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Oral hygiene awareness and oral health services utilization among patients visiting a dental hospital of Bhubaneswar city

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Abstract---Introduction: The objective of the study is to evaluate the oral hygiene awareness and the utilization of oral health services by the patients visiting dental OPD of Kalinga Institute of Dental sciences, Bhubaneswar. Methods: A cross sectional based study was conducted among 204 patients .A structured self-administered questionnaire was employed as the instrument for data collection. Statistical analysis was done using SPSS version 26.0 using Chi square test.The Confidence Level and the Level of Significance were set at 95% and 5%, respectively. Results: In our study females were

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29.4% (n=60) and 70.6% (n=144) were males. In the study maximum number of participants were found to be in the age range of 21-30 years with 56.9% (n=116) followed by age range of 31-40 years with 13.2% (n=27). Conclusion: The current study reveals a lack of knowledge about oral health among patients visiting dental OPD. Thus there is an urgent need for comprehensive educational programs to promote good oral hygiene and impart education about correct oral hygiene practices.

Keywords---Oral Health, Occupation, Utilisation, Dental Care, Awareness.

Introduction

Oral health has a significant impact on the quality of life, appearance, and selfesteem of the people. Preventive dental visits help in the early detection and treatment of oral diseases. Dental care utilization can be defined as the percentage of the population who access dental services over a specified period of time. There are reports that dental patients only visit the dentist when in pain and never bother to return for follow-up in most cases. [1] Oral health is an integral component of our overall wellbeing because the oral cavity is the doorway to the body. Oral health becomes all the more necessary because of the aesthetic nature and social value it commands. Further, the care given to this part of the body may prevent several diseases. Oral health as defined by the World Health Organization (WHO) [2] is "a state of being free from mouth and facial pain, oral and throat cancer, oral infection and sores, periodontal (gum) disease, tooth decay, tooth loss and other disorders that limit an individual's capacity in biting, chewing, smiling, speaking and psychosocial wellbeing". It is evident from this definition that oral health is an aspect of health affecting the general health and wellbeing of an individual.[3]

Genetic predispositions, developmental issues, poor oral hygiene, and traumatic occurrences are all possible etiological factors that lead to various oral disorders[4]. A lot of factors influence oral hygiene habits and the need for dental treatment. When patients are informed and favourably reinforced, they are more likely to follow oral hygiene regimens. One factor for non-compliance with oral hygiene routines is the lack of information. Furthermore, attitudes and ideas about oral health play a role in oral health behaviour. To maintain a healthy oral profile, the dentist and the patient must collaborate.[5]

Although cross-sectional research indicates only a modest relationship between knowledge and behaviour, studies have shown a link between knowledge and better oral health. Despite the fact that numerous studies have been conducted from time to time to examine population's oral health knowledge and behaviour, there is still a lack of education in this area, particularly among rural people, who account for more than 70% of India's population.Furthermore, despite having easy access to dental treatment, even city dwellers are susceptible to oral illness as a result of poor eating habits and an unhealthy lifestyle.[6] In Bhubaneswar city, based on a previously conducted oral health survey, the prevalence rates of dental caries and periodontal diseases range from 4.13 ± 0.73 and 1.03 ± 0.08 .[7] Other studies also show bleeding on probing to be 13.3% and total caries prevalence to be 19.3%. [8]Thus, improving oral health in this population will be very critical in promoting good health. This study therefore aimed to determine the oral hygiene awareness and utilization of oral healthcare services by patients visiting the dental OPD of a tertiary hospital.

Methodology

A cross-sectional questionnaire-based survey was conducted among the 204 study participants for a duration of three months from January 2022 to March 2022 attending OPD of Kalinga Institute of Dental Sciences, Bhubaneswar. The sample size was calculated using the formula: n = z2pq/d2, where n is the sample size, p the prevalence of disease, q those free from disease, d the allowable error and z a point on the normal deviation. Upon calculating, the n required was found to be 192 and in order to cover for the non-respondents a total of 204 subjects were examined during the study.

A self-structured 17 item questionnaire regarding oral hygiene awareness and oral health services utilisation was used. A pilot study was conducted to check the feasibility and validation of the questionnaire. The validity of the questionnaire was checked by a panel of five subject experts and modifications were made accordingly before the start of the study. Training and calibration of the investigator and the assistant were done in the Department of Oral Medicine, Kalinga Institute of Dental Sciences. The Cronbach's a value was calculated to 0.98 which denoted excellent reliability.

The questionnaire was distributed among the study participants by the investigator. While the questionnaires were being filled out, one of the investigators was present with the respondent at all times to ensure that the concerned respondent did not discuss the questions or answers with any other patients in the waiting area, and to ensure that the concerned respondent fully understood the questions and possible answers. Following the delivery of the questionnaire, participants were given 10 minutes to complete it. Statistical analysis was performed on the results. All the patients visiting the OPD and giving written informed consent were included in the study. Participants who did not give informed consent or incomplete questionnaires were excluded from the study. Data were entered in Microsoft Excel sheet and analysis was done using ('SPSS Statistics for Windows, version 26. 0 (SPSS Inc., Chicago, Ill., USA)'. Inferential statistics were performed using the Chi-square test. Categorical variables were described using frequency and percentages. The level of statistical significance was set at 0.05.

Results

A total of 204 participants consented to the study, out of which, 70.6% (n=144) of the participants were male, and 29.4% (n=60) were female.(Figure 1) The study population also constituted of 13.7% doctors (n=28),18.1%, 7.4% engineers(n=37),12.7% worked in private sector(n=15), were student(n=26), 3.4%

were teachers(n=7), 19.6% worked in govt job, 15.2% were self employed and 9.8% were housewives(n=20)



Figure 1 Distribution of Study participants according to gender

The majority of the participants i.e 48.6% males(n=70) and 76.7% females (n=46) fall under the age group of 21-30 yrs. 8.3% males(n=12) and 5% females(n=3) are less than 20 years of age.16% males(n=23) and 6.7% females(n=4) lie in the age group of 31-40 years.5.6% males (n=8) and 1.7% females(n=1) fall in the age group of 41-50 years.13.2% males(n=19) and 8.3% females(n=5) are between 51-60 years. 8.3% males(n=12) and 1.7% females(n=1) are 61yrs and above.

The study population also constituted of 13.7% doctors (n=28),18.1%, 7.4% engineers(n=37),12.7 % worked in private sector(n=15), were student(n=26), 3.4% were teachers(n=7), 19.6% worked in govt job,15.2% were self employed and 9.8% were housewives(n=20).

Table 1 Sociodemographic details of the study participants according togender

Variables	Ger	nder
AGE	Male	<u>Female</u>
	<u>n(%)</u>	<u>n(%)</u>
Less than 20 years	12 (8.3)	3(5)
21-30 years	70(48.6)	46(76.7)
31-40 years	23(16)	4(6.7)
41-50 years	8(5.6)	1(1.7)
51-60 years	19(13.2)	5(8.3)
61 and above	12(8.3)	1(1.7)
OCCUPATION		
Doctor	18(12.5)	10(16.7)

Engineer	26(18.1)	11(18.3)
Private	14(9.7)	1(1.7)
Student	18(12.5)	8(13.3)
Teacher/Professor	6(4.2)	1(1.7)
Govt.Job	27 (18.8)	13 (21.7)
Business/Self Employed	20 (13.9)	11 (18.3)
None/Housewives	15(10.4)	5(8.3)
Total	144 (71)	60 (29)

Amongst the participants, 51.4% of males(n=74) and 71.7% of females(n=43) considered oral health to be very imp. 13.9% of males(n=20) and 3.3% of females(n=2) did not considered their oral health to be important. 50% of males and 68.3% of females brushed their teeth twice daily, while 49.3% males and 30% females brushed their teeth once a day. Majority of the population 64.6% males and 50% females used toothbrush and toothpaste to clean their teeth. 35.4% of males and 50% of females used dental floss as an interdental cleaning aids. 50.7% of males(n=73) and 30% females(n=18) used both vertical and horizontal motions to brush their teeth. 36.8% of males(n=53) and 58.3% females (n=35) considered the brand as an important factor while buying a new toothbrush. 31.9% of males (n=46) and 11.7% (n=7) considered price as the most important factor while buying a new toothbrush. 73.6% of males(n=106) and 71.7% of femlaes (n=42) brushed their teeth for approximately 2 minutes.3.5% of males(n=5) and 3.3% of females(n=2) brushed their teeth for 1/2 a minutes. 34% of males (n=49) and 45% of females (n=27) used motuhwash to control their mouth odour. 62.5% males(n=90) and 45% females(n=27) rinsed their mouth with plain water.

Awarene	ss/Practice	Ma	le	Fem	ale	Chi		
		n	%	n	%	square	df	p value
	Very imp	74	51.4%	43	71.7%	13.246	4	0.010*
Importance	Somewhat imp	36	25.0%	15	25.0%			
of oral	Not imp	20	13.9%	2	3.3%			
health in	Not at all imp	12	8.3%	0	0.0%			
your mouth	Don't know	2	1.4%	0	0.0%			
Frequency	Once a day	71	49.3%	18	30.0%	6.596	2	0.037*
of brushing	Twice a day	72	50.0%	41	68.3%			
	More than twice	1	0.7%	1	1.7%			
	a day							
Materials	Toothbrush	93	64.6%	30	50.0%	3.762	1	0.05*
used to	and toothpaste							
clean teeth								
	Toothbrush	51	35.4%	30	50.0%			
	Toothpaste							
	floss							
Frequency	Once in a	16	11.1%	9	15.0%	.598	2	.741
of changing	month							

Table 2 Oral hygiene awareness and practices among study participants

toothbrush	Once in three	105	72.9%	42	70.0%			
	months		1.5.00/		1 - 00/			
	Once in 6	23	16.0%	9	15.0%			
	months							
Technique	Vertical motion	21	14.6%	21	35.0%	12.642	2	.002*
used while	Vertical and	73	50.7%	18	30.0%			
tooth	horizontal							
brushing	motion							
	Vertical,	50	34.7%	21	35.0%			
	horizontal and							
	round motion							
Considerati	Brand	53	36.8%	35	58.3%	11.275	2	.004*
on while	Design	45	31.3%	18	30.0%			
buying	Price	46	31.9%	7	11.7%			
toothbrush								
Duration of	1/2 min	5	3.5%	2	3.3%	3.053	3	.384
brushing	1 min	18	12.5%	12	20.0%			
	2 mins	106	73.6%	43	71.7%			
	5 mins	15	10.4%	3	5.0%			
Brushing	Never	57	39.6%	12	20.0%	7306	2	.026*
teeth after	Sometimes	75	52.1%	42	70.0%			
meal	Always	12	8.3%	6	10.0%			
Control of	Regular rinse	90	62.5%	27	45.0%	6.977	2	.031*
mouth	with plain							
odour	water							
	Rinsing with	5	3.5%	6	10.0%			
	salty water							
	Using	49	34.0%	27	45.0%			
	mouthwash							
Embarrasse	Very often	6	4.2%	3	5.0%	9.116	4	0.05*
d because	Fairly often	16	11.1%	12	20.0%]		
of your oral	occasionally	75	52.1%	18	30.0%			
health	Hardly ever	34	23.6%	21	35.0%]		
problem	Never	13	9.0%	6	10.0%			

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*significant

Out of all the participants 50.0% of males (n=72) and 56.7% of females (n=34) visited the dental clinic atleast once a year, while 43.1% of males and 25% of females never visited a dental clinic. 47.9% of males (n=69) and 43.3% of females (n=26) got oral health checkup in less than 1 year but more than 3 months. 61.1% of males (n=88) and 58.3% of females(n=35) visited a dental clinic when they had a problem. 76.4% of males(n=110) and 66.7% of females(n=40) did not go to dental clinic because of lack of time, while 6.9% of males(n=10) and 21.7% of females(n=13) got oral health care when they needed.

Utilisation o	f Oral Health	N	/ Iale	F	emale	Chi		p
Services		n	%	n	%	square	df	value
Teeth clean	Never	62	43.1%	15	25.0%	9.357	2	.009*
by a dentist	Once in a	72	50.0%	34	56.7%			
-	year							
	Twice in a	10	6.9%	11	18.3%			
	year							
Visit dental	Once a year	23	16.0%	14	23.3%	9.563ª	3	.023*
clinic for	Two times a	40	27.8%	20	33.3%			
checking	year							
your teeth	More than	41	28.5%	21	35.0%			
	two times a							
	year							
	Never	40	27.8%	5	8.3%			
Last oral	Never visited	27	18.8%	3	5.0%	15.915ª	5	.007*
health	3 months or	20	13.9%	13	21.7%			
checkup	less							
	more than 3	69	47.9%	26	43.3%			
	months but							
	less than a							
	year							
	more than a	10	10.00/	10				
	yr but less	19	13.2%	16	26.7%			
	than 2 yrs	0	C 20/	1	1 70/			
	More than 2	9	0.3%	1	1.7%			
	years but							
	less than 5							
	More then 5	0	0.0%	1	1 70/			
	wears	0	0.070	1	1.770			
Reason for	For a regular	17	11.8%	12	20.0%	4 955a	4	202
last visit to	check up	17	11.070	14	20.070	1.900	•	.474
oral health	It was	3	2.1%	2	3.3%			
care	mandatory	Ŭ	2.170	4	0.070			
	for my office							
	Something	88	61.1%	35	58.3%			
	was wrong							
	or hurting							
	Went in for a	11	7.6%	6	10.0%			
	follow-up							
	Never visited	25	17.4%	5	8.3%	1		
Reason if	Could not	7	4.9%	1	1.7%	14.983	5	.010*
you were	afford					а		
unable to	Insurance	2	1.4%	3	5.0%			

Table 3 Oral health service utilization by the study participants (n=204)

ret oral	does	not				
get biai	uocs	1101				
health care	cover	oral				
	health car	re				
	Oral hea	alth	8	5.6%	3	5.0%
	care cer	ntre				
	is too far					
	Did not h	ave	110	76.4%	40	66.7%
	the time					
	Were af	raid	7	4.9%	0	0.0%
	to go					
	Got	oral	10	6.9%	13	21.7%
	health o	care				
	when nee	ded				

*significant

Discussion

The findings of this study support the widespread belief that dental hygiene is still an underappreciated and unaddressed major social issue. In India, preventive oral health education is in its infancy. Oral health promotion programmes aimed at the general public have yet to be introduced and followed. As a result, attempts were undertaken in this study to describe the investigated population's preventive oral heath knowledge, practice, and behaviour.

Our research revealed a paucity of knowledge about dental prevention and behaviour. Without adequate dental hygiene, bacteria can build up to the point where they cause oral infections including tooth decay and gum disease. Thus it is more likely to acquire significant oral problems and diseases if good oral hygiene is not practised. Cavities, gingivitis, periodontal disease, bruxism-related problems, broken tooth syndrome, and other ailments are among them.

In the present study,168 out of 204 participants were aware of oral hygiene, representing 82.3% of the study population. This findings is in contrast to the reports of Chandra shekhar et al. in Mysore where 100% of participants claimed they are aware of dental diseases.[9] Similar to the findings of Parveen et al. [10] and Dasgupta et al.[11]

The present study revealed that 54.4% of the participants brushed their teeth twice daily. According to the findings, 43.6% of participants brush their teeth once a day. In a comparable study, Dhanasekaran et al. looked at 538 persons and found that only 8.6% of those over 30 brushed their teeth twice a day, whereas 40% brushed once a day. [12] In this study, only 37.2 percent of the participants utilised mouthwash as an oral hygiene aid, which was similar to Jain et al.'s findings. [13]

Despite improved oral health awareness, it appears that people's attitudes toward dentistry have not changed significantly .This is reflected in our findings, which show that 22.05 percent of participants have never visited a dentist for a dental checkup or treatment, similar to Bashiru et al. [14], who found that 71.6 percent

of the 360 undergraduate students in southern Nigeria studied had never visited a dentist.

This study also examined the relationship between dental care utilisation and key demographic characteristics such as age, gender and occupation. Our study shows that male patients have utilized the dental services more than the female patients, which is in contrast to the higher rate of utilization by female patients reported in Jain et al.[15]

It has also been determined that more young and educated patients have used dental services, demonstrating the importance of education in oral health awareness. Visiting the dentist is solely dependent on the treatment requirements, it is not considered a preventive dental practice; at this time. According to the findings, approximately 60.2% of patients only went to the dentist when they had a problem, and only 8.3% of the population went to the dentist on a regular basis. These findings are comparable to those of Jain et al.[15], who found that 54 percent of people went to the dentist when they experienced pain.

The study has certain limitations.As this study is cross-sectional and the nature of data collection method cannot indicate causal effect. The present study was limited to a single hospital.Hence the results may vary and may not be applicable to the other colleges. Therefore, follow up studies are required to accurately investigate the oral hygiene awareness and oral health services utilization among patients.

Conclusion

The current study reveals a lack of appropriate oral health awareness. Furthermore, the majority of patients were unaware that dental health had an impact on overall health. As a result, it is necessary to educate and promote knowledge about good dental care and disease prevention through outreach programmes, and other relevant public health awareness measures, in order to create a healthy society. Despite the fact that oral health education is a relatively new discipline within dentistry, it is recommended that it begins at a young age, and be administered by skilled personnel, and be properly incorporated into overall health.

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