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RESEARCH ARTICLE

ORAL HEALTH STATUS OF 5 YEAR AND 65-74 YEARS OLD SUBJECTS IN A WARD OF JAIPUR CITY

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ABSTRACT

Aim: Assess the oral health status and treatment needs of geriatric and pediatric population in a ward of Jaipur city

Objective: Assess the oral health status using the Oral Health Assessment form of subjects of 5 and 65-74 years in a ward of Jaipur city. Assess the periodontal status of subjects of 5 years and 65-74 years using modified CPI index in a ward of Jaipur city

Materials and Method: Sample of 630 subjects including 360 children aged 5 years and 270 adults in the age-group of 65-74 years were examined for their oral health status and periodontal status using WHO Oral Health Assessment Form 2013. Subjects were selected from a ward of Jaipur city

Results: Of the 270 adults, 69.1% subjects cleaned their teeth once a day, only 60.7% used toothpaste. Nearly 55% subjects had visited a dentist. Over 93% subjects consumed tobacco in some form. Nearly 31% subjects had complete edentulous arches and mean DMFT score was 16.74 of dentate individuals. The score was higher in males than females. Almost 58% subjects had deep pockets and 73.4% had bleeding on probing. Ninety three percent respondents complained of difficulty in chewing food. Among the 360 children, 71% had either decay or missing tooth with mean dmft 1.43. Mean decay score was 1.36 and mean missing score was 0.12.

Conclusion: The study concluded that the DMFT score for adults was high and dmft score for children was low. As nearly a third of the adult population had complete edentulous arches, they had less utilization of dental services.

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INTRODUCTION

Oral health has always been an inseparable part of general health and affects the total wellbeing of individuals. Oral cavity is associated with the development of healthy personality, perceptions and overall experience of pleasure (Mittal *et al.*, 2014). The two most common oral diseases are dental caries and periodontal disease and they often begin in childhood. Periodontal diseases have been recognized by the WHO as the most widespread disease of mankind. Despite scientific advances, the disease continues to be a major public health problem (Mittal *et al.*, 2014; Kumar *et al.*, 2005). Children who suffer from poor oral hygiene have been noted to have more restricted-activity days than those who do not. Over 50 million school hours are lost annually as a result of oral problems which affect children's overall performance. High prevalence of oro-dental problems in urban India advocates disease burden with prevalence of caries from 45-55%.

Millions of individuals suffer from dental caries and periodontal resulting in pain, difficulty in chewing, swallowing and speaking along with high medical costs and time loss. Assessing oral health is important in deciding a treatment plan of dental public health program. To assess the magnitude of preventive task, it is necessary to understand the severity of the disease (Mittal *et al.*, 2014; Sharma *et al.*, 2013). A sizeable population of India is graying, it is predicted that the elderly population of the country shall be among the highest in the world by the year 2025. Hence it becomes necessary to collect pertinent information on the oral health of the elderly to serve as baseline data for policy formulation, monitoring and evaluation purposes (Goel *et al.*, 2006).

Oral health in India has been neglected. The worst affected are the individuals in the extreme ages. There is lack of awareness and availability of quality oral health care services to a large section of the population. Individuals of the lower socio-economic class have been almost completely neglected from the advances in dental care services. The data available in the field is scanty and sparse.

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Thus the current study was carried out in a ward of the walled area of Jaipur city to evaluate the dentition status and the periodontal status of the population in the extreme age-groups – 5 years and 65-74 years age-group. The purpose of the extreme age-groups is to evaluate the dentition status and periodontal status and the start and towards the flag end of the life-span.

MATERIALS AND METHODS

The door-to-door cross-sectional study was carried-out in ward number 53 (Gjat Darwaja Bazar) in the walled city of Jaipur. Local assistance for the study was provided by Pratham Aghas Community Learning Centre and Helping Hand Foundation. The ethical approval for the conduction of the survey was obtained from the ethical approval committee of Jaipur Dental College. The examiner and recorder were trained and calibrated in Department of Public Health Dentistry, Jaipur Dental College, Jaipur on 10 adults and 10 children who reported to the Department. The population of the ward is 36, 690 in 6, 846 households. The male-female ratio is 1.1:1 as per the 2011 census. The population of adults in the age-group of 65-74 years is 1, 052 and that of children below 6 years of age is 5, 634. With a male-female ratio in children is 1.1:1. The overall literacy rate of the area is 57%. The study was conducted in a period of 20 days in the months of June-July, 2014.

The pilot study was conducted on 70 subjects – 35 subjects from each age-group. The purpose of the pilot study was to test the questionnaire and to evaluate feasibility of the study. The examination of each adult subject took about 10 minutes and that of pediatric subject about 5 minutes with the help of an examiner. A pretested six point questionnaire too was included to analyse knowledge and practices regarding oral hygiene, tobacco consumption and dietary practices. The schedule including dates and timings of the survey was decided based on meetings held with Aghaz Community Learning Centre. The sample chosen from the ward based on the population of the age-groups chosen. The sample size for children and adults of 360 and 270 respectively was derived based on the total population of the study area. The sample was drawn considering a 95% confidence interval and a 5% error.

Inclusion criteria

- Individuals in the required age-group
- Individuals available on the day of the study
- Individuals willing to have oral screening performed

Exclusion criteria

- Individuals older or younger than the required age-group
- Individuals not willing to participate in the survey
- Individuals not available on the day of the survey.

The examination included dentition status and periodontal status of both the age-groups based on the WHO Oral Health Survey Form, 2013 was used for the examination. The instruments used included mouth mirror, CPI probe, tweezers, and cotton and kidney tray. The instruments were sterilized every day in the Department of the college.

The dmft prevalence among children was noted to be 71.3% with a mean of 1.43. About 50% of the population had decayed teeth and 22 subjects had missing teeth. All the decayed teeth are considered to be carious. The mean decay component was 1.36 and that of missing was 0.12. None of the subjects had any restorations or periodontal conditions. (Table 1) Table 2 presents the DMFT profile of the geriatric subjects. The mean DMFT was 16.74. Males had a higher score of DMFT at 18.97 when compared to females with DMFT score was 14.52. Thirty point nine per cent of the study population had complete edentulous arches. Among the dentate, the mean missing component was 11.74.

Table 1. Oral health Profile of Children (n=360)

	Percentage	Number of Children
Dmft	71.3% (Mean 1.43)	258
Decay	50.6% (Mean: 1.36)	182
Missing teeth	6.2% (Mean: 0.12)	22
Filled	0%	0
Periodontal status	0%	0

Table 2. Dentition Status of the Geriatric Population

	Mean	Percentage	Frequency
Complete Edentulous		30.9%	84
DMFT (Overall)	16.74	72.2%	196
Male	18.97		
Female	14.52		
Decay	3.05	76.31%	206
Missing teeth (Dentate)	11.74	62%	251
Filled		0%	0

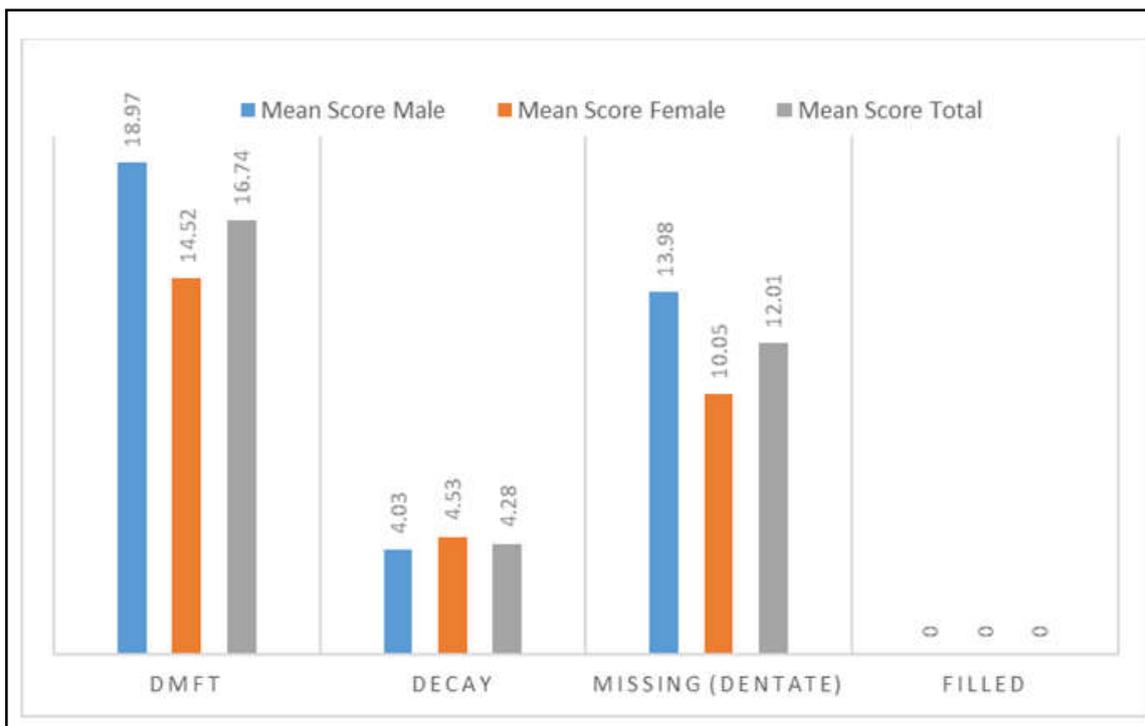
Table 3. Periodontal Status of Elderly Population (n = 270)

Shallow Pocket	46.1%	124
Deep Pocket	57.8%	156
Bleeding on Probing	73.4%	198

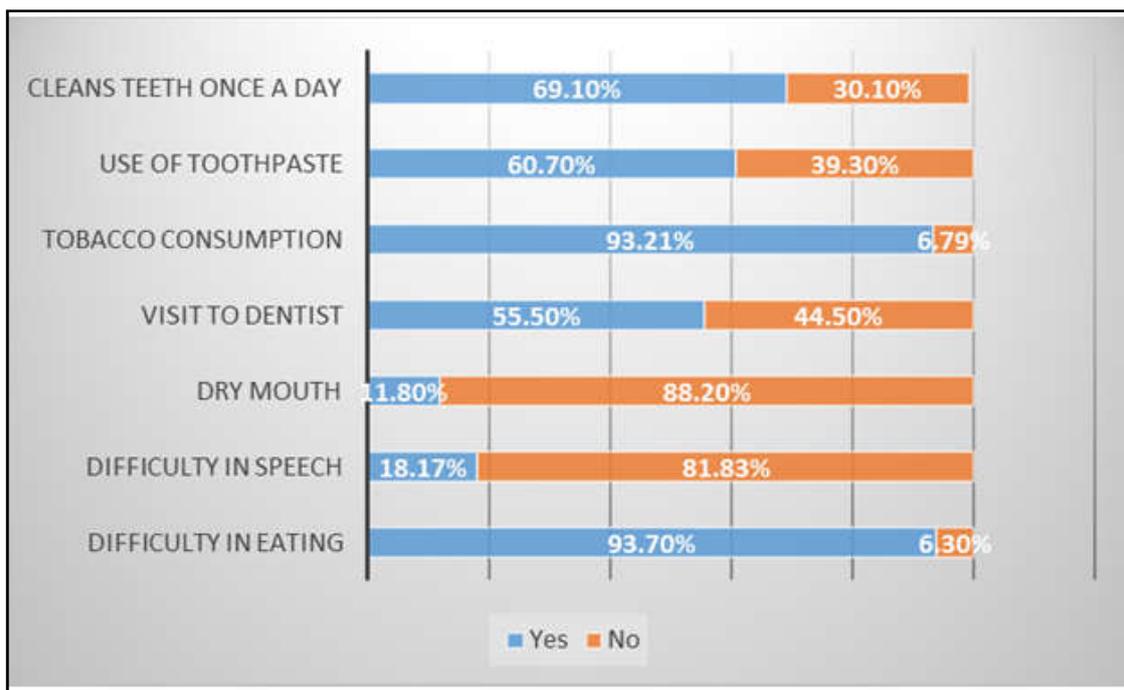
Graphical presentation of the DMFT status of the geriatric population suggests that the DMFT mean of the male population is 18.97 which is higher than the overall mean of 16.74. The decay component in females is higher than that of males and that of the overall mean, but lower in the missing component. None of the subjects had any restorations. (Graph 1)

Among the dentate individuals, periodontal status was noted to be poor with 46.1% of the subjects present having shallow pockets while deep pockets were present in 57.8% individuals totaling to 156 teeth. Bleeding on probing was recorded in 198 individuals. The total sum exceeds the number of subjects examined (270) as the same individual may have shallow as well as deep pockets and would also present with bleeding on probing. (Table 3)

The questionnaire for elders was divided as their oral hygiene practices, dental visits and perception of oral health. The details are presented in Graph 2. Sixty nine point one per cent study subjects cleaned their teeth once a day, while 30.9% subjects did not clean their teeth at all. Almost equal number of individuals used a toothpaste to clean their teeth while 39.3% used other modes.



Graph 1. DMFT Score of 65-74 years Subjects (n = 270)



Graph 2. Oral Health Practices and Perceptions of Subjects between 65-74 years age (n= 270)

Among the total study subjects, 55.5% individuals had visited a dentist for their dental ailments, while 44.5% subjects had never visited a dental professional. Over 93% of the geriatric population consumed tobacco – smoked or smokeless, and an almost equal number had experienced difficulty in eating food. Forty nine individuals experienced difficulty in speech whereas 32 had complained of dry mouth.

DISCUSSION

The current study was carried out on a sample of geriatric and paediatric population in the walled city of Jaipur. The mean dmft score in children was noted to be low, as against the observations by Rao *et al*, Kumar MP *et al*, Dharr V and Singh A which noted a moderate dmft status, (Kumar *et al.*, 2005; Rao *et al.*, 1999; Dhar *et al.*, 2007; Singh *et al.*, 2011) but

consistent with the observations by Arora SA (Arora et al., 2012). The current study is consistent with the national survey which reported a low to moderate dmft and a lower dmft status in Rajasthan (Bali et al., 2004). As with the study by Rao et al and Saravanan et al, no gender difference in the dmft status was noted in the current study, though a significant difference was observed by. Tadakamdla et al in 2012 (Rao et al., 1999; Saravanan et al., 2003; Tadakamadla et al., 2012). Studies in Puttur, Mangalore and rural Gurgaon have reported dental caries in nearly all of the study sample though the study in Gurgaon presented with caries in about two third of the population. Also studies by Arora et al and Sasavana et al in 2003 noted caries in about half the study population. The National Survey noted the prevalence of caries between 40-60%. The studies in Udaipur, Pondicherry and the current study present are in concurrence with the national survey and have noted caries prevalence in less than half the study subjects (Arora et al., 2012; Saravanan et al., 2003). DMFT in the current study was noted to be high and similar to that reported in the National Survey of 2004 and a study in Delhi (Bali et al., 2004; Srivastava et al., 2013). The decay component of the current study was lower than that of the study by Thomas et al in 1994 in South India and by Srivastava et al in 2013 in Delhi. However, the prevalence was similar to a study in Delhi in 2004 and higher to the one in Mangalore and Chennai in 1999 and 2010 respectively (Rao et al., 1999; Srivastava et al., 2013; Thomas et al., 1994; Shah and Sundaram, 2004; Mary et al., 2010).

Edentulousness was observed in a third of the population in the current study. Similar results were reported by Goel et al in a study in Delhi which noted edentulousness to be the primary concern among the geriatric rural community and a study in by Chhabra A in 2013 noted over two third of the population with edentulous dental arches (Goel et al., 2006; Chhabra et al., 2013). As observed in the National survey of 2004, none of the subjects in the present study had any restorations though study by Shah et al in 2004 noted a low percent of population with dental restorations (Shah and Sundaram, 2004). Rao et al in 1999 reported in a study in Mangalore that a third of the geriatric population had shallow pockets, whereas Mary AV study in Chennai reported a half of the population with deep pockets. Shah in a multicentric study reported high periodontitis. The periodontal status in the current study was higher than that of the observations by Rao et al and Bali et al, but similar the observations by Shah et al and Mary et al. (Rao et al., 1999; Bali et al., 2004; Mary et al., 2010; Chhabra et al., 2013). Goel P reported that a combination of modern and traditional oral hygiene practices (Goel et al., 2006). Brushing was performed over two third of the population. As against the study by Srivastava et al in 2013 which reported tobacco consumption in less than half the population, almost the entire population in the current study consumed tobacco in some form, though were aware about the ill-effects of the consumption (Srivastava et al., 2013). As oppose to the observations by Goel P, very few subjects in the current study had access to quality affordable oral health care services (Goel et al., 2006).

Conclusion

There is need for the dental professional to penetrate further into the societies in order to increase awareness regarding the

available treatment modalities and help in prevention of tobacco consumption at the pediatric and geriatric levels. Dental professionals may collaborate with the government and other health agencies to ensure that no section of the society is ignored.

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