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DENTAL TREATMENT NEGLECT AMONG CHILDREN AND ADOLESCENTS IN PALAMPUR AREA OF KANGRA DISTRICT IN HIMACHAL PRADESH, INDIA

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ABSTRACT

Context: Oral health care is usually treatment neglected in preventive care as well as in treatment of dental problems. Dental treatment neglect has been found to be related to poor oral health which may lead to poor growth among children and impaired quality of life. However, it could not receive proper public attention in India. **Objective:** To investigate prevalence of dental treatment neglect among children and adolescents attending schools or living in a deprived inner area along with factors associated with dental treatment neglect. **Methods:** A cross-sectional study conducted during March 2022 to July 2022 among 268 children and adolescents students aged 6 to 19 years in Sidhpur, Palampur area of district Kangra, Himachal Pradesh, India. A stratified multistage random sampling technique was used for this study. **Results:** Out of 268 respondents, 118 (44%) were female and remaining 150 (56%) were males. Majority (94.2%) of surveyed respondents were from rural background. Prevalence of dental problem during last one year was found 40.3%. Among 108 respondents who suffered from dental problems, 61 (56.5%) respondents were of the opinion that it was not necessary to consult for their problems. Prevalence of dental treatment neglect was found 41.7%. Prevalence of dental treatment neglect was highest among respondents aged 10-13 years. Dental treatment neglect was least (34.6%) among children aged 6-9 years. The difference between prevalence rates of dental treatment neglect among children aged 6-9 years (34.6%) was significantly lower than the prevalence rate (43.9%) among adolescents aged 10-19 years. The difference in the prevalence rates of dental treatment neglect among respondents from rural area (40.8%) was significantly lower than that for those from urban area. **Conclusions and Suggestions:** Present study reported high prevalence of dental treatment neglect among children and adolescents in a deprived inner area irrespective of their socio-demographic characteristics except background/place of residence. Problem of dental treatment neglect among children should be addressed properly to prevent adverse impacts on their overall health status as healthy teeth and gums are desired for their healthy adulthood. There is an urgent need of developing public dental health interventions to address dental treatment neglect for adolescents and children. Periodic dental check-up camps should be organized by health professionals in schools and community levels. Oral health education should be imparted among children and adolescents for adopting hygiene practices and timely seeking dental health care.

KEYWORDS: Children and Adolescents; Dental Treatment Neglect (DN); Dental Treatment Neglect (DTN); Oral Health.

INTRODUCTION

Oral health plays an important role in overall health of the body. Oral hygiene needs positive attitude towards dental health as it is a behavioural aspect of the person concerned. Oral health care is usually treatment neglected in preventive care as well as in treatment of dental problems. The term "Dental Treatment neglect" can be defined as the behaviour and attitudes which are likely to have detrimental consequences for the individual oral health. Dental treatment neglect, as defined by the American academy of paediatric dentistry, is the 'will full failure of parent or guardian to seek and follow through treatment with treatment necessary to ensure a level of oral health essential for adequate functions and freedom from pain and infections.[1]

Dental treatment neglect has been found to be related to poor oral health which may lead to poor growth among children and impaired quality of life. The most common type of dental treatment neglect is untreated carious lesions. Dental caries, otherwise known as tooth decay, are formed through a complex interaction over time between acid producing bacteria of dental microbial plaque and fermentable carbohydrates, mainly sucrose.

Another type of dental treatment neglect is untreated dental traumas. Untreated dental disease may cause pain, lack of sleep, low academic performance and low engagement in social activity. The concept of dental treatment neglect may allow a better understanding of the complex relationships between individual behaviour, environmental factors and dental diseases. A detailed review article presents epidemiological aspects of dental treatment neglect and importance of its early diagnosis.[2] A longitudinal school based study carried out among adolescents in a deprived area of United Kingdom described two types of dental treatment neglects namely treatment neglect of the prevention of oral disease (DPN) and treatment neglect of dental treatment (DTN) and reported a high rate of dental treatment neglect adolescents. Prevalence rates of DPN and DN were reported to be 40% and 50% in that study.[3] Prevalence of untreated caries ranged from 38.9 to 99 percent in a systematic review.[4] Another study conducted in Rajasthan, India, dental treatment neglect was found higher among children as compared to that in adolescents.[5] The treatment neglect of health has been found to be related to deprivation and poverty.[6,7]

Dental treatment neglect is prevalent in every segment of the society and is witnessed in all social, ethnic, religious and professional strata. Recently it has been recognised internationally as a new area of oral health concern. However, it could not receive proper public attention in India. Traditionally, most of the dental treatment neglects have focused exclusively on the unmet treatment needs and very little attention has been given to both the need for promotion of oral health and the primary prevention of the dental disease. Dental treatment neglect is a much treatment neglected factor among children in spite of being valid indicator of their present and prospective oral health status. Inadequately treated dental disease may have significant long term impacts on the physical and psychological well being of children. Adolescents form a vulnerable group in terms of their tendency to experience dental treatment neglect. Therefore, present study was conducted with the objectives of investigating prevalence of dental treatment neglect among children and adolescents attending schools or living in a deprived inner area along with factors associated with dental treatment neglect.

MATERIALS AND METHODS

Present cross sectional study was conducted during March 2022 to July 2022 in Sidhpur, Palampur of district Kangra, Himachal Pradesh, India. All the male and female children and adolescents students aged 6 to 19 years giving consent along with parental consent wherever applicable staying were included in the study. A stratified multistage random sampling technique was used for this study. We included two strata one of primary schools and one of higher secondary schools. Within each stratum, schools are selected at random and within selected schools, students are selected with proportional allocation as study units in accordance with inclusion criteria.

Power analysis was done to calculate optimum sample size for the proposed cross -sectional study by using the following formula with approximation for large population:

$$n = Z^2 1\text{-}\alpha/2\ P(1\text{-}P)/\ d^2$$

Where,
P = Anticipated population proportion,
1 -α= Confidence Coefficient,
d = Absolute precision, and
Z (.) is the value of standard normal variate

Assuming 56% prevalence of dental treatment neglect reported in an earlier literature, 90% confidence coefficient and 5% absolute precision Sample size comes out to be 268.

An Interview Schedule, specifically designed for this survey was used to collect information. Data variables included socio demographic characteristics, knowledge and attitude regarding oral health and their treatment seeking behaviour for the purpose of assessing dental treatment neglect. All ethical guidelines were followed to conduct interviews. Routine statistical methods were used describing data using frequency distributions. Chi square test was used for testing the significance of associations of potential correlates of dental treatment neglect. Normal test of proportions was used for testing the significance of differences between two proportions. Data analysis was carried out by using the SPSS -26.0 software.

ICMR Ethical Guidelines for Biomedical Research on Human Participants, 2017 were followed. Informed consent was taken and confidentiality of responses was ensured maintaining privacy of respondents.[8]

RESULTS

Demographic characteristics of respondents are presented in table -1. There were maximum 95 (35.4%) respondents in the age group of 6-9 years followed by 83 (31.05%) in 14-16 years age group. Out of 268 respondents, 118 (44%) were female and remaining 150 (56%) were males. Majority (94.2%) of surveyed respondents were from rural background. According to the latest Kuppuswamy socio economic income scale, majority 182 (67.9%) were belonging to the upper lower class group and 43 (16%) to lower class. Prevalence of dental problem during last one year was found 40.3%. Among 108 respondents who suffered from dental problems, 61 (56.5%) respondents were of the opinion that it was not necessary to consult for their problems and 45 had not consulted for the problems resulting in prevalence of dental treatment neglect to be 41.7% in the present study as shown in table-2.

Table-3 presents dental neglect among respondents in accordance with their socio-demographic characteristics.

Overall prevalence of dental treatment neglect was 41.7%, which was maximum among respondents aged 10-13 years wherein 16 (47.1%) out of 34 children and adolescents were treatment neglecting their dental problems. Dental treatment neglect was least (34.6%) among children aged 6- 9 years. The difference between prevalence rates of dental treatment neglect among children aged 6-9 years (34.6%) was significantly lower than the prevalence rate (43.9%) among their counterparts, that is, adolescents aged 10-19 years. The difference in the prevalence rates of dental treatment neglect among respondents from rural area (40.8%) was significantly lower than that for those from urban area. Among 108 respondents, 47.8% male treatment neglected their oral health whereas 52.2% were aware and 31.7% females neglected treatment of oral health problems in spite of 68.3% awareness among them. Out of 108 respondents, 5(4.6%) didn't feel anxious while sitting in waiting room for dental checkups, 21(19.4%) feel slightly anxious and 82(75.9%) felt very anxious while sitting in waiting room of dental clinic. Out of 108 respondents having dental problem past twelve months 4(3.7%) felt slightly anxious while having dental check up and remaining 104(96.3%) felt very anxious for the same.

Table 1: Distribution of respondents on the basis of demographic characteristics.

Variable	Frequency (N=268)	Percentage
Age (in years)		
6-9	95	35.4
10-13	73	27.2
14-16	83	31.0
17-19	17	6.3
Gender		
Male	150	56.0
Female	118	44.0
Background		
Rural	254	94.8
Urban	14	5.2
Socioeconomic status		
Upper Middle	4	1.5
Lower Middle	39	14.6
Upper Lower	182	67.9
Lower	43	16.0

Table 2: Distribution of respondents according to oral health care seeking practices.

Oral Health Practice	Number	Percentage
Dental problems during last one year (N=268)		
Yes	108	40.3
No	160	59.7
Aware of consulting for dental problems (N=108)		
Yes	61	56.5
No	47	43.5
Dental treatment neglect (N=108)		
Yes	45	41.7
No	63	51.3
Anxious during waiting for dental exam		
Not anxious	5	4.6
Slightly anxious	21	19.4
Very anxious	82	75.9
Total	108	100.0
Anxious during dental check-up		
Slightly	4	3.7
Very	104	96.3

Table-3: Dental treatment neglect according to socio-demographic characteristics.

Socio-demographic characteristic	Total N=108	Treatment neglect		No Treatment neglect	
		No	%	No	%
Age in years					
6-9	26	9	34.6	17	65.4
10-13	34	16	47.1	18	52.9
14-16	38	14	36.8	24	63.2
17-19	10	6	60.0	4	40.0
					P=0.42
Gender					
Male	67	32	47.8	35	52.2
Female	41	13	31.7	28	68.3
					P=0.15

Type of family					
Joint	27	7	25.9	20	74.1
Nuclear	73	36	49.3	37	50.7
Extended	8	2	25.0	6	75.0
					P=0.07
Background					
Urban	5	3	60.0	2	40.0
Rural	103	42	40.8	61	59.2
					P<0.05
Total	**108**	**45**	**41.7**	**63**	**58.3**

DISCUSSION

The study reported 41.7% prevalence of dental treatment neglect among children and adolescents in study area. The study included population belongs to the age group of 6 to 19 years. Among 108 respondents, 41.7% treatment neglected their dental treatment. Even if the respondents were aware to visit the dental clinics they had limited knowledge regarding their oral hygiene. Treatment neglect is mostly seen in the age group of 17 to 19 years. 47.8% male treatment neglected the oral health and 31.7% female respondents neglected treatment for their oral health problems. Reported dental treatment neglect may be attributed to non affordability of dental treatment costs and negligence in taking care. The dental treatment neglect reported in the present study was comparatively less as compared to 50% reported among adolescents in a deprived area of United Kingdom.[3] Reported low prevalence of dental treatment neglect in the present study may be due to low reporting and partly due to more paternal care of children. Awareness of oral health care was 68.3% among females as compared to 52.2% among males. Higher percentage of respondents from nuclear families treatment neglected their oral health as compared to those from joint families. Majority 60% of respondents from urban area treatment neglected their oral health and 40.8% from rural area treatment neglected their oral health. Present study reported no significant socio-demographic correlate of dental treatment neglect except background and respondents from rural areas were more likely to treatment neglect as compared to respondents from urban areas, may be due to paucity of dental care facilities in rural areas. Our study results do not agree with results of study conducted in Rajasthan wherein dental treatment neglect was greater among females, older children, those whose mother had less education.[5] These findings are also in contrast with findings of an earlier study wherein socio-demographic characteristics were found significantly associated with dental treatment neglect.[9] Variations in dental treatment neglect exist in relation to different professions was also observed in a study conducted in Indore unlike our study.[10]

A Study showed that a greater dental treatment neglect score among children belonging to low socio-economic status.[11] There may be some other factors like poverty/inability to afford the dental treatment cost, distance of dental care facilities available, and knowledge gaps, attitude towards oral health, apart from socio-demographic characteristics, which could not be considered in the present study. Moreover, reported dental treatment neglect may overestimate/underestimate the actual prevalence. The study also lacks in representativeness of sample and low sample size due to time constraints and problems encountered in survey work due to covid-19 pandemic situations. The cross-sectional study design adopted in the present study did not enable causality to be established. Further research is necessary to address questions which have not been answered here. Studies on assessment of dental health quality of life of adolescents and children and their perceived dental treatment needs may be subject matter of future studies.

CONCLUSIONS AND SUGGESTIONS

Present study reported high prevalence of dental treatment neglect among children and adolescents in a deprived inner area irrespective of their socio-demographic characteristics except background/place of residence. Problem of dental treatment neglect among children should be addressed properly to prevent adverse impacts on their overall health status as healthy teeth and gums are desired for their healthy adulthood. There is an urgent need of developing public dental health interventions to address dental treatment neglect for adolescents and children. Oral health education should be incorporated in the educational curriculum from the beginning. Periodic dental check-up camps should be organized by health professionals in schools and community levels. Oral health education should be imparted among children and adolescents for adopting hygiene practices and timely seeking dental health care. There is a need of education programs with specific attention for parents also to increase knowledge, understanding and practices for improved oral health of their children.

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