Survey on Public Perception Towards Oral Health and Oral Hygiene Practices in Muradnagar, India.

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Abstract :

Public perception towards oral health and oral hygiene practices plays an imperative role in planning dental care by Dental Professionals. **Aim:** To study and compare perception towards oral health and oral hygiene practices among patients attending outreach dental programs in rural areas of Muradnagar. **Materials and Method:** Cross Sectional survey was conducted on patients aged above 18 years who attended 28 rural outreach dental programs during April-June 2013, conducted by Public Health Dentistry Department, I.T.S Dental College, Muradnagar. 543 patients with participatory consent on explaining the purpose of study were recruited by convenient sampling method. Data was recorded in a pretested, validated, structured, close ended questionnaire through interview by 3 calibrated interviewers. The questionnaire included variables on socio demography, perception towards oral health and oral hygiene practices. Data was analysed by SPSS 18.0. Chi square test (p value < 0.05 at 95% CI as significant) analysed the association between variables. **Results: P**redominant perceptions were tooth extraction as the only remedy for painful tooth, followed by bleeding of gums as normal while tooth brushing in 68% and 65% of patients. Difference in perception towards oral health ($p<0.001$) and oral hygiene practices ($p< 0.01$) were found between age group and level of education. **Conclusion:** This study shows false public perception towards oral health and oral hygiene practices more noticeable in older age, illiterate and low socioeconomic class. Interventions to alleviate false perception towards oral health among public needs to be considered for narrowing the effort and effect gap in oral health promotion.

Keywords: Perception, Oral Health, Oral Hygiene Practices, Rural, Outreach Dental Programmes.

Introduction

Oral health goals 2020 targets on not only to increase the proportion of population with access to oral health care but also to increase the proportion of population with adequate information. Oral disease is the fourth most expensive disease to treat[1] in many low – income countries of the developing world, the total cost of traditional operative dental care would exceed the cost for entire health care.[2]

Perception is a process through which an individual becomes conscious about and interpret information regarding the situation, but the course of perception is essentially subjective in nature because it is not a precise reflection of the situation. Hence, a situation

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may be the same for two individuals but the interpretation of that situation by both of them may be immensely different.[3] Perceptions on need for dental care play a key role as to whether people in general will seek dental care and that lack of need perceptions constitutes an important barrier for utilization of health care services.[4,5] An individual's perception of oral health measures the value attached to oral health and the likelihood of seeking oral care to achieve optimal oral health status.[6]

In a country like India, most of the people are unaware of the existence of dental profession and those who are fortunately aware of the fact do not have information about various specialties in dentistry rendering different modalities of the treatment. The lack of awareness among public towards oral health besides lack of knowledge regarding what our profession can offer and the benefits they can reap out of it are the major hurdles and a lacuna for the success of primary prevention of oral diseases.

Villages, which constitute a large part of India should be given due attention for dental health education and awareness programmes to combat rural-urban disparities in oral health perception and dental care.[7] The deeply ingrained public perception that oral health is in some way less important and separate from general health needs to be evaluated timely as they hinder utilization of dental care by the patients despite delivery of dental care by oral health professionals through organized outreach dental programmes.

Interventions to overcome these false perceptions and beliefs can start at the grassroots level, which can then lead to a coordinated national movement aimed to increase oral health literacy of public to obtain, process, and understand basic oral health information and services which are needed to make appropriate health decisions. There was dearth of reported studies on public perception towards oral health and oral hygiene practices in the catchment area of our Dental College in Muradnagar. Hence forward, this community based survey was conducted to assess the perception towards oral health and oral hygiene practices of patients attending dental outreach programmes in rural areas of Muradnagar, Ghaziabad.

Materials & Method

A community based Cross sectional survey was conducted in different villages of Muradnagar during outreach dental programmes carried out by the Department of Public Health Dentistry, I.T.S – Dental College, Muradnagar Ghaziabad. A total of 46 outreach dental programs were conducted from April to June 2013. Out of which 28 outreach dental programs were conducted for providing oral health care to the people residing in rural areas. Pilot survey was conducted in the month of February 2013 on randomly selected patients attending outreach programs to check for the feasibility of present study.

On approval of the study protocol by the Institution authority for internal evaluation, this study was scheduled for implementation during the month of April-June 2013. The study group were recruited by employing convenience sampling method comprised of 543 patients aged 18 years and above a representative sample of rural populace who attended outreach dental programs for dental check-up / treatment conducted in rural areas of Muradnagar. The purpose of study was explained to study participants and those with

expressed consent to participate voluntarily were included.

A pretested, validated, structured, close ended questionnaire was prepared and data was recorded through structured interview by three calibrated interviewers. The questionnaire was designed in Hindi language based on the predominant perceptions of the local rural population elicited during pilot study and from previous reported studies. The questionnaire included socio demographic details of the participants like age, gender, education level and socioeconomic status including questions comprising on variables based on their perceptions towards oral health and their oral hygiene practices. The socioeconomic status determination of the study group was based on Modified Kuppuswamy Scale.[8]

The mean Kappa co-efficient values for inter-examiner reliability was found to be 0.88. Study participants were interviewed for 8-10 minutes by calibrated interviewer using the predesigned structured questionnaire and were instructed to respond only one relevant answer verbally for each question asked. The survey forms were rechecked to assess for any missing information.

Statistical Analysis

The statistical analysis was carried out in 2 steps. The data obtained was compiled systematically, transformed from a pre-coded proforma to Microsoft excel and a master table was prepared. Descriptive and inferential statistical analysis has been carried out in the present study. Results on continuous variables are presented as Mean ±SD (Min-Max) and categorical variables are presented in Numbers (%). Chi square test was employed to determine any association between the socio-demographic variables and the perceptions towards oral health and oral hygiene practices. The level of significance was fixed (p-value < 0.05 at 95% confidence level). The statistical software SPSS 18.0 was used for analysis of the data.

Results

Response of 543 patients recorded in the questionnaire were analysed. The mean age of the study participants was 30.26 years (SD = 11.91 years). Among 543 participants majority were in the age group of 26 – 44 years 198 (37%) as shown in (Figure 1). A female preponderance of 55% (298) was observed among the participants (Figure 2). Education level varied among the participants, majority of them were illiterate 34% and only 13% had high level of education. (Figure 3). Majority of the participants belonged to lower socioeconomic status 73% with only 27% in the upper socioeconomic status (Figure 4).

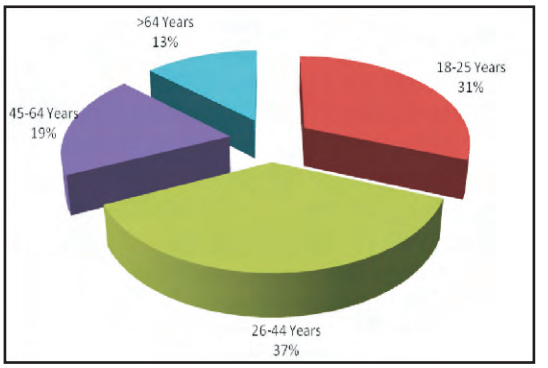

Figure-1: Agewise Distribution of the Participants

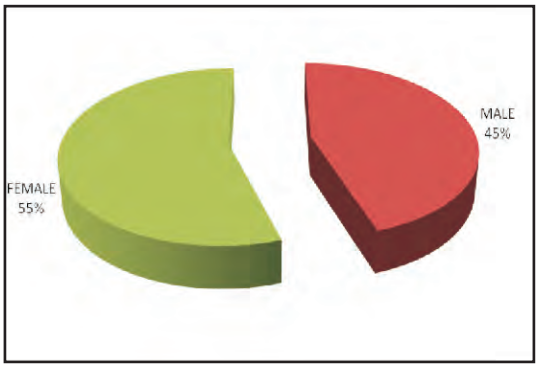

Figure -2: Gender-wise Distribution of the Participants

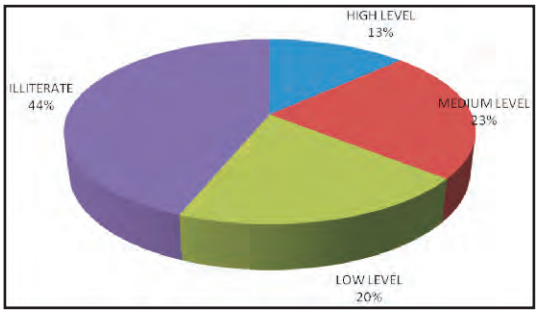

Figure-3: Educational Status of the participants

High level - Professional, Honours, Graduate or Post Graduate
Medium level - Intermediate or High School certificate
Low level - Middle or Primary School Certificate Illiterate

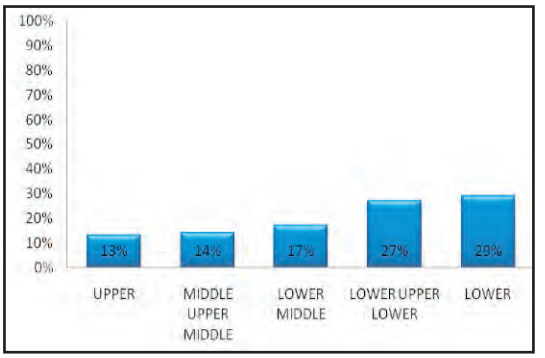

Figure 4: Distribution of participants according to Socioeconomic Status (Kuppuswamy 2011[8])

The perceptions of patients regarding oral health are shown in (Table 1) perception of extraction of teeth as only remedy for painful teeth was predominant (68%) followed by (65%) having perception of extraction of teeth as cause for weakening of eye sight, (55%) with tooth loss as a result of ageing, (65%) preferred dental surgeon over quack. On being questioned about perceptions regarding oral hygiene (51%)considered oral hygiene to be necessary, (61%) had perception of tooth brushing as sufficient to maintain oral hygiene and (65%) felt bleeding of gums as normal while tooth brushing as depicted in (Table 1)

Regarding the oral hygiene aids used to clean teeth, only (43%) used tooth brush and paste, (27%) used finger for cleaning teeth and later (24%) used Datun or Neem stick to clean their teeth. (Table 2). A highly significant association was found to be existing between the perceptions towards oral health ($p<0.001$) and oral hygiene practices ($p< 0.01$) with the age of the participants which was higher among the older age groups (Table 3)

Similarly, level of education was also found to be statistically associated with both the perception regarding oral health($p< 0.000$) and towards oral hygiene practice ($p<0.01$) The results showed that as the level of education increased false perceptions towards oral health and oral hygiene significantly decreased and was found to be lowest at High level of education. (Table 4)

Discussion

The public Perception towards oral health and oral hygiene practices reflect traditional beliefs and socioeconomic development of a country. India is a country with variant distribution of population 70% in rural and only 30% in urban area, this disparity drives to focus on the rural health care of the country which demands the clear picture of existing oral health situation.[9] The oral health and behaviour of population in rural area of India may present a different picture than from an urban one due to variation in their socio-demography and lifestyle that implies even for global comparison of Indian scenario with other countries. The present study revealed significant false perceptions existing in the community towards oral health and oral hygiene practices.

Age of the participants played a significant role in their perception towards oral health and oral hygiene practices. The false perceptions were found to be higher in older age groups as this group of population had probably inherited a cultural and traditional belief with long term effect on their health behaviour. The

false perceptions among them would also have an impact on the younger population in transmitting the same beliefs and traditions to the future generation. These findings are in accordance with the similar study in India by Singh SV et al, reporting higher false perceptions towards oral health in older age groups.[10]

Table: 1 Perceptions regarding oral health and oral hygiene practices among participants.

Questions on Perceptions regarding Oral Health	Response of the participants		
	Yes	No	Don't Know
1. Is oral health important for you ?	23%	68%	9%
2. Does general health depend on oral health?	41%	47%	12%
3. Can dental diseases be cured solely by medicines?	40%	58%	2%
4. Are dental procedures always painful?	40%	57%	3%
5. Do you think tooth loss due to ageing is normal?	55%	38%	7%
6. Extraction of teeth causes weakening of eye sight?	65%	30%	5%
7. Tobacco consumption prevents tooth decay or gum diseases?	58%	26%	16%
8. Does cleaning of teeth by dentist cause loosening of teeth?	46%	39%	15%
9. Is tooth extraction the only remedy /solution for the painful teeth?	68%	18%	14%
10. Do you prefer dental surgeons over quack?	65%	32%	3%
11. Does retention of baby teeth important in early life?	38%	42%	20%
Questions on Perceptions about oral hygiene practices	**Response of the participants**		
	Yes	**No**	**Don't know**
1. Do you feel oral hygiene is necessary for day to day life?	51%	47%	2%
2. Is tooth brushing sufficient to maintain oral hygiene?	61%	30%	3%
3. Do you feel bleeding of gums is normal while tooth brushing?	65%	20%	15%
4. Do you feel use of tooth brush is better than finger for cleaning teeth?	39%	52%	9%

Table 2: Distribution of oral hygiene aid used among the participants

Which oral hygiene aid you use to clean your Teeth?	Usage of different oral hygiene aid (%)
Toothbrush and toothpaste	43%
Use of finger for tooth cleaning	27%
Datun/ Neem Stick	24%
Any Other aid(Brick powder,Salt)	6%

Table 3: Age wise Comparison of perception regarding oral health and oral hygiene among the participants.

Age Group (Years)	False Perception About Oral Health						False Perception About Oral Hygiene Practices					
	Present		Absent		Total		Present		Absent		Total	
	n	%	n	%	N	%	n	%	n	%	N	%
18-25	87	50.58	85	49.42	172	100	79	45.93	93	54.07	172	100
26-44	105	53.03	93	46.97	198	100	102	51.51	96	48.48	198	100
45-64	63	61.76	39	38.24	102	100	61	59.22	41	40.78	102	100
>64	48	67.60	23	32.40	71	100	49	69.01	22	30.99	71	100

(X^2= 17.76; p< 0.001) **(X^2= 6.54; p<0.01)**

Table 4: Comparison of participant's perception regarding oral health and oral hygiene practices at different educational levels

Educational level of participants	False Perception About Oral Health						False Perception About Oral Hygiene Practices					
	Present		Absent		Total		Present		Absent		Total	
	n	%	n	%	N	%	n	%	n	%	N	%
High	78	45.34	94	54.66	172	100	73	42.44	99	57.56	172	100
Medium	98	49.49	100	50.51	198	100	101	51.01	97	48.99	198	100
Low	69	67.64	33	32.36	102	100	67	65.68	35	34.32	102	100
Illiterate	52	73.23	19	26.67	71	100	50	70.42	21	29.58	71	100
	(X^2 = 89.45; p<0.000)						**(X^2 = 67.43; p< 0.01)**					

Another important finding showed that population in rural Muradnagar with low level of socioeconomic status, low level of education and high rate of unemployment had higher negative perception towards oral health. Age played a considerable role, as higher percentage of older individuals in the study had false belief and perception towards oral health. A study conducted in India reported that high percentage of illiterates, mainly the male population, had belief in one or more dental myths.[10]

Other important findings related to false perceptions regarding their oral health such as preference of dental surgeons over quacks, extraction of teeth as the ultimate remedy for painful teeth, lack of knowledge regarding the importance of baby teeth are significant findings and are consistent with the findings of Khan SA et al.[11] This was found to be associated with their age and educational level. The study also showed that the use of indigenous aid like Datun or Neem twig chewing in (24%) of study participants in rural India as an oral hygiene measure, which is inferior to tooth brushing (43%). the massaging action of datun make it a more satisfactory option than finger, brushing or mouth rinsing which is in accordance to study findings done by Saumyendra V Singh et al.[12] Previous studies have shown that simply brushing teeth with non-medicated tooth paste led to 69% reduction of caries occurrence when compared to not brushing at all.[13] Although brushing was the commonly followed method of tooth cleaning , this study showed only 43% of participants who have adopted tooth brush for cleaning their teeth, which was lesser than the study reported among 49% of the participants conducted by Saumyendra V Singh et al.[12] No association between perceptions and income was found in the present study. It is possible that this was due to small income variations in that area and

to the fact that vast majority of them had very low income. Association of this nature have been found in other studies[14] which were conducted in Brazil and United States with greater population heterogeneity regarding income distribution.

Limitations of the Study

However, our study results have few limitations for its explicity as study sample were recruited by convenience sampling and was limited to patients attending out-reach dental programs with some perceived need for dental care. The response of patients who had not attended the out- reach dental programs supposedly having relatively higher false perception were not included and the existence of other perception besides those included in the study cannot be denied.

Conclusion and Recommendations

This survey provides baseline data on persistent numerous false perceptions towards oral health and oral hygiene practices of the study participants from rural areas of Muradnagar, more marked in the older age groups, illiterate and low socioeconomic class. These deep seated perceptions in patients regarding oral health and oral hygiene practices cannot be ignored by oral health professionals while planning for dental care of individual patient and for the community envisioned to reduce the effort and effect gap as well as empowering them to make decisions contusive for oral health. The results depict gloomy picture of wider gap between health care provider and receiver which are in contrast to reduction in dentist to population ratio with more than 290 dental colleges in India. This study implicates nationwide further qualitative research regarding perceptions on oral health and oral hygiene practices of the entire Indian population which may facilitate testing of various interventions for improving their oral health knowledge, attitude and practice besides exploring additional perceptions in different population affecting their oral health behavior.

This survey stimulates strengthening of social responsibility among dentists in spreading oral health awareness and extending themselves beyond their clinic for the benefit of public to promote oral health. Participation of Dentist with other stakeholders through mass media campaign such as Print/Press Media, Audio/Radio/Television, Internet, Organization of Social activities and more innovative methods could alleviate false perception of public towards oral health and enhance their oral health literacy with culturally sensitive health messages.

Conflict of Interest: Authors declared that they have no conflict of interest.

References

1. Petersen PE. World Health Organization global policy for improvement of oral health. World Health Assembly Int Dent J 2008; 58: 115-21.
2. World Health Organization. Strategies and approaches in oral disease prevention and health promotion. Geneva 2010. Available at: http://www.who.int/ oral_health/ strategies/cont/en/print.html.
3. Griffin RW, Moorhead G. Organizational behavior: Managing people and organizations: South-Western Pub 2011.
4. Gilbert GH, Heft MW, Duncan RP, Ringelberg ML: Perceived need for dental care in dentate older adults. *Int Dent J* 1994; 44:145-53.
5. Gilbert GH, Shelton BJ, Chavers LS, Bradford EH: The paradox of dental need in population

based study of dentate adults. *Med Care* 2003; 41:119-3.

6. Azodo CC, Ehizele AO, Umoh A, Ojehanon PI, Akhionbare O, Okechukwu R. Perceived oral health status and treatment needs of dental auxiliaries. Libyan J Med 2011; 5-10.
7. Chandra S. Text Book of Community Dentistry. JP Medical Publishers, 1st ED. 2000: 239–351.
8. Sharma R Kuppuswamy's Socioeconomic Status Scale – Revision for 2011 and Formula for Real-Time Updating. Indian J Pediatr 2012.
9. Watt R, Sheiliam A. Inequalities in oral health: A review of the evidence and recommendation for action. Br Dent J 1999; 187: 6-12.
10. Singh SV, Tripathi A. A study on prosthodontic awareness and needs of an ageing Indian rural population. J Ind Prosthodont Soc 2007; 7: 21-3.
11. Khan SA, Dawani N, Bilal S. Perception and myths oral health care amongst strata of low socio economic community in Karachi, Pakistan J Pak Med Assoc 2012; 62: 1198-1202.
12. Singh SV, Tripathi A, Akbar Z, Chandra S. Prevalence of dental myths, oral hygiene methods and tobacco habits in an ageing North Indian rural population. Gerodontol 2012; 29:53-56.
13. Zander HA, Bibby BG. Penicillin and caries activity. J Dent Res 1947; 26: 365.
14. Eleuterio AM, Barreto SM, Pordeus IA. Factors associated to self perceived need of dental care among brazalian elderly. Rev Saude Publica 2008; 42(3): 1-9.