

Prevalence of Halitosis Among Students of Chandka Medical College, Larkana

Prevalence of Halitosis Among Students

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ABSTRACT

Objective: To assess prevalence and knowledge about halitosis among MBBS students at Chandka Medical College Larkana, Sindh, Pakistan.

Study Design: Quantitative / descriptive / cross-sectional study

Place and Duration of Study: This study was conducted at the Chandka Medical College Larkana, Sindh, Pakistan from March 2020 to May 2020 for a period of 3 months.

Materials and Methods: A questionnaire based study was carried out on a total of 700 3rd, 4th, final year students of MBBS. Inferential statistical tests (Chi-square, pearson) were administered using IBM SPSS v22.

Results: 42.38% respondents having prevalence of malodor. Among those who had prevalence of bad breath, approximately half (56.33%) were self-aware of their bad breath. Among 335 respondents, 80.59% were aware that they should visit a dentist whereas majority were unaware of the medical term for bad breath i.e. meaning of Halitosis (65.67%, n=220). More than half of the respondents (61.79%) identified teeth & gum disease as the main cause of bad breath. The majority students reported using mouth washes and brushing their teeth twice a day.

Conclusion: The prevalence of halitosis among the students of Chandka Medical College was found to be 42.38 %.

Key Words: Halitosis, Oral Hygiene, Awareness, Medical Students

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INTRODUCTION

Halitosis is an offensive smell expelled out from oral cavity regardless of the root cause.⁽¹⁾ Halitosis, oral malodor, and bad breath can be used interchangeably.⁽²⁾ It is multifactorial and involves extra oral and intraoral causes.⁽³⁾ It occurs due to the putrefactive activities of gram negative anaerobic bacteria commonly in the dorso-posterior part of the tongue⁽⁴⁾. Oral cavity related problems such as tongue coating, periodontal diseases⁽⁵⁾, xerostomia⁽⁶⁾, dentures⁽⁷⁾, mucosal lesions⁽⁸⁾ are more common causes of halitosis whereas extra-oral causes like disorders of the respiratory tract⁽⁹⁾, gastrointestinal tract⁽¹⁰⁾, endocrinological disturbances⁽¹¹⁾ and side effects of certain medications also contribute to halitosis⁽¹²⁾.

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Smoking habits, behavior towards the oral hygiene habits plays important role towards its production in oral cavity⁽¹³⁾.

Halitosis is a universal medico-social problem⁽¹⁴⁾. Majority of the individuals face social embarrassment, phobias, depressions that may have a deleterious effect on an individual's self-esteem⁽¹⁵⁾. Halitosis is an important issue for young people, and that a large part of the young population sees tongue cleaning as a part of oral hygiene and intraoral change as cause of halitosis⁽¹⁶⁾. It is a common oral health problem around the globe⁽¹⁷⁾. The prevalence of halitosis was indicated by various studies such as 42% in Lahore Pakistan⁽¹⁸⁾ 7.14% in students of university of Kathmandu, Nepal⁽¹⁹⁾ 22% in France⁽²⁰⁾, 41.1% in China⁽¹⁴⁾, 44.6% in India⁽²¹⁾, 59.9 % in Saudi Arabia⁽²²⁾ and in my study 57.2% in attitude and practice towards halitosis among medical students of Chandka Medical College Larkana, Sindh, Pakistan.

MATERIALS AND METHODS

The study is a quantitative, descriptive, cross-sectional design. Sampling strategy used was nonprobability convenience sampling. Required sample size was calculated using NCSS⁽²³⁾ calculator and required sample size was 295. Ethical review was obtained from Institutional Review Committee of Shaheed Mohtarma Benazir Bhutto Medical University, Larkana. Participating students were explained the objectives of

the study and written informed consent was obtained from each respondent.

The questionnaire for data collection is based on a standard tool which was developed for halitosis prevalence at the Halitosis Clinic of University of Basel, Switzerland⁽²⁴⁾. Additional items used in the questionnaire for data collection were harvested from previous studies conducted for finding prevalence of halitosis⁽¹⁷⁾. The tool was reviewed for face and content validity by subject and linguistic experts, while Cronbach alpha ($r=0.81$) demonstrated reliability.

The survey was administered in March 2020. A total of 335 students of MBBS responded through the filled questionnaires; respondents were studying in 3rd, 4th and 5th year at Chandka Medical College Larkana, Sindh, Pakistan.

Resulting data was transcribed manually and analyzed using IBM Statistical Package for Social Sciences (SPSS) version 22.0, Minitab software, Microsoft excel for descriptive (frequency, percentage, mean, median, standard deviation) and inferential statistics (chi-square and Pearson correlation coefficient).

RESULTS

Responses were obtained from three hundred and thirty-five participants. Table 1 elucidates the socio-demographic characteristics of the respondents; mean age was 22.95(± 1.21).

Table No.1: Socio-demographic characteristics of the respondents

Variables	Frequency	Percentage
Age in years		
>23	159	47.5 %
≤23	176	52.5 %
GENDER		
MALE	190	56.7 %
FEMALE	145	43.3 %

Table 2 shows the medical history of the respondents related to halitosis; among them almost 32.72% had medical history. 41.7% (n=140) had health issues related to the oral cavity. A minority of the respondents (13.43%, n=45) reported a habit of smoking.

Table 3 illustrates 42.38% respondents having prevalence of malodor (n=142). Among those who had prevalence of bad breath, approximately half (56.33%, n=80) were self-aware of their bad breath, whereas 43.66% (n=62) responded that somebody else noticed their breath having bad odor. Those suffering from the condition for more than a year were 38.73% (n=55), while majority noticed bad breath less than one year ago (61.26%, n=87). Among 335 respondents, 80.59% (n=270) were aware that they should visit a dentist whereas majority were unaware of the medical term for bad breath i.e. meaning of Halitosis (65.67%, n=220). More than half of the respondents (61.79%, n=207) identified teeth & gum disease as the main cause of bad breath.

Table No.2: Medical history of the respondents related to halitosis

Variables	Frequency	Percentage
Gastrointestinal Disease		
Yes	37	11.04%
No	298	88.95%
Lungs Disease		
Yes	12	0.35%
No	323	96.41%
Sinusitis		
Yes	27	0.80%
No	308	91.94%
Nasal Problems		
Yes	23	6.86%
No	312	93.13%
Liver Disease		
Yes	06	0.18%
No	329	98.2%
Diabetes Mellitus		
Yes	05	0.15%
No	330	98.5%
Smoking Habits		
Yes	45	13.43%
No	290	86.56%
Oral Cavity (Cavities, Gums Problems)		
Yes	140	41.7%
No	195	58.2%

Table No.3: Respondents having prevalence of malodor

Question Statements	Answer Frequency	Percentage
Have you problem of bad breath?		
Yes	142	42.38%
No	193	82.98%
Who noticed bad breath from your mouth? (n=57)		
Myself	80	56.33%
Other person	62	43.66%
How long before you noticed it?		
<1 year	87	61.26%
>1 year	55	38.73%
To which professional you prefer to visit for bad breath problem?		
Dentist	270	80.59%
Gastroenterologist	25	7.46%
ENT Specialist	12	3.58%
Physician	23	6.86%
Do you Know the term Halitosis?		
Yes	105	31.34%
No	220	65.67%
Which factor you think is the cause of bad breath?		
Bad odour food onion, garlic etc.		
Yes	159	47.46%
Teeth or gum problem		
Yes	207	61.79%
Gastric problem		
Yes	189	56.41%
Nasal or pulmonary problem		
Yes	120	35.82%

Table No.4: Oral hygiene habits of respondents

Statement	Response	Frequency	% age
Do you practice interdental flossing?	Yes	34	10.1
	No	301	89.9
Do you use mouth wash?	Yes	120	35.7
	No	215	64.3
Do you brush your teeth twice a day?	Yes	295	88.1
	No	40	11.9

Table 4 illustrates the self-reported oral hygiene habits of respondents. The majority students reported brushing their teeth twice a day (88.1%, n=295) but did not practice interdental flossing (89.9%, n=301). Approximately only one third students reported using mouthwash for oral hygiene (35.7%, n=120).

DISCUSSION

This study was conducted to assess prevalence and knowledge about halitosis among MBBS students. A similar study was conducted at Sharif Medical & Dental College, Lahore, Pakistan⁽¹⁸⁾. In this study, when asked from the participants, 42% of the respondents stated 'bad breath' as a 'foul' which is comparable to studies done in India (43%). Various studies conducted in different parts of the world reported vastly different findings (75.1%) in a study done in Lahore⁽²⁵⁾, 25.8% in Saudi Arabia, Japan (44.9%), Nigeria (75%), Rwanda (23.1%)^(21, 26, 27, 28).

In our study most of the students responded that dentists are the first professionals to treat halitosis which corresponds to the study done by RT Firmino⁽²⁹⁾. Students further responded that consultation with Gastroenterologist might be helpful⁽³⁰⁾. Some of the socio-demographic characteristics also effects the prevalence and attitude towards the preventive measures against the halitosis like 50% elderly reported with halitosis in study of M Zellmer⁽³¹⁾ and in the study of SP Mehta⁽³²⁾ about 43% youngsters reported with halitosis. These findings were found to be consistent with a study done by Kim et al⁽³³⁾ in Korea in which published that age and gender were significantly associated with halitosis but residence area was not a significant influencing variables for it. While a contradictory finding was reported by Alshehri in Saudi Arabia which showed none of the socio-demographic characteristics (age, sex, and marital status) were associated with halitosis^{34,35,36}. Therefore, it can be said that difference of living standard, knowledge and communities has great impact on prevalence of halitosis in a society.

One of the studies reported smoking as a cause, is influencing prevalence of halitosis among undergraduate medical students⁽³⁷⁾. This finding correlates with the study of R.D Cannon⁽³⁸⁾. In study of Kermanshah High School Students⁽³⁸⁾ around one third participants do tooth brushing twice a day while almost the same proportion

had the habit of using mouth wash and dental floss. A study done in Lebanon revealed nearly two third of dentist had insufficient knowledge about management of halitosis⁽²⁰⁾. In survey done at Junior College and Dental College Students in Navi Mumbai (64%) did tooth brushing twice a day, (60%) used mouth wash and the resultant prevalence of malodour was 21%⁽³²⁾. This finding went along with a study of Sabina Herman⁽⁸⁾, a survey done in China⁽¹⁴⁾ 26.3% participants had tongue cleaning habits. Similarly, other surveys reported different finding regarding tongue cleaning as in Saudi Arabia (13%), India (10%)^(21,26). Thus from the studies above it can be concluded that good oral hygiene habits like tooth brushing, using dental floss and mouth wash can mask the actual prevalence of halitosis.

This may be probably due to social stigma linked with bad breath⁽³⁹⁾. The total score of knowledge, attitude and practice regarding halitosis was strongly positive correlated with each other which is statistically highly significant at $p < 0.001$.

CONCLUSION

The prevalence of halitosis among the students of Chandka Medical College was found to be 42.38%. Most of the Medical students were not mindful of etiological factors for malodour and about its available options for treatment. Hence it is suggested to impart fundamentals of dentistry to medical students, which will be of assistance in long term to ascertain a need for interdisciplinary approach for management of bad breath resulting in prevention of needless treatments opted. No correlation to systemic/oral diseases or demographic factors was established.

Author's Contribution:

Concept & Design of Study:	Abdul Mateen
Drafting:	Abdul Qadir, Nabila Shaikh, Muhammad Wajahat Ghafoor
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Final Approval of version:	Abdul Mateen

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