



AWARENESS OF HALITOSIS AMONG THE GENERAL POPULATION

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ABSTRACT

Halitosis or oral malodor is an unpleasant breath emitted from a person's mouth which may originate from oral or non-oral sources. The aim of the study is to assess the knowledge and create awareness among the general population and analyzing the results on the basis of gender and age. An online survey was conducted which had got 125 responses where 76 were females and 49 males of different age groups with a self administrated questionnaire. The age group 18-30 and females were more vulnerable to halitosis and various oral diseases in the long run in spite of they being more aware of this. The people above 45 years of age are less prone and aware of halitosis. Everyone should inculcate good oral hygiene practices to have an improvement in their quality of life and prevent such problems.

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INTRODUCTION

Halitosis, also called as oral malodor or fetor oris is an oral health condition characterized by consistently emanating odorous breath from a person's mouth. The condition is multifactorial and may involve oral and non-oral conditions.^[1] The unpleasant odor is caused by volatile organic compounds originating from the mouth or the expired air. The odor can be specific for certain diseases or infections.^[2] It may have physiological or pathological causes. Physiological causes include morning breath or ingestion of certain foods such as garlic, onion, etc...^[3] The pathological causes may be gingivitis, periodontitis, ulcers and xerostomia.^[4] Microorganisms causing oral malodor are gram-negative bacteria species like *Treponema denticola*, *Porphyromonas gingivalis*, *Prevotella intermedia*, *Centipeda periodontii*, *Enterobacteriaceae*.^[5] Gram-positive microorganisms like *Streptococcus salivarius* contribute to the malodor production, deglycosylate the salivary glycoproteins, exposing protein core for denaturation by gram-negative bacteria.^[6] Bacterial interactions occur in gingival crevices, periodontal pockets but oral malodor also occurs in the posterior dorsal tongue.^{[7], [8]} These bacteria degrade sulfur containing amino acids like cysteine, methionine into fowl smelling volatile sulfur compounds (VSC) like hydrogen sulfide (H₂S), dimethyl sulfide ((CH₃)₂S). The VSC are produced through the activities of bacteria in saliva in the gingival crevices and on tongue surface.^[9] Some agents which are responsible for bad odor are diamines, short fatty acids, VSC.^[7] Other than physiological and pathological causes, there are reasons as well:

1. Improper cleaning of dentures, decreased salivary rate, tobacco, alcohol, poor oral health care are also considered to increase the mouth odor.^[1]
2. In addition to this, periodontal and gingival diseases are responsible for around 60% of oral related factors and tongue for 40% of them.^[10]
3. Aggressive periodontitis, typified loss of periodontal bone result in tooth mobility causing intense oral malodor.^[7]
4. The tongue coating is predominant in younger generation and periodontal disease with tongue coating in older people.^[8]
5. Problems in the gastrointestinal tract and respiratory tract infections also cause oral malodor as a consequence of nasal or sinus secretions passing into the oropharynx.^[11]
6. Xerostomia due to salivary gland problems can also lead to halitosis.
7. Illness like diabetes, tonsillitis, sinus, reflex diseases, liver, kidney, lung diseases also contribute to this.^[12]
8. Halitosis can even be caused because of the administration of drugs. Some antihistamines, tranquilizers are used wherein it decreases the salivary production therefore decreasing the self cleaning ability of oral cavity.^[3]
9. Use of toothbrush less than once daily is also strongly associated with this.^[13]

Therefore for the eradication of halitosis an appropriate diagnosis, therapy, mechanical plaque control, including tooth brushing and tongue cleaning, combined with the use of an effective antimicrobial mouth rinse is essential.^[14]

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Awareness Of Halitosis Among The General Population

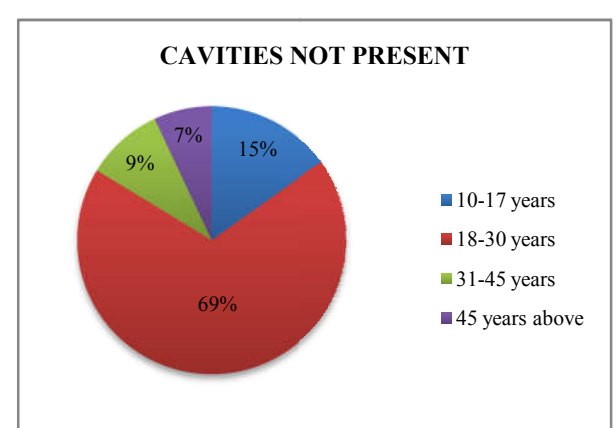
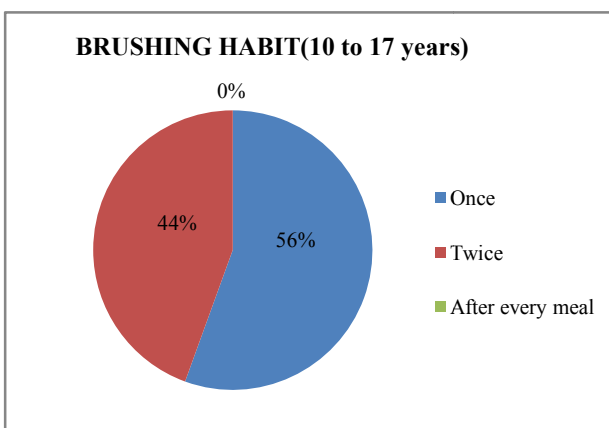
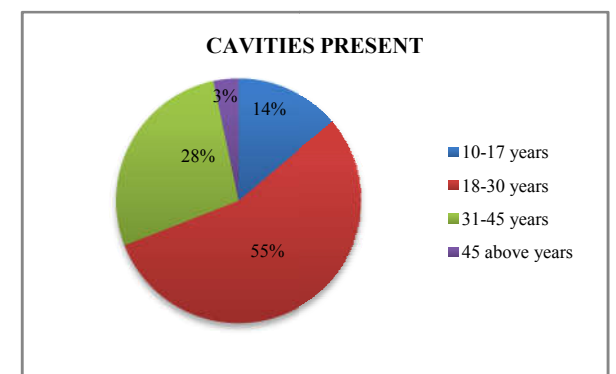
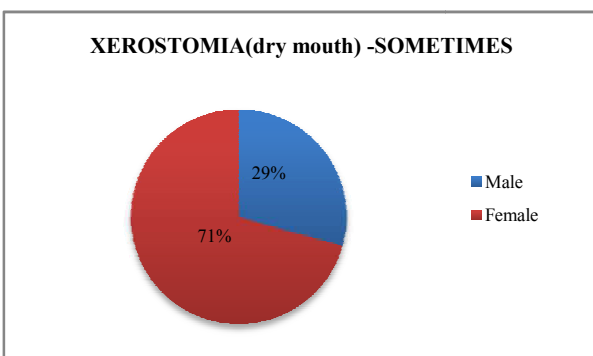
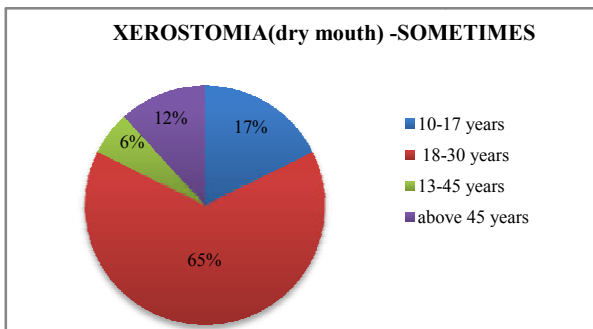
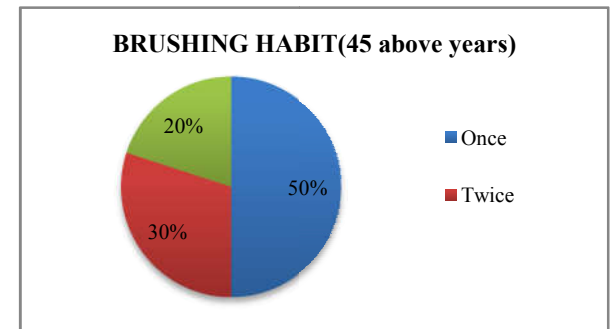
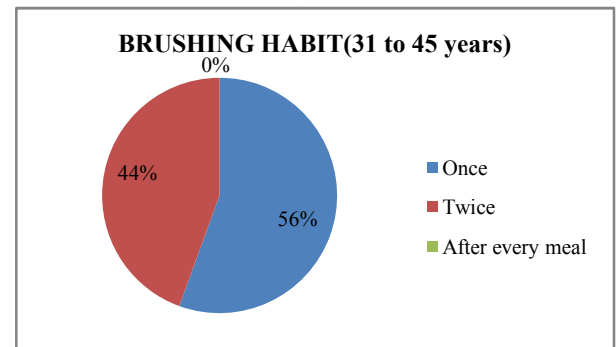
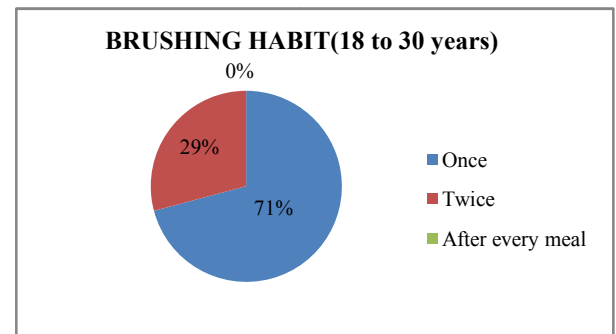
The aim of this survey based study was to assess the prevalence of persistent oral malodor in a general population, and if sex and age are risk factors for this condition.

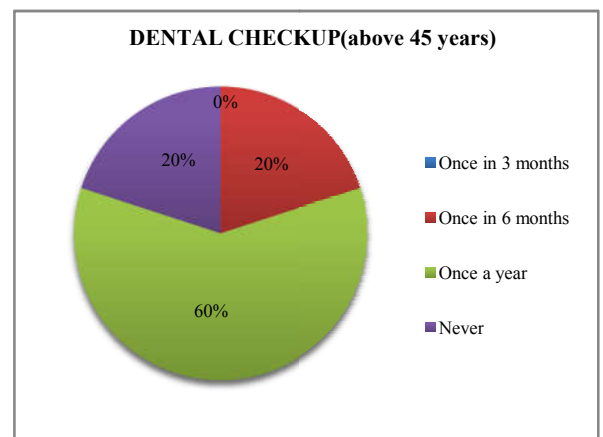
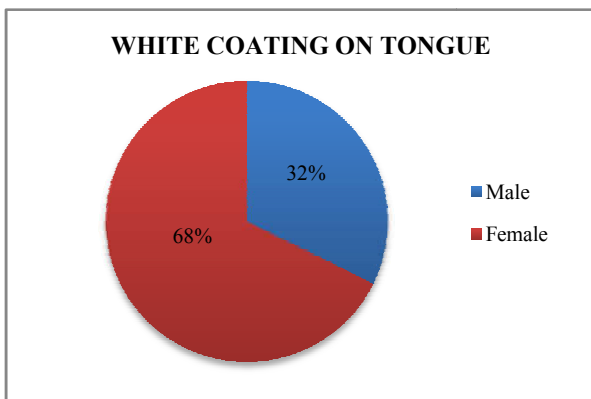
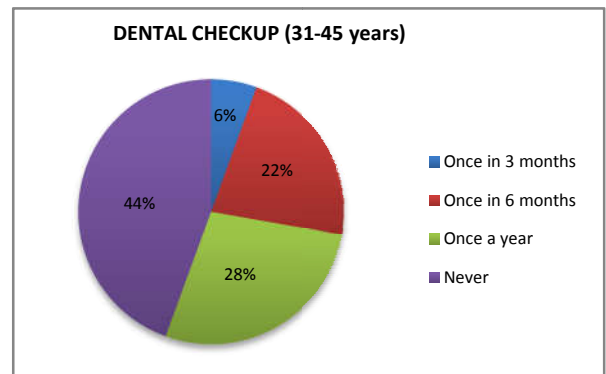
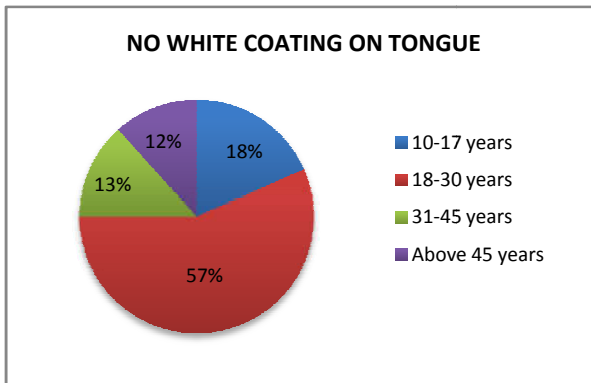
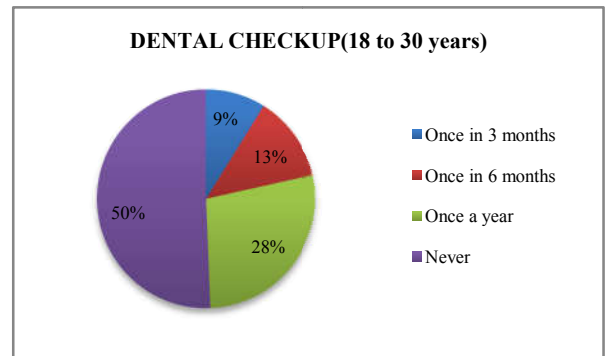
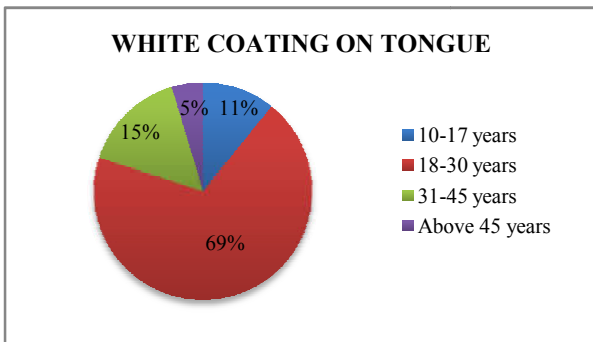
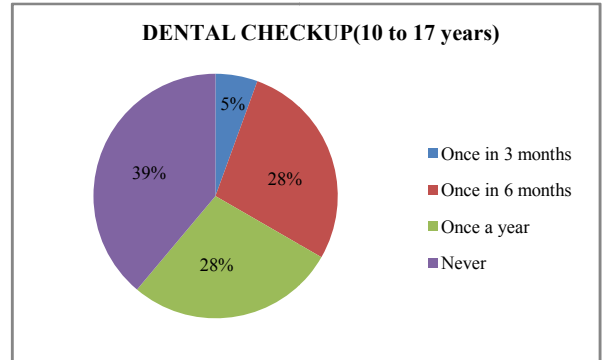
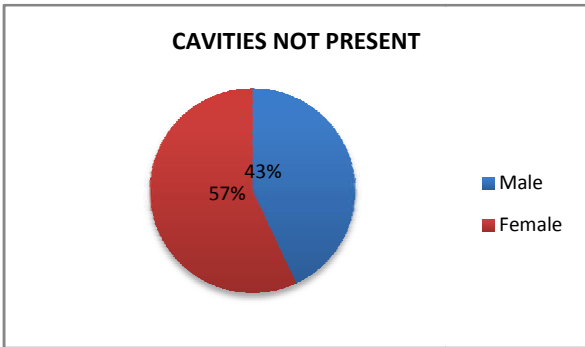
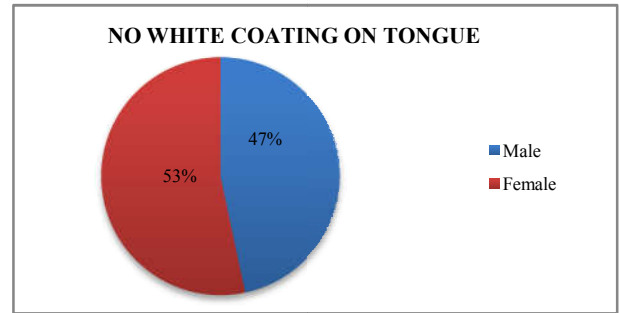
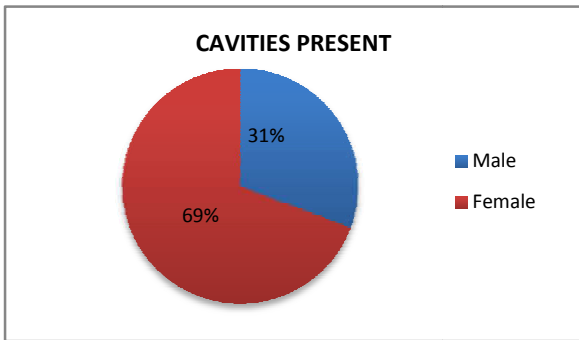
MATERIALS AND METHODS

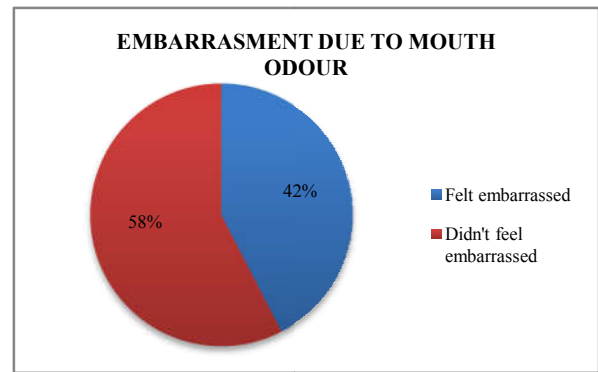
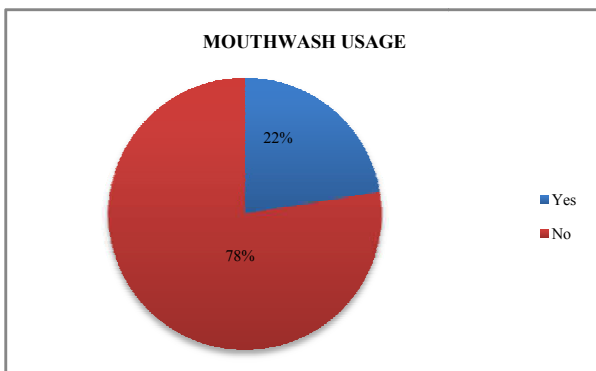
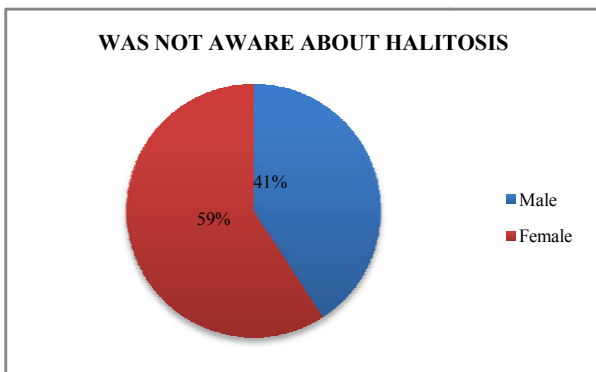
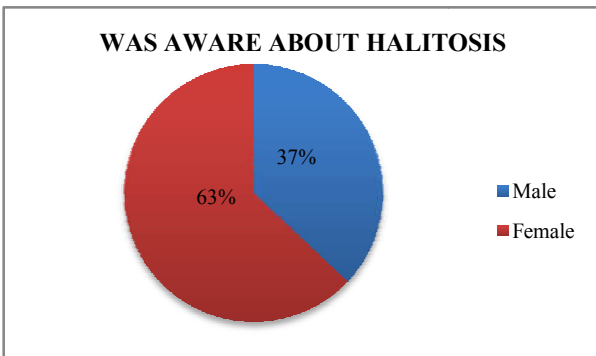
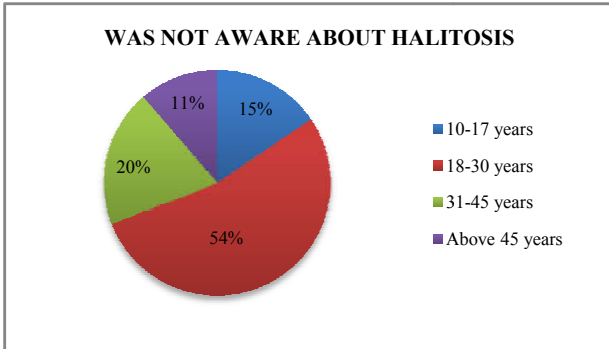
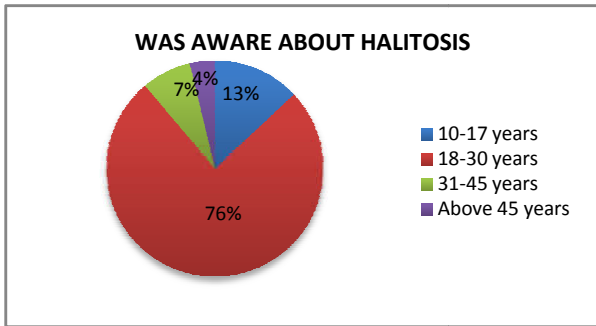
The study was done through an online survey. With 125 responses, it had the general population from the age of 11. The age groups were divided as: 11-17, 18-30, 30-45 and 45 above. They were required to fill the questionnaire which included 20 questions related to the causes of mouth odor, their brushing habits, oral hygiene maintenance, diseases leading to mouth odor etc. Then finally, the respective responses were verified and the analysis was prepared from the results obtained by making suitable pie charts for better understanding and information.

RESULTS

There were 125 participants in which 76 were females and 49 were males. These participants of age group from 11 years were assessed on various factors regarding their oral hygiene practices, brushing habits, mouthwash usage, any medical history, dental check-ups etc. The pie charts show the percentages of results obtained.







DISCUSSION

The study has shown the association of halitosis with various factors and the percentage of prevalence of these when compared on the basis of age group and gender. Xerostomia which is the dry mouth condition seems to have a strong relation with halitosis. People with dry mouth show increased volume of plaque on teeth and decreased salivary flow. Among all the respondents, 71% females felt the dryness in their mouth, while 29 % among the males. When specific age group was noticed, the age group between 18-30 were more prone to dryness than other age group comparing with P Nadanovsky study aged 20 years of age and over, have greater risk of suffering from constant oral malodor.^[15]

The results of this study regarding brushing habits show similarities with a research done by Shristi Nadar *et al* among the adolescent age group (10-17) that 44% brush twice. But as they grow, they become more carefree and start to get influenced by bad habits. 29% of people who were under age group 18-30 had the habit of brushing twice a day. It also observed that only 1.6 % of all the respondents who were above 45 years brush their teeth after every meal.^[16] Improper brushing technique would cause the food particles to get stuck between the teeth. This lead to cavities, tooth decay and periodontal problems in severe cases. 55% who had cavities were of the age group 18-30 and it was also noted that 69% females were more prone to cavities than males.

There is a strong relation of white coating on the tongue with halitosis. Among all the respondents, 53% said that they observed a white coating on their tongue and was more prevalent in age group 18-30 and 31-45 years. Chaehoon Lee *et al*¹⁷ in his research on halitosis concluded that volatile sulphide compounds produced by tongue coatings played a major role in severity of oral malodor. This strong relation is because the dorsum of the tongue is the ideal niche for oral bacteria. Brushing of the tongue is more effective in preventing halitosis and further oral diseases than the brushing of teeth.

About the dental checkups, 46% of all the people had never gone for dental checkups. This will increase the risk of oral diseases if prevalent. Among the people who visited, the age groups 10-17, 18-30 and 31-45 had 28% visiting once in a year. Not more than 9% of the people visited the dentist for more than once in 3 months.

Smoking, alcohol or chewing tobacco also contribute to halitosis. When they were questioned about the unusual taste

got after eating strong flavored foods like onion and garlic, about 37% of the people felt that sometimes. The age group 18-30 felt this very frequently. This is because because halitosis is induced due to raw onion and garlic containing high concentrations of sulphur which can pass through the lining of intestine into the bloodstream, and subsequently be released into the lungs and then exhaled according to Lee *et al*¹⁷. Xiao-Jia *et al*¹⁸ so found direct correlation of garlic/onion with halitosis. He suggested ingestion of garlic (*Allium Satium*) is well known to cause bad breath comes from lungs not from particles retained in the mouth.

About 34% of the people drink tea or coffee at least once a day. Although various researches like from X.xuy *et al*¹⁹ and Lodhia *et al*²⁰ suggested catechins in tea extracts acting as natural suppressors of oral malodour, the milk in tea can aggravate halitosis. Also, high sulphur content in coffee cause the bacteria to break down these producing mouth odor. Other medical problems relating to gastro-intestinal, respiratory, kidney and liver can be caused in severe cases of halitosis. This was seen more in the age group of 18-30. Mouthwash usage was also only 22% among all the people. About 42% of the people felt embarrassed among the people due to mouth odor.

Coming to the question of they being aware of halitosis, it's causes and consequences, among people who knew - 76% were from the age group 18-30 and only 4% in above 45 years age group; 63% were females being aware of it.

CONCLUSION

The results obtained show that the most vulnerable to majority of factors like xerostomia, white coating, medical problems was the age group: 18-30 and more common among the females inspite of they being more aware of it. The less prone to these factors are the once above 45 years of age. Halitosis makes the person feel embarrassed and isolated. It might also create psychological problems in severe cases. Therefore, long term support and encouragement should be given by the society. Also, to the people who are now starting to get aware of this, should inculcate good oral hygiene practices to have an improvement in their quality of life.

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