal D S, Paudel K R et al. Cellular signalling pathways mediating the pathogenesis of chronic inflammatory respiratory diseases: an update. Inflammopharmacology 2020;28(4):795–817.
17. Patil S R, Maragathavalli G, Ramesh D N S, et al. Assessment of Maximum Bite Force in Pre-Treatment and Post Treatment Patients of Oral Submucous Fibrosis: A Prospective Clinical Study. J Hard Tissue Biol 2021;30(2):211–216.
18. Perumalsamy H, Sankarapandian K, Veerappan K, et al. In silico and in vitro analysis of coumarin derivative induced anticancer effects by undergoing intrinsic pathway mediated apoptosis in human stomach cancer. Phytomedicine 2018; 46:119–130.
19. PradeepKumar A R, Shemesh H, Nivedhitha M S, et al. Diagnosis of Vertical Root Fractures by Cone-beam Computed Tomography in Root-filled Teeth with Confirmation by Direct Visualization: A Systematic Review and Meta-Analysis. J Endod 2021;47(8):1198–1214.
20. Preethi K A, Lakshmanan G, Sekar D. Antagomir technology in the treatment of different types of cancer. Epigenomics 2021;13(7):481–484.
21. Rajakumari R, Volova T, Oluwafemi O S, et al. Nano formulated proanthocyanidins as an effective wound healing component. Mater Sci Eng 2020; 106:110056.
22. Rajeshkumar S, Menon S, Venkat Kumar S, et al. Antibacterial and antioxidant potential of biosynthesized copper nanoparticles mediated through Cissus arnotiana plant extract. J Photochem Photobiol B 2019; 197:111531.
23. R H Ramani P, Tilakaratne W M, Sukumaran G, et al. Critical appraisal of different triggering pathways for the pathobiology of pemphigus vulgaris-A review. Oral Diseases. 2021.
24. Riad A, Kassem I, Hockova B, et al. Halitosis in COVID-19 patients [Review of Halitosis in COVID-19 patients]. Special Care in Dentistry: Official Publication of the American Association of Hospital Dentists, the Academy of Dentistry for the Handicapped, and the American Society for Geriatric Dentistry 2021;41(2):282–285.
25. Sarode S C, Gondivkar S, Sarode G S, et al. Hybrid oral potentially malignant disorder: A neglected fact in oral submucous fibrosis. Oral Oncology 2021:105390.
26. Scully C, El-Maaytah M, Porter S R, et al. Breath odor: etiopathogenesis, assessment and management. In European Int J Oral Sci 1997;105(4):287–293.
27. Setia S, Pannu P, Gambhir R S, et al. Correlation of oral hygiene practices, smoking and oral health conditions with self-perceived halitosis amongst undergraduate dental students. Journal of Natural Science, Biology, and Medicine 2014;5(1):67–72.
28. Sharma P, Mehta M, Dhanjal D S, et al. Emerging trends in the novel drug delivery approaches for the treatment of lung cancer. Chemico-Biological Interactions 2019;309:108720.
29. Sivakumar A, Nalabothu P, Thanh H N, et al. A Comparison of Craniofacial Characteristics between Two Different Adult Populations with Class II Malocclusion-A Cross-Sectional Retrospective Study Biology 2021;10(5).
30. Smith D R, Leggat P A. Smoking among Healthcare Professionals. Darlington Press 2011.
31. Sterner N, Rosenberg M. Breath Odors: Origin, Diagnosis, and Management. Springer Nature 2020.
32. Tangerman A. Halitosis in medicine: A review. Int Dent J 2002;52(5):201–206.
33. Uma Maheswari T N, Nivedhitha M S, Ramani P. Expression profile of salivary micro RNA-21 and 31 in oral potentially malignant disorders. Brazilian Oral Research 2020; 34:e002.