

Prevalence of Halitosis among Orthodontics Patients

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ABSTRACT

Aim: To evaluate prevalence and knowledge about halitosis among the patients visiting orthodontic department after application of Orthodontics appliances.

Study design: Cross-sectional study

Place and duration of study: Department of Orthodontics, Bacha Khan College of Dentistry, Mardan from 1st October 2020 to 30th September 2021.

Methodology: A questionnaire based study was carried out on a total of 700 orthodontic patients. Only those patients were included who had orthodontic appliances.

Results: 52.30% of the respondents were having prevalence of bad breath. Among those who had prevalence of bad breath, approximately two third (73%) were self-aware of their bad breath. 530 (75.71%) were conscious that they should appointment a dentist while majority were uninformed of the medical term for bad breath i.e. meaning of Halitosis 470 (67.15%).

Conclusion: The frequency of halitosis amongst the patients was found to be 52.30%.

Keywords: Halitosis, Oral Hygiene, Awareness, Oral health status, Oral malodor

INTRODUCTION

The term halitosis states to an odor considered unpleasant or offensive to others that discharges from the oral cavity, regardless of the root cause; it is also known as oral malodor or 'bad breath'.¹ It is multifactorial and involves extra oral and intraoral causes. In most individuals with persistent malodor, the odor is caused by an oral source; putrefactive actions of gram negative anaerobic bacteria commonly in the dorso-posterior part of the tongue.² Nearly 80% of halitosis initiates from intra-oral causes.³ Oral cavity associated complications such as tongue coating, mucosal lesions.³ Other intra-oral features such as fixed orthodontic brackets⁴ as well as periodontal diseases⁵, dentures⁶, xerostomia⁷, are more common causes of halitosis whereas extra-oral causes like complaints of the gastrointestinal tract⁸, respiratory tract⁹, endo-cranialogical disturbances¹⁰ and side effects of certain medications also add to halitosis.¹¹

One of the most common risk factors for dental plaque growth and periodontal complications is malocclusion. It is generally acknowledged that orthodontic management of malocclusion eases favourable situations to conserve oral hygiene.¹² Though, during the treatment time, arch wires, fixed brackets, and other gears obstruct oral hygiene capacities, therefore ornamental plaque attachment, or even lead to periodontitis.¹³ Currently, some researchers have stated that fixed orthodontic applications can upsurge halitosis, and that bad breath should be observed as one of possible side effects of orthodontic treatments.¹⁴

Halitosis is a vital concern for young people, and is a common oral health problem around the world.¹⁵ The frequency of halitosis was showed by numerous studies such as 41.1% in China¹⁶, 44.6% in India¹⁷, 7.14% in students of university of Kathmandu, Nepal¹⁹, 59.9% in Saudi Arabia²⁰, 22% in France²⁰ and 42% in Lahore Pakistan.²¹

The purpose of this study was to evaluate prevalence and knowledge about halitosis among the patients visiting orthodontic department after application of orthodontic appliances.

MATERIALS AND METHODS

The study is a cross-sectional design comprised 700 patients. Ethical approval was attained from Institutional Review Committee of the institution. Only those patients were included in the study that had orthodontic appliances from the Department of

Orthodontic Bacha Khan College of dentistry, Mardan. All patients were described the aim of the study and written knowledgeable agreement was acquired from each participant. The survey for data collection is based on a standard tool which was established for halitosis prevalence, at the Halitosis Clinic of University of Basel, Switzerland.²² Supplementary objects used in the form for data collection were reaped from former studies piloted for finding frequency of halitosis.¹⁵ The data was entered and analyzed through SPSS-22.

RESULTS

Socio-demographic features of the patients and means age was 22.15±1.39 years was shown in Table 1.

Table 1: Socio-demographic characteristics of the respondents

Variables	No.	%
Age (years)		
< 23	457	65.28%
> 23	243	34.72%
Gender		
Male	270	38.57%
Female	430	61.43%

Table 2: Medical history of participants

Variable	No.	%
Gastrointestinal Disease		
Yes	120	17.14
No	580	82.86
Sinusitis		
Yes	40	5.71
No	660	94.29
Liver Disease		
Yes	61	8.71
No	639	91.29
Nasal Problems		
Yes	230	32.85
No	470	67.15
Diabetes Mellitus		
Yes	225	32.14
No	475	67.86
Lungs Disease		
Yes	30	4.28
No	670	95.72
Smoking Habits		
Yes	298	42.57
No	402	57.43
Oral Cavity (Cavities, Gums Problems)		
Yes	370	52.86
No	330	47.14

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Table 2 displayed the medical history of the participants associated to halitosis; amongst them 20.50% had some type of medical history. Three hundred and seventy (52.86%) had health problems associated to the oral cavity.

Three hundred and sixty six (52.30%) participants having frequency of malodor having orthodontic appliances. Amongst those who had frequency of halitosis, almost two third (73%) were self-aware of their halitosis, while 99 (27%) answered that someone else observed their exhalation having bad odor. Five hundred and thirty (75.71%) were conscious that they should see a dentist though majority were uninformed of the medical term for bad breath i.e. meaning of Halitosis 470 (67.15%). The majority patients testified brushing their teeth twice daily 639 (91.30%). Approximately one third patients responded using mouthwash for oral hygiene 230 ((32.85%). However maximum did not exercise inter dental flossing 630 ((90%) [Table 3].

Table 3: Prevalence of Halitosis and oral hygiene habits

Variables	No.	%
Have Problem of halitosis?		
Yes	366	52.30
No	344	47.70
Who noticed bad breath from your mouth?		
Self	267	73.0
Someone else	99	27.0
To whom you prefer to visit for halitosis problem? If you had to.		
Dentist	530	75.71
ENT Specialist	120	17.14
Gastroenterologist	50	7.15
Do you have any knowledge about the term Halitosis?		
Yes	470	67.15
No	230	32.85
Do you brush your teeth twice daily?		
Yes	639	91.30
No	61	8.70
Do you use mouth wash?		
Yes	230	32.85
No	470	67.15
Do you exercise inter-dental flossing?		
Yes	70	10.0
No	630	90.0

DISCUSSION

Fixed orthodontic appliances obstruct oral hygiene quantity and generate promising situations for plaque growth. Studies have verified that periodontal complications are one of the possible side effects of orthodontic treatment.¹⁶⁻²³

Current study was accompanied to evaluate frequency and knowledge about halitosis after orthodontic appliances. Halitosis is a vital concern for young people, and is a common oral health problem around the world.¹⁵ The frequency of halitosis was showed by numerous studies such as 41.1% in China¹⁶, 44.6% in India¹⁷, 7.14% in students of university of Kathmandu, Nepal¹⁹, 59.9 % in Saudi Arabia²⁰, 22% in France²⁰ and 42% in Lahore Pakistan.²¹

In current study most of the patients responded that dentists are the first professionals to treat halitosis which corresponds to the study done by RT Firmino²⁴.

In study completed at Dental College in Mumbai (64%) did tooth brushing twice daily, (60%) used mouth wash and the resultant frequency of malodor was 21%. This finding went along with a study of Sabina Herman, a study done in China¹⁶ 26.3% participants had tongue cleaning habits. Correspondingly, other studies stated different finding regarding tongue cleaning as in Saudi Arabia (13%)²⁰, India (10%).¹⁷ Thus from these studies it can be determined that good oral hygiene habits like tooth brushing, using dental floss and mouth wash can façade the actual frequency of halitosis problem in the general population.

CONCLUSION

The frequency of halitosis among the patients of Orthodontic department was found to be 52.30%. Most of them were not aware of etiological factors for malodor and about its available options for treatment i.e. mouth washes or dental floss.

Conflict of interest: Nil

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