



Evaluation of oral hygiene status and dental caries prevalence among healthy but post covid-19 diseased special care children in Pune city: An observation study

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Abstract

Introduction: This study had twin objective of assessing the oral health knowledge, attitude and practice and to assess the dental caries status and treatment needs among the orphan children of orphanage of Pune city, Maharashtra, India

Materials and methods: this cross- sectional study was carried out on 400 children to assess the oral health knowledge, attitude and practices of children and adolescents of special care children's in Pune city, Maharashtra, India. The data was collected on a pre-

tested questionnaire which included 10-15 closed ended multiple-choice questions on perceived oral health status, knowledge of oral health and attitude, oral health practices, dietary habits and behavior towards dental treatment. The reliability and validity of the questionnaire were calculated.

Results: out of 400 study population oral hygiene index was fairly good for 340 special care children and whereas 60 students oral hygiene status was poor. The dental caries prevalence is seen more in smaller age groups than

higher age groups. Male were affected more than females in terms of dental caries prevalence.

Conclusion: the oral hygiene status among special care children is average and the prevalence of dental caries among them is increasing.

Keywords: Dental caries, gingival health, oral health, tobacco, special care children

Introduction

The special care children are the ones who have lost both their parents and are socially economically depressed.¹ The exact numbers of them in India is unknown, but it can be around 2 million. Being special care children is one of the most important predictors of poor oral health as their child rarely gets an opportunity to seek dental care.² High prevalence of dental caries, gingivitis and dental trauma has been observed in special care children. Untreated oral disease could lead to general health problems, pain, interference in eating, loss in school time and also social unacceptability.³ Oral health is an integral part of general health and quality of life, so its neglect will give rise to negative health consequences and unpleasant social life of the individuals. Many researchers have reported a compromised oral health in children and adolescents suffering from sociopaths.⁴ This has been attributed to overcrowding, lack of adequate staff, poor oral hygiene, improper dietary habits, inadequacies in the orphanage system, and inadequacies in the health care system.⁵ Studies reporting the oral health status of special care children are very scarce particularly in Western India.⁶ Therefore the aim of this study was to assessing the oral health knowledge attitude and practice and to assess the dental caries status and treatment needs among the special care children of orphanage of Pune city, Maharashtra, India.

Materials and methods

A questionnaire study was conducted among the special care children the Western Maharashtra region. The study was aimed to understand the oral hygiene status and dental caries prevalence of special care children in Pune. The participants were selected based on the following:

Inclusion Criteria

1. Age group below 6 years, 6-13 years, and above 13 years.
2. People willing to participate.

Exclusion Criteria

1. Mentally challenged people
2. Physically challenged people.

The input parameters for sample size calculation were as follows: 80% power of the study, alpha error 0.05, effect size 0.5, and degree of freedom as 5. The calculated sample size was 388 using G*Power software version 3.1.9.2 (Heinrich Heine University, Düsseldorf). The final considered sample size was around 400. The SOC-related data was obtained using the convenient sampling technique. A questionnaire was pretested and validated among 20 subjects to check reliability and validity and these subjects were not included in final analysis. Then dental checkup and treatment camp was organized among special care children. Demographic and observational data collected which consisted of DMFT, DMFS, OHI-S and oral lesions of special care children. Informed consent was taken from all the participants and a brief introduction was given about the study. Data collected were entered in a spreadsheet (Microsoft Excel 2018). Statistical analysis was done using descriptive statistics using Statistical Package for the Social Science (SPSS) 23.0 version software (IBM Chicago, Illinois, United States). The p-value was set at 5%.

Results

Among 400 special care children, around 165 children's were below 6 years, above 206 children's age is between 6 to 13 years old children and 29 children's were above 13 years. Among 400, around 135 children were male and 265 were female. Dental caries prevalence of special care children calculated on the basis of DMFT and DMFS index. Dmft index for below 6 years was 9.20 ± 4.2 , for 6-13 years it was 8.7 ± 4.2 and above 13 years and it was 6.9 ± 3.2 . Dmft index for male ranges between 9 ± 4.23 and for female 8.6 ± 4.75 . Dmfs index for below 6 years was 37.4 ± 4.1 , for 6-13 years it was between 32.7 ± 4.1 and above 13 years it was around 26.2 ± 3.7 . Dmfs index for male ranges between 37.1 ± 4.1 and for female it was around 33.1 ± 1.2 .

Discussion

The children living with their family are provided with physical security, food and shelter, and psychological security. However, special care children are not so fortunate. The special care children are ones who have lost one or both the parents and are socially and economically deprived.⁷ Young children in orphanage do not receive adequate preventive health care and thus many significant problems go undetected, or, if diagnosed, are not evaluated and treated.⁸ Thus, many orphan children suffer from chronic ill health, developmental, and psychiatric disorder. In this particular

study most of the children were from urban (83.25%) area than rural area (16.75%). The female (66.25%) participants were comparatively higher than male (33.75). The oral hygiene status was observed average in both male and female special care children. Few of the special care children had some oral lesions too. The prevalence of dental caries of special care children with respect to dentition is also calculated. The DMFT index in primary teeth for male is 6.9 whereas for female it around was 6.35 and in permanent teeth for male is around 2.2 whereas for female it was around 2.25. The DMFS index in primary teeth for male is 32.15 and for female it was 29.07 and in permanent teeth for male is around 5.05 whereas for female it was around 4.03. The knowledge of oral health care among the caretakers who encouraged and motivated these children, oral hygiene aids provided by the nongovernmental organizations (NGOS) and frequent visit of dental health facilities for regular checks would have assisted them to maintain their oral hygiene. Such marginalized populations are influenced by several background factors such as attitudes, beliefs about health, past diseases, and past dental experience.⁹⁻¹² Due to economic and practical limitations, this study could not be carried out on a longitudinal design.¹³ The limitation of the study was specific and small sample size and city-oriented data collection.

Table 1: Distribution of the study according to gender, age and residence

Sn.	Participants		N	%	Total
1	Age	<6 Years	165	41.25	400(100%)
		6-13 years	206	51.5	
		>13 years	29	7.25	
2	Gender	Male	135	33.75	400(100%)
		Female	265	66.25	
3	Residence	Urban	333	83.25	400(100%)
		Rural	67	16.75	

Table 2: Dental caries prevalence among special care children (N=400)

Sn.	Indices	Age			Gender	
		6	6-13	13	Male	Female
		Mean Score SD				
1	DMFT	9.20±4.2	8.7±4.2	6.9±3.2	9.1±4.23	8.6±4.75
2	DMFS	37.4±3.2	32.7±4.1	26.2±3.7	37.1±4.1	33.1±1.2

Table 3: Oral health status and any oral lesion among special care children (N=400)

Sn.	Participants	Gender		Age			
		Male	Female	<6	6:13	13	
1	OHI-S	Good	73(18.25)	112(28)	117(29.25)	150(37.5) 9	9(2.25)
		Fair	42(10.5)	113(28.25)	41(10.25)	28(0.7)	12(3.0)
		Poor	20(5)	40(10)	7(1.75)	28(7)	8(2)
2	Oral lesion (if any)	7(1.75)	11(2.75)	8(2)	7(1.75)	3(0.75)	

Table 4: The prevalence of dental caries of special care children with respective to dentition N=400)

Sn.	Prevalence of dental caries		Gender	
			Male	Female
1	DMFT	Primary	6.9	6.35
		Permanent	2.2	2.25
2	DMFS	Primary	32.15	29.07
		Permanent	5.05	4.03

Recommendations

1. Initiation of oral health promotion programs to train the faculty, staff, and children residing in the orphanages, in oral hygiene maintenance.
2. Assessment of deleterious oral habits like nail or lip or pencil biting, thumb sucking and more adverse habits which affect their oral health as these populations are more prone to emotional or

psychological problems due to the lack of parental attention, affection, and care.

Conclusions

The oral hygiene status and gingival health status of special care children's is average and prevalence of dental caries among them is increasing.

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