Original Research Article

Assessment of oral health problems among patients attending tertiary health care centre in Mumbai

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Abstract

Background: Oral health conditions are major public health concern affecting individual's quality of life. This study was conducted to assess type of oral and dental morbidities in patients visiting a general outpatient department (GOPD) of a tertiary care hospital and study factors associated with these morbidities.
Methods: Cross-sectional hospital-based study conducted among 400 adult patients with oral morbidities or dental morbidities, aged 18-49 years, attending a GOPD in a metropolitan city from September 2017 to September 2019.Simple random sampling was done.
Results: Majority of the participants belonged to 36-49 years of age and were males. Lesions of oral cavity were seen in 10.3% and dental morbidities were present in 92% study participants. Male sex, residence in urban area and addiction history were significantly associated with presence of oral morbidities. Perceived state of teeth and gums, frequency of cleaning teeth, cigarette smoking in the last six months were significantly associated with oral morbidities ($p<0.05$).
Conclusion: There is need for continued awareness regarding prevention of caries and periodontal disease with emphasis on diet and dental floss.

Keywords: Oral hygiene, dental caries, oral health epidemiology

Introduction

Dental and oral health is necessary part of our general health and well-being. Oral health conditions are major public health concern as they affect the individual's quality of life.[1]Regular oral hygiene habits like brushing, flossing etc. help in avoiding costly dental procedures and long-term health issues in future [2]. The most prevalent conditions are periodontal diseases, dental caries, malocclusion, oral cancer, oro-dental trauma, and oral manifestations of systemic illnesses [1, 3].
Risk factors for oral diseases are genetic predisposition, developmental problems (cleft lip and palate), poor oral hygiene, and traumatic incidents. Factors like poor education, poor living conditions, poor access to safe water or sanitary facilities and inappropriate fluoride exposure have also been implicated [4]. Many of these are preventable by providing oral health education; which in turn improves the oral health related attitude and practices among

the general population [3]. Prevention and control of oral disease depends on risk reduction, availability and accessibility of oral health systems [4].

The present study was conducted with the objectives of assessing type of oral and dental morbidities in patients visiting a general outpatient department (GOPD) of a tertiary care hospital and study socio-economic and demographic factors associated with these morbidities.

Materials and Methods

This cross-sectional hospital-based study was conducted among adult patients with oral morbidities or dental morbidities, aged 18-49 years, attending a GOPD in a metropolitan city from September 2017 to September 2019. Since the estimated prevalence of oral morbidity among this age group was not available, prevalence was taken as 50%. Using the formula, $n=z^2P(1-P)/e^2$ with P=0.50 and relative precision (e) of 10 percentage points at 95% confidence interval, sample size comes up to 400. Simple random sampling was done to till the required number was reached. Ethical clearance (EC/193/2017) was obtained and written informed consent was taken from all participants. A pre-validated, semi-structured questionnaire was used. Data analysis was done in SPSS version 22.0 (IBM).

Results

This cross-sectional study conducted on 400 patients visiting the General OPD of a tertiary care centre, yielded the following results-Majority of the participants belonged to 36-49 years of age and were males. The baseline characteristics are given in Table 1. Lesions of oral cavity were seen in 41 (10.3%) and dental morbidities were present in 368 (92%) study participants (Table 2).

Oral hygiene and cleaning practices: Most of the study participants, i.e., 342 (85.5%) used toothbrush with toothpaste for cleaning teeth, followed by cleaning with a twig/toothpowder or using fingers (43 participants, 10.75%) and toothpick (15 participants, 3.75%). The frequency of cleaning teeth was 'less than daily' in majority of the study participants, i.e., 299 (74.75%) followed by daily once in 101 (25.25%) participants. About 155 (38.75%) gave history of cigarette smoking in the last 6 months and 264 (66%) participants had not visited a dentist in the last six months preceding the study. Perceived state of teeth and gums was 'very poor' in 85 (21.25%) participants, 'poor' in 112 (28%) participants, 'average' in 132 (33%) and 'good' in 71 (17.75%) participants. Association of these variables with oral and dental morbidities is given in Table 3. Perceived state of teeth and gums, frequency of cleaning teeth, cigarette smoking in the last six months were significantly associated with oral morbidities ($p<0.05$). Perceived state of teeth and gums and cigarette smoking in the last six months were significantly associated with dental morbidities ($p<0.05$).

Association of socio-epidemiological profile with oral and dental morbidities: On applying Chi-square test, it was found that, male sex ($\chi 2= 5.0$, p=0.02) residence in urban area ($\chi 2= 40.4$, p= 0.001) and addiction history ($\chi 2= 51.23$, p= 0.005) were significantly associated with presence of oral morbidities. None of the socio-demographic variables were found significantly associated with presence of dental morbidities.

Table 1: Baseline characteristics of study participants

Baseline characteristics		Number (N=400)	Percentage
Age (in years)	18 - 25	63	16.00
	26 - 35	129	32.00
	36 - 49	208	52.00

Sex	Male	217	54.25
	Female	183	45.75
Religion	Hindu	276	69
	Muslim	82	20.5
	Christian	39	9.8
	Others	3	0.8
Educational status	Illiterate	37	9.3
	Primary	79	19.8
	Secondary	173	43.3
	Higher secondary	76	19.0
	Graduate and above	35	8.8
Socio economic status (B G Prasad classification-2020)	Lower class	24	6
	Lower middle class	96	24
	Middle Class	148	37
	Upper Middle Class	108	27
	Upper Class	24	6
Occupation	Housewife	141	35.3
	Labourer	68	17.0
	Land owner	1	0.3
	Self-employed	124	31.0
	Clerical job	3	0.8
	Service	33	8.3
	Professional	2	0.5
	Student	28	7.0
Family type	Nuclear	318	79.5
	Joint	80	20
	Three generation	2	0.5
Type of residence	Urban	299	74.7
	Rural	101	25.3
Addiction history	Tobacco chewing	159	39.8
	Smoking	132	33.1
	Gutkha	26	6.5
	Masheri	15	3.75
	Betel Nut chewing	48	12.0
	Alcohol	14	3.5
	No addiction	6	1.5

Table 2: Prevalence of oral lesions among study participants

Oral lesions	Number	Percentage
Lesions in Oral Cavity		
Leukoplakia	15	3.75
Oral submucous fibrosis (SMF)	23	5.75
Lichen planus	2	0.5
Erythroplakia	1	0.25
Dental Morbidities		
Gingivitis	162	40.5
Periodontitis	273	68.25
Malocclusion	103	25.7
Dental caries	209	52.2

Table 3: Association of state of oral hygiene and cleaning practices with oral and dental morbidities

State of oral hygiene and cleaning practice		Oral morbidities		Dental morbidities	
		Present	P-value	Present	P-value
Perceived State of teeth and gums	Very poor	9 (2.25%)	χ2= 5.08 P= 0.02	77 (19.25%)	χ2= 5.84 P = 0.01
	Poor	14 (3.5%)		105 (26.3%)	
	Average	12 (3.0%)		121 (30.3%)	
	Good	6 (1.5%)		65 (16.3%)	
Frequency of cleaning teeth	Less than daily	29 (7.25%)	χ2= 10.18 P = 0.02	276 (69.0%)	χ2= 3.23 P = 0.78
	Daily	12(3%)		92 (23%)	
Devices used for cleaning teeth	Toothbrush	36 (9.0%)	χ2= 0.28 P = 0.86	317 (79.3%)	χ2= 2.3 P = 0.31
	Toothpick	1 (0.3%)		14 (3.5%)	
	Others	4 (1.0%)		37 (9.3%)	
Dentist visit	Never/no visit in last 6 months	31 (7.75%)	χ2= 3.4 P = 0.2	243 (60.75%)	χ2= 9.2 P = 0.01
	At least 1 visit in last 6 months/Frequent visits	10 (2.5%)		125 (31.25%)	
Cigarette smoking in last 6 months	Yes	28 (7.0%)	χ2= 18.1 P = 0.001	147 (36.75%)	χ2= 18.1 P = 0.003
	No	13 (3.25%)		221 (55.25%)	

Discussion

This study conducted among 400 adult patients with oral morbidities or dental morbidities assessed the oral hygiene and cleaning practices and its association with the morbidities. Majority of the participants in our study belonged to 36-49 years of age and were males. Studies in the past have also reported that oral morbidities or dental morbidities have higher male preponderance [5, 6].

Lesions of oral cavity were seen in 41 (10.3%) study participants, of which, 15 (3.75%) had leucoplakia, 23 (5.75%) had oral submucous fibrosis, 2(0.5%) had Lichen planus and one (0.25%) participant had Erythroplakia. Dental morbidities were present in 368 (92%) study participants, of which, 162 (40.5%) had gingivitis, 273 (68.25%) had periodontitis, 103(25.7%) had malocclusion and 209(52.2%) had dental caries. A similar study by Doifode et al., [7] in Nagpur, Maharashtra, reported 43.2% prevalence of dental caries, 34.8% prevalence of periodontal disease, 24.2% of dento facial anomaly, 18.7% of opacities and enamel disorders, 7.1% prevalence of oral mucosal lesions and 2.4% prevalence of oral precancerous lesions (2.4%). Another study by Peterson et al., [8] also shows high prevalence of dental and oral diseases. They reported prevalence of dental caries as 100% among the adults, severe periodontitis as 5-10%, and oral pre-malignant lesion between 1.1%-3.6% in various geographical locations globally.

We found that, 98.5% of the study participants had some form of addiction- tobacco chewing (38.8%), gutkha (6.5%), masheri (3.75%), smoking (33.1%), and alcohol (3.5%). The proportion is higher as compared to studies done previously, viz. Ghosh et al., [9] who reported 55.6% study population addicted to some form of tobacco and Kulkarni Rajesh [10], who reported 38.7% addicted to the habit of chewing gutkha, 32.8% pan masala and 28.4% betel quid. Similar to our study, Ghosh et al., [9] Patro et al., [11] Kulkarni et al., [10] Kaur et al., [12] reported statistically significant association between addiction to any form to tobacco and oral morbidities.

Proper and regular hygiene practices help in preventing oral and dental morbidities [13, 14]. In our study, about 85.5% of the study participants, used toothbrush with toothpaste for cleaning teeth, followed by cleaning with a twig/toothpowder or using fingers (10.75%) and toothpick (3.75%). The frequency of cleaning teeth was 'less than daily' in 74.75% of the study participants, followed by daily once in 25.25% participants. About 38.75% gave history of cigarette smoking in the last 6 months and 66% participants had not visited a dentist in the

last six months preceding the study. Perceived state of teeth and gums was 'very poor' in 21.25% participants, 'poor' in 28% participants, 'average' in 33% and 'good' in 17.75% participants. Paul et al., [15] Jain et al., [16] and Oberoi et al., [17] reported that toothbrush and toothpaste use were most commonly used method of teeth cleaning (69.20%) Ghosh et al., [9] and Paul et al., [15] reported that oral morbidities were significantly associated with factors like poor oral hygiene, intake of sweet/junk foods. Sharma et al., [18] and Fisher et al., [19] have reported that less frequency of dental visits due to any reason increase dental morbidities. Therefore, awareness regarding oral hygiene with continuous emphasis on brushing, flossing, good diet and quitting of tobacco addiction/smoking is needed [5, 20, 18].

Conclusion

Oral morbidities and dental morbidities have higher male preponderance. Lesions of oral cavity and dental morbidities were seen in 10.3% and 92% of study participants respectively. Male sex, residence in urban area, addiction history perceived state of teeth and gums, frequency of cleaning teeth, frequency of dentist visits and cigarette smoking in last 6 months were significantly associated with oral and dental morbidities. This highlights the need for continued awareness regarding prevention of caries and periodontal disease with emphasis on diet and dental floss.

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