

Oral Health Status and Treatment Needs of Children and Young Adults Attending a Day Centre for Individuals with Special Health Care Needs in Shimla

Arihant Jain¹, Seema Thakur², Parul Singhal³, Priyanka Thakur⁴

1- PG student, BDS, Department of Pedodontics and Preventive Dentistry, Himachal Pradesh Government Dental College and Hospital, Shimla, India. 2- Professor, MDS, Department of Pedodontics and Preventive Dentistry, Himachal Pradesh Government Dental College and Hospital, Shimla, India. 3- Astd. Professor, MDS, Department of Pedodontics and Preventive Dentistry, Himachal Pradesh Government Dental College and Hospital, Shimla, India. 4- PG Student, BDS, Department of Pedodontics and Preventive Dentistry, Himachal Pradesh Government Dental College and Hospital, Shimla, India.

Correspondence to:

Dr. Arihant Jain, Room no.:301, Department of Pedodontics and Preventive Dentistry, Himachal Pradesh Government Dental College and Hospital, Shimla, India.

ABSTRACT

Introduction: The aim of this study was to assess oral health status and treatment needs of children with special Healthcare needs (SHCN) at a school in Shimla. **Methods:** A cross-sectional study of 61 children with SHCN was done to assess dentition status, treatment needs, and dentofacial anomalies using the WHO criteria. **Results and conclusion:** A significantly higher prevalence of caries, malocclusion, and poorer oral hygiene was observed. Oral health of these children will require maintaining good oral hygiene practices, which can be achieved with appropriate target-based oral health approaches.

KEYWORDS: Oral Health, Treatment Needs, Special Children, Differently Abled Children

INTRODUCTION

Children with special health care needs (SHCN) refers to children with any physical, developmental, mental, sensory, behavioral, cognitive, or emotional impairment or limiting condition that requires medical management, health care intervention, and/or use of specialized services or programs.¹ 650 million people worldwide, making up approximately 10% of the total, live with a disability. This figure is increasing through population growth; medical advances and the ageing process.² According to the National Sample Survey Organization (NSSO), there are 18.49 million persons with disabilities in India which constitutes around 1.8% of the total population.³ It is estimated that 6–10% of children in India are born disabled and that possibly one-third of the total disabled population is comprised of children.⁴ Individuals with SHCN may be at an increased risk for oral diseases throughout their lifetime.^{2,4-6} Oral diseases can have a direct and devastating impact on the health and quality of life of those with certain systemic health problems or conditions.¹ Oral health is an inseparable part of general health and well-being.⁴

Children and adolescents with SHCN are almost twice as likely as their peers without SHCN to have unmet oral healthcare needs across all income levels.⁵ Priorities and attitudes can serve as impediments to oral care. Parental

and physician lack of awareness and knowledge may hinder an individual with SHCN from seeking preventive dental care.⁶ Other health conditions may seem more important than dental health, especially when the relationship between oral health and general health is not well understood.⁷ Persons with SHCN patients may express a greater level of anxiety about dental care than those without a disability, which may adversely impact the frequency of dental visits and, subsequently, oral health.⁸

Health care for individuals with special needs requires specialized knowledge acquired by additional training, as well as increased awareness and attention, adaptation, and accommodative measures beyond what are considered routine.⁹ The process of improving oral health in a population begins with the collection of epidemiological data, which helps to understand the needs of the community, to identify high-risk groups, and to plan treatment and prevention strategies and monitor the development of the situation over a period of several years.¹⁰

This study was carried out to evaluate the oral health status and treatment needs of these children, in order to provide information for future planning and intervention.

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MATERIALS AND METHODS

The study population consisted of children and young adults attending a private day centre for individuals with special needs in Shimla. At the time of this study, there were 61 persons attending the private school. The subjects were examined during a routine oral health check up camp organized by the institution. The study was approved by the ethical committee of H.P.G.D.C. Shimla. Written consent was taken from the parents. Only subjects whose parents gave consent to their ward's participation were examined. Along with examination, child's bio-data, type of disability and parents' educational background was also recorded, as provided by the parent or from the school record.

A parent's educational level was classified as 'high' when either parent had attended a tertiary institution, 'middle', when either parent had attended secondary school and 'low' when they had attended only primary school or no education.¹¹

One of the authors (FAO), carried out the oral examination on all the subjects in the school clinic using natural light. They were examined for the following parameters using the World Health Organization Oral Health Survey Basic Methods.¹²

Dental caries: Using the decayed, missing and filled teeth (dmft) index for primary and early mixed dentition (6–10 years) and Decayed, Missing and Filled Teeth (DMFT) index for late mixed (11–15 years) and permanent dentitions (16–20 years) and (21 yrs and above). A tooth was considered decayed when there was frank carious cavitation on any surface of the tooth. A tooth was classified as missing, if it was extracted due to caries or which were so badly decayed that they are indicated for extraction. A tooth was classified as filled, if it had a restoration for a carious lesion without any recurrent decay present. Primary teeth, which were concluded to be exfoliated, and permanent teeth, unerupted and those extracted for other reasons apart from caries were not included in the indices.

Oral hygiene status: Using the Simplified Oral Hygiene Index (OHI-S) of Greene and Vermillon. The OHI-S value ranges from 0–6 which can be interpreted as 'good' when the OHI-S score was 0–1.2, 'fair' when it was 1.3–3.0 and 'poor' when it was 3.1–6.0

Occlusion anomalies: Angle's classification of occlusion was used to classify malocclusion. Other malocclusions such as Crowding, spacing and anterior open bite were also noted.

Chronologic enamel hypoplasia: Enamel hypoplasia was recorded when there were consistent discoloured malformations on teeth of the same series in at least two quadrants.

Missing teeth: A tooth, if not erupted after six months of its expected eruption date, was classified as missing.

Retained teeth: A tooth was classified as retained if it was still in the arch after six months of its expected date of exfoliation. Fracture of anterior teeth was also recorded. Findings were discussed with the parents/guardians, appropriate oral health instructions and education were given and were advised to visit a dental hospital for necessary treatment.

RESULTS

Sixty-one subjects responded to the call for screening, four were either ill or very uncooperative so were excluded from the study, leaving 57 subjects, aged 6–30 years (mean age 15.88 ± 5.52 years) who were examined.

There were 34 (59.6%) males and 23 (40.4%) females. Thirteen (22.8%) were from parents of high educational level, 37 (64.91%) were from the middle and 7 (12.28%) was from the low educational level. There were 11 (19.29%) subjects in 6–10 years age groups, 23 (40.35%) in the 11–15 years age group and 14 (24.56%) in the 16–20 and 9 (15.79%) in the 21 ≤ years age group (Table 1).

| Characteristics | N | (%) |
|---------------------------------|------------|------|
| Gender | | |
| Male | 34 | 59.6 |
| female | 23 | 40.4 |
| Age(years) | | |
| Range | 6-30 years | |
| 6-10 | 11 | 19.3 |
| 11-15 | 23 | 40.3 |
| 16-20 | 14 | 24.6 |
| 21< | 9 | 15.8 |
| Parent's education level | | |
| High | 13 | 22.8 |
| Middle | 37 | 64.9 |
| Low | 7 | 12.3 |

Table 1. socio-demographic characteristics of the study population 24 (42.10%) were suffering from autism, 24 (42.10%) cerebral palsy, 8 (14.03%) Down syndrome, and 1 (1.75%) seizure disorder. Twenty (35.08%) were caries free. The mean dmft of the primary and early mixed dentition years was 3.10 ± 3.17 while the mean DMFT of the late mixed dentition and permanent dentition was 2.31 ± 2.83 as shown in Table 2.

| Age group (years) | dmft | DMFT |
|---|-----------------|------|
| 6-10 | 3.10 ± 3.17 | |
| 11-15 | 1.84 ± 2.19 | |
| 16-20 | 2.54 ± 3.20 | |
| 20< | 3.29 ± 3.86 | |
| Total mean dmft = 3.10 ± 3.17 | | |
| Total mean DMFT = 2.31 ± 2.83 | | |

Table 2. Mean dmft/DMFT of the study population according to age group

The mean dmft/DMFT for females and males was 2.52 ± 2.11 and 2.50 ± 3.43 respectively with no significant sex difference (Kruskal-Wallis test for two groups = 0.12; $p = 0.9$) (Table 3).

| Gender | N | Mean |
|---------------------------|----|-----------------|
| Female | 23 | 2.52 ± 2.11 |
| Male | 34 | 2.50 ± 3.43 |
| Kruskal wallis test= 0.12 | | |
| P value= 0.9 | | |

Table:3 Mean dmft/DMFT according to gender

The mean dmft/DMFT of subjects of parents with high educational level was 1.87 ± 3.18 while that of those from middle level was 3.68 ± 3.31 , and from lower level was 2.40 ± 2.51 .

The mean OHI-S of the total population in this study was 1.19 ± 1.27 . Females had a mean score of 1.31 ± 1.56 while males had 1.13 ± 0.90 with no significant sex difference ($p = 0.27$). 34 (59.65%) had good oral hygiene, 17 (29.82%) had fair oral hygiene and 6 (10.52%) had poor oral hygiene, with no significant difference across sex ($p = 0.04$), age groups ($p = 0.99$) and parents' educational level ($p = 0.61$) (Figures 1, 2 and 3). Seventeen (29.8%) had gingivitis with no significant difference across gender (Fisher's exact test = 0.05, $p = 0.43$), parents' educational level (Chi sq = 2.73, $p = 0.28$) and age groups (Chi sq = 6.3, $p = 0.31$). Forty-two (73.68%) had Angle's class I malocclusion, 9 (15.79%) class II and 6 (10.52%) class III. Chronologic enamel hypoplasia was found in 6 (10.52%) of the total population.

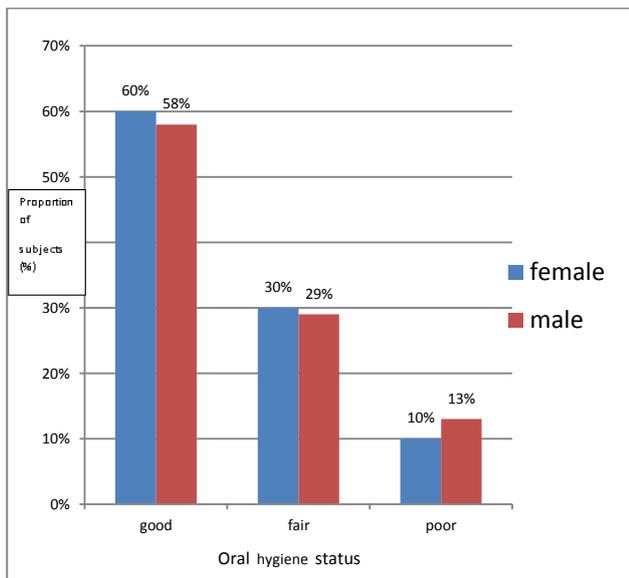


Figure1: Oral hygiene status of the study population according to gender

Up to 53.7% of the total population will require oral prophylaxis, 33.3% required restorations on their posterior teeth and 12.9% required veneers for labial facing of hypoplastic enamel (Figure 4).

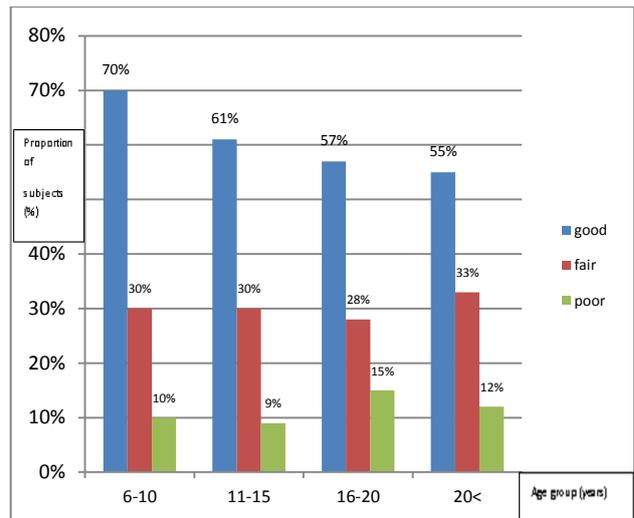


Figure2: Oral hygiene status of the study population according to gender

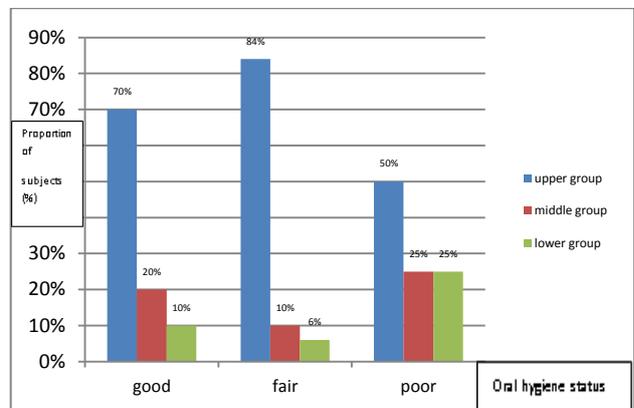


Figure 3. Oral hygiene status according to parents' educational status.

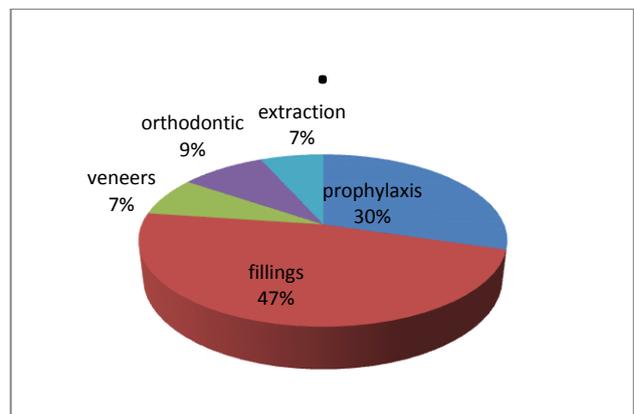


Figure 4. Treatment needs of the study population.

DISCUSSION

The institution where this study was carried out is located in an urban area, therefore patronized mostly by parents from the upper and middle socioeconomic status. It is expected that the higher the educational level of an individual, the better the health seeking behaviour of that individual and the family members. Generally the oral hygiene status of the studied population was good. 35.08% of the subjects were caries-free, Some authors

have however reported a lower caries prevalence in children with disabilities compared with those without disabilities.¹³⁻¹⁴ Our study concluded dmft to be 3.10, other studies have shown similar or lower results. The conflicting results from different studies may be due to different age groups, severity of impairments and different locality where the child lives. The major component of the 'decayed, missing and filled teeth' index was the decayed teeth (dt) which is similar to findings from studies in other countries.¹¹⁻¹² Some of the reasons given for increased occurrence of dental caries in this group of individuals are increased thirst, 'eating for consolation' or 'comfort' consumption of sweets and drinks¹³ and long-term consumption of medications in form of sweetened syrups. The caregivers of these children must be educated on the need to reduce and substitute cariogenic snacks with more healthy snacks such as fruits and vegetables.

In contrast to dental caries, almost half of the subjects in this study (59.65%) had good oral hygiene compared with lower proportions of those in earlier studies, but among children from parents of lower educational background.¹⁵⁻¹⁶ The OHI-S value in our study is 1.19 ± 1.27 . This shows that the educational status of parents has a positive effect on the dental care of persons with SHCN.¹⁷ These individuals require help for oral hygiene performance irrespective of their medical condition in order to achieve good oral hygiene. There was also no significant difference in the oral hygiene status across the gender, and age groups in this study. This is because most of these children are dependent on parents or caregivers to carry out their routine oral hygiene practices. These findings also confirm earlier studies reports that the prevalence of dental disease tends to be less affected by demographic factors in these children.¹⁸

Up to 53.7% of the total population will required oral prophylaxis, 33.3% required restorations on their posterior teeth and 12.9% required veneers for labial facing of hypoplastic enamel. Also 9% required orthodontic treatment and 7% required extractions. A high prevalence of unmet needs is still evident in this study despite the educational background of the parents and the fact that the school and residence of the subjects are located in an urban area of the state. There are various factors which create barriers to receiving oral health care even among the elite; these include low priority placed on oral health by parents and chronicity of oral diseases and more priority may be given to medical conditions.¹⁸ This group of children would also not be able to complain when in pain so the condition may go un-noticed until it reaches the acute phase. The treatment of these children can also be difficult as, they may not be able to cooperate in the dental chair. So while treating these children it may be necessary to use other forms of behaviour management methods such as restraining or sedation, for effective delivery of quality oral health care.

Receipt of timely dental services is of particular importance to children with special health-care needs because of the higher prevalence of structural

irregularities, infections and disease among these children compared with those in the general population. Primary health care providers may influence access to dental care by oral health assessment and prompt dental referral.

The number of participants in this study is less. Some subjects did not return their consent forms, some were not in school on the days of screening, some were very ill and some were uncooperative so excluded from participating. The admissions in such institutions are however increasing and more institutions are being established so larger populations are expected in future studies. So the large numbers of such children are taken care of.

CONCLUSION

Despite advances in oral health, oral diseases continue to be a problem. Children with disabilities have a significantly higher burden of oral diseases because of the lack of oral health knowledge, access to care, and preventive measures such as fluoride supplements and dental sealants of their caregivers. There was a high prevalence of dental caries and need for restorative care among the subjects in this study. Their oral hygiene was still good in many patients. Paediatricians should be encouraged to make timely dental referrals and advise parents on the importance of oral health. The dental team should plan to promote oral health by providing comprehensive school-based programs (including oral health education to help children develop skills), providing fluoride supplements and sealants, and offering dietary and nutrition counselling. With proper planning, clear communication, and carefully drawn limits to services provided, the dramatic oral health negligence experienced by so many of the disabled individuals can be successfully alleviated.

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