

Review began 10/13/2026

Review ended 10/20/2026

Published 10/23/2026

© Copyright 2026

Kaswan et al. This is an open access article distributed under the terms of the Creative Commons Attribution License CC-BY 4.0., which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

DOI: 10.7759/cureus.118438

Oral Health Disparities and Parental/Caregiver Role in Dental Care Among Children With Special Healthcare Needs and Children Without Special Healthcare Needs in Sriganganagar, Rajasthan: A Cross-Sectional Study

Rachna Kaswan¹, Mahima Singh¹, Sajan Narang², Kanika Yadav³, Thoihenbi Oinam¹

1. Pediatric Dentistry, Rajasthan University of Health Sciences, Jaipur, IND 2. Periodontics, Rajasthan University of Health Sciences, Jaipur, IND 3. Department of Prosthodontics, Surendera Dental College & Research Institute, Sriganganagar, IND

Corresponding author: Rachna Kaswan, rachnakaswan3@gmail.com

Abstract

Background: Children with special needs often face greater challenges in maintaining oral health due to physical, intellectual, or behavioral limitations. Their oral hygiene depends largely on caregivers and the accessibility of specialised dental care. This study aimed to compare the oral health status and treatment needs of special children with those of normal children in Sriganganagar district.

Methods: A cross-sectional study was conducted among 300 children aged 3-13 years, including two groups of 150 from regular schools (Group 1) and 150 from special schools (Group 2). Data were collected using a structured questionnaire and clinical examination based on WHO Oral Health Survey guidelines (1997). Dentition status, malocclusion, dental caries, and periodontal health were assessed. Statistical analysis was performed using SPSS software (IBM Corp., Armonk, NY) with Chi-square and t-tests to determine significant differences ($p < 0.05$).

Results: The study revealed significant differences between groups. Mothers were primary caregivers in Group 2, while fathers or guardians predominated in Group 1; caretakers were exclusive to Group 2. Children with special healthcare needs were mainly from the middle socioeconomic class ($p < 0.01$). Gender showed no difference ($p = 0.89$), but age distribution differed ($p = 0.02$). Group 2 had higher DMFT/dmfs scores, poorer oral hygiene, more gingival inflammation, and greater treatment needs ($p < 0.01$). Mixed dentition and moderate malocclusion predominated overall.

Conclusion: Children with special healthcare needs have poorer oral health than children without special healthcare needs, emphasising the need for early dental screening, caregiver education, and specialised or school-based programs to improve prevention and overall well-being.

Categories: Public Health, Dentistry

Keywords: care givers, children, dental care for disabled, hygiene, oral health

Introduction

The American Health Association defines a child with a disability as one who, for various reasons, cannot fully use their physical, mental, or social abilities, limiting their ability to play, learn, or perform tasks typical for their age [1]. Children and adolescents with disabilities generally experience poorer oral health than their non-disabled peers, showing higher rates of dental caries, missing teeth, periodontal disease, retained primary teeth, misalignment, and malocclusion [2].

Oral hygiene care for these children often depends on parents or caregivers, as many lack the capacity to manage their own oral health. However, limited awareness and inadequate knowledge among parents regarding proper brushing techniques and oral hygiene practices frequently lead to neglect. Educating caregivers about regular dental care and effective home routines is essential for maintaining their children's oral health [2,3].

Dental treatment for children with special healthcare needs is often overlooked due to multiple factors. Dentists may hesitate to treat such patients because of limited training or fear of behavioural challenges, while parents may prioritise other medical issues or face barriers such as financial constraints and lack of awareness. As a result, oral health often receives less attention than general health [4].

Collaborative efforts between families and dental professionals are vital, especially for children with

How to cite this article

Kaswan R, Singh M, Narang S, et al. (October 23, 2026) Oral Health Disparities and Parental/Caregiver Role in Dental Care Among Children With Special Healthcare Needs and Children Without Special Healthcare Needs in Sriganganagar, Rajasthan: A Cross-Sectional Study. Cureus 18(10): e118438. DOI 10.7759/cureus.118438

behavioural problems, movement disorders, or seizures that may lead to dental injuries. Untreated dental caries can cause pain, infection, and difficulties in eating, learning, and sleeping, negatively impacting a child's nutrition, growth, and overall well-being [5]. Effective communication and behaviour management play key roles in providing safe and comfortable dental care [3].

Limited research has been conducted on the oral hygiene of special children in Sriganganagar. Existing studies mainly focus on comparisons within groups of children with special healthcare needs, with few examining differences between children with and without special healthcare needs. Also, there is very little existing literature on caregiver relations with oral hygiene practice in children with special healthcare needs. Hence, the present study aims to compare the oral hygiene status, treatment needs, and dentition status of children with special healthcare needs and those without.

The objectives of this study were to compare the oral health status of children with and without special healthcare needs, including dental caries, oral hygiene, gingival health, dentition status, and malocclusion. It also aimed to compare dental treatment needs between the two groups and assess differences in parental/caregiver involvement in their children's oral healthcare.

Null hypothesis 1

There is no significant difference between children with and without special healthcare needs in terms of oral health status, dental treatment needs, and parental/caregiver involvement in oral healthcare.

Alternative hypothesis 1

There is a significant difference between children with and without special healthcare needs in terms of oral health status, dental treatment needs, and parental/caregiver involvement in oral healthcare.

Materials And Methods

A cross-sectional study was conducted among children with special healthcare needs in special schools aged 3-13 years and their peers in public schools of the same age group in Sriganganagar city. Ethical approval was acquired from the Institutional Ethics Committee with Letter No. SDCRI/IECD/D/24/66.

The study comprised a total of 300 children: 150 from regular schools, which served as the control group (Group 1), and 150 from special schools (Group 2). A sample size estimate was performed via G Power version 3.1.92 (Heinrich-Heine-Universität Düsseldorf, Düsseldorf, Germany). Power was maintained at 93%, and the effect size at 0.5.

The study included children aged 3-13 years with special healthcare needs, including those with visual impairments, hearing impairments, intellectual disabilities, cerebral palsy, physical disabilities, and other disabilities. A healthy control group comprising children aged 3-13 years without any reported disability or special healthcare needs was also included. Children below 3 years of age, those suffering from systemic diseases, and those diagnosed with autism spectrum disorder were excluded from the study.

Before the study, permission was obtained from school authorities. A written informed consent form (Appendix 1), prepared by the investigator, was obtained from all parents or guardians before participation after explaining the study protocol in detail. The study was conducted in four schools in the Sriganganagar district: three special schools catering to children with various disabilities and one general public school serving as the control group. Participants were recruited using convenience sampling based on their availability and eligibility according to the predefined inclusion and exclusion criteria.

Data collection was carried out through face-to-face interviews and clinical examinations by a single trained examiner. The data collection followed the World Health Organization (WHO) Oral Health Survey [6] and was modified to suit the study population.

The form used in this study had two sections. The form was questionnaire-based and followed guidelines from the WHO to learn about people's oral health. WHO has been creating these types of surveys since 1971. Certain modifications were made as that would be better adapted to our study population type. The questionnaire was face-validated by three subject experts (Paediatric Dentistry, Public Health Dentistry, Epidemiology). It was pretested among 20 samples for clarity and reliability (Cronbach's alpha = 0.82) and modified accordingly.

The first part of the form included a structured questionnaire that recorded sociodemographic details, type of disability, oral hygiene practices, dental pain experience, use of dental services, and toothbrushing habits (Appendices 2, 3) [6]. The second part involved an intraoral examination performed at the schools using a mouth mirror and WHO probe. Children were examined in regular chairs (Figure 1) or in the case of physical or sensory limitations in their wheelchairs or lying down under teacher supervision (Figure 2).



FIGURE 1: Child examined in regular chair



FIGURE 2: Child examined in wheelchair

The clinical assessment for dental caries and periodontal status was conducted according to WHO guidelines using a WHO probe. This study relies on the dental caries assessment using the decayed, missing, and filled teeth (DMFT/dmft and DMFS/dmfs) (Appendices 4, 5), dentition and malocclusion status, and treatment needs (Appendix 6) index according to the diagnostic criteria outlined by the WHO in Oral Health Surveys: Basic Methods, 5th edition, 2013 [7]. Oral hygiene status was assessed using the Simplified Oral Hygiene Index (OHI-S) (Appendix 7), comprising the Debris Index-Simplified (DI-S) (Appendix 8), Calculus Index-Simplified (CI-S) (Appendix 9), and gingival and periodontal assessment (Appendix 10), developed by Greene and Vermillion [8]. The source materials were openly accessible and could be reproduced under the applicable terms of use; therefore, no separate permission was required for their use or reproduction.

Data were recorded in an Excel (Microsoft Corp., Redmond, WA, USA) sheet with patient names and identification numbers. Statistical analysis of the collected data was performed using IBM SPSS Statistics for Windows, version 22.0 (IBM Corp., Armonk, NY, USA). The t-test compared the average plaque scores and DMFT between the two groups. The Chi-square test identified significant differences in the data ($p < 0.05$).

Results

Table 1 shows a comparative analysis of caregiver roles and socioeconomic status between Group 1 and Group 2, which revealed that a significantly higher proportion of mothers served as primary caregivers in Group 2, whereas fathers or guardians predominated in Group 1. Caretakers were exclusive to Group 2. Socioeconomic distribution also differed significantly, with Group 2 children more frequently belonging to the middle socioeconomic class ($p < 0.01$).

Relation	Group		Chi square	p-value
	Children without special healthcare needs (Group 1) (N=150)	Children with special healthcare needs (Group 2) (N=150)		
Mother	N=24 (16.0%)	N=71 (47.3%)	71.27	<0.01*
Father, guardian	N=126 (84.0%)	N=57 (38.0%)		
Caretaker	N=0 (0.0%)	N=22 (14.7%)		
Total	N=150 (100.0%)	N=150 (100.0%)		
Status				
Upper socioeconomic	N=37 (24.7%)	N=19 (12.7%)	20.11	<0.01*
Medium socioeconomic	N=49 (32.7%)	N=87 (58.0%)		
Lower socioeconomic	N=64 (42.7%)	N=44 (29.3%)		
Total	N=150 (100.0%)	N=150 (100.0%)		

TABLE 1: Distribution of the study population according to caregiver role and socioeconomic status of children

*indicates a statistically significant difference, with $p < 0.05$.

Comparison of gender distribution between the two groups showed no significant difference ($p = 0.89$). However, age distribution varied significantly ($p = 0.02$), with a higher proportion of younger children (3-6 years) in the normal group and more older children (7-10 years) in Group 2 (Table 2).

Gender	Group		Chi square	p-value
	Children without special healthcare needs (Group 1) (N=150)	Children with special healthcare needs (Group 2) (N=150)		
Male	N=105 (70.0%)	N=106 (70.7%)	0.02	0.89
Female	N=45 (30.0%)	N=44 (29.3%)		
Total	N=150 (100.0%)	N=150 (100.0%)		
Age group, years				
3-6	N=71 (47.3%)	N=48 (32.0%)	8.13	0.02*
7-10	N=79 (52.7%)	N=101 (67.3%)		
11-13	N=0 (0.0%)	N=1 (0.7%)		
Total	N=150 (100.0%)	N=150 (100.0%)		

TABLE 2: Comparison of gender and age distribution between the normal and special children groups

*indicates a statistically significant difference, with $p < 0.05$.

Figure 3 and Table 3 depict bar graph representing dental condition of two groups, Group 1 and 2, using DMFT, as well as the total DMFT score in which special children exhibited higher scores for decayed teeth and surfaces, as well as higher total dmft and dmfs values, indicating Group 2 has poorer dental health compared with Group 1.

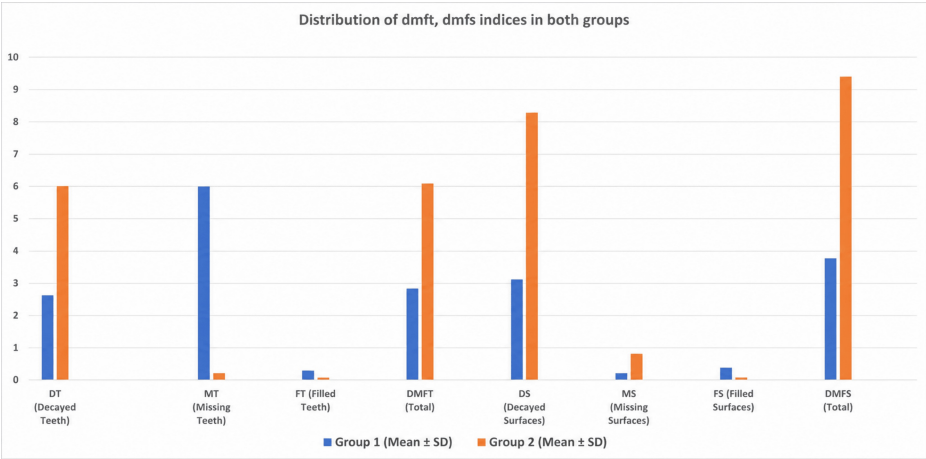


FIGURE 3: Distribution of dmft, dmfs indices in both groups

Category	Group		t-test	p-value
	Children without special healthcare needs (Group 1) (mean ± SD)	Children without special healthcare needs (Group 2) (mean ± SD)		
DT (decayed teeth)	2.63±2.324	6.01±2.540	12.02	<0.001*
MT (missing teeth)	0.06±0.2380	0.21±0.522	9.80	0.002*
FT (filled teeth)	0.29±0.708	0.06±0.289	13.18	<0.01*
DMFT (total)	2.84±2.578	6.09±2.781	10.79	<0.001*
DS (decayed surfaces)	3.12±3.198	8.29±3.829	12.79	<0.001*
MS (missing surfaces)	0.21±0.902	0.81±2.222	9.19	0.003*
FS (filled surfaces)	0.38±0.932	0.07±0.386	13.87	<0.01*
DMFS (total)	3.77±3.547	9.40±6.844	9.16	<0.001*

TABLE 3: Distribution of dmft, dmfs indices in both groups

*indicates a statistically significant difference, with p<0.05.

A significant difference was observed between groups in oral hygiene, gingival status, and treatment needs (p<0.01). Group 2 demonstrated poorer oral hygiene, higher gingival inflammation, and greater treatment requirements, with a larger proportion requiring prompt or urgent care than Group 1 (Table 4).

Category	Group		Chi square	p-value
	Children without special healthcare needs (Group 1) (N=150)	Children with special healthcare needs (Group 2) (N=150)		
OHI (oral hygiene index)				
Good	N=7 (4.7%)	N=2 (1.3%)	82.93	<0.01*
Fair	N=90 (60.0%)	N=22 (14.7%)		
Poor	N=50 (33.3%)	N=91 (60.7%)		
Very poor	N=3 (2.0%)	N=35 (23.3%)		
Total	N=150 (100.0%)	N=150 (100.0%)		
GI (gingival index)				
Normal	N=55 (36.7%)	N=26 (17.3%)	23.37	<0.01*
Mild inflammation	N=79 (52.7%)	N=81 (54.0%)		
Moderate inflammation	N=16 (10.7%)	N=41 (27.3%)		
Severe inflammation	N=0 (0.0%)	N=2 (1.3%)		
Total	N=150 (100.0%)	N=150 (100.0%)		
TN (treatment need)				
No treatment needed	N=45 (30.0%)	N=5 (3.3%)	45.72	<0.01*
Preventive or routine treatment needed	N=55 (36.7%)	N=51 (34.0%)		
Prompt treatment, including scaling needed	N=35 (23.3%)	N=63 (42.0%)		
Immediate (urgent) treatment needed due to pain or infection	N=15 (10.0%)	N=31 (20.7%)		
Total	N=150 (100.0%)	N=150 (100.0%)		

TABLE 4: Distribution of oral hygiene index, gingival index, treatment needs among study group

*indicates a statistically significant difference, with $p < 0.05$.

The comparison between dentition and occlusion patterns between Group 1 and Group 2 children showed that mixed dentition was predominant in both groups. Moderate malocclusion was the most frequent type observed, with a slightly higher prevalence in Group 1, while severe malocclusion appeared more frequently among Group 2 (Figure 4).

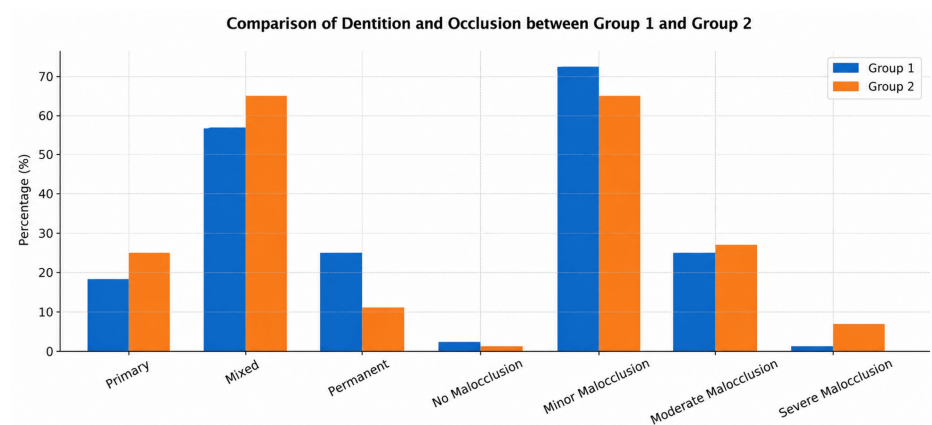


FIGURE 4: Comparison of dentition and occlusion between normal and special children

Discussion

Children with physical and intellectual disabilities constitute a special needs group that experiences significantly poorer oral health compared with their normal peers. Limited awareness, difficulty in maintaining oral hygiene, dependence on caregivers, and reduced access to dental services all contribute to higher rates of dental disease [9]. The present survey conducted among special and normal children in Sriganganagar revealed clear disparities in oral health status, oral hygiene, and treatment needs.

The study reaffirmed that special children often struggle to maintain adequate oral hygiene due to limited motor skills, poor understanding of the importance of oral care, and difficulties in communication. Many are dependent on parents or caretakers, whose awareness and involvement directly influence their child's dental health. Caregivers often prioritise medical issues over oral health or face barriers such as long wait times, behavioural challenges during dental visits, and limited access to trained professionals. Strengthening caregiver education and expanding specialised dental training are therefore essential for improving oral health outcomes in this population [10].

In the present study, the mean DMFT score for children with special healthcare needs was markedly higher than that of children without special healthcare needs, indicating a higher caries burden. This finding aligns with several previous studies reporting greater caries experience among children with special healthcare needs, though a few studies noted lower values depending on the type and severity of disability [11,12]. In contrast, Kamatchy et al. showed lower mean DMFT scores for children with different types of special healthcare needs, all of which were lower than the values found in the current study [13].

Gingival and periodontal health were also poorer among children with special healthcare needs, with moderate-to-severe inflammation occurring more frequently than in children without special healthcare needs. Poor manual dexterity, inadequate brushing techniques, and the side effects of certain medications, particularly anticonvulsants, may explain this trend, which was similar to the findings reported by Blankson et al. [14]. Nicolaci and Tesini observed a high prevalence of poor oral hygiene among individuals with disabilities, particularly among those with intellectual disabilities [15].

A greater proportion of special children belonged to lower or middle socioeconomic categories, correlating with poorer oral hygiene and higher caries prevalence. Previous research supports this association, suggesting that limited financial resources, poor diet quality, and reduced access to care contribute to oral disease [16]. Gender, however, did not show a significant impact on oral health in the present study.

The treatment needs of children with special healthcare needs were considerably higher, with 42% requiring urgent care compared with 23.3% of normal children. This reflects a combination of parental inattention, limited school-based interventions, and communication challenges. Targeted dental education programs for both parents and teachers could help improve early detection and preventive care. Preventive and patient-centred dentistry focusing on behaviour management, desensitisation, and caregiver participation should be prioritised for this group.

Although minor malocclusion was common in both groups, severe malocclusion was more prevalent among children with special healthcare needs. Malocclusion can affect esthetics, speech, and psychosocial well-being, especially in children with developmental disorders. Studies have shown similar trends, emphasising the need for early orthodontic assessment and intervention [17,18].

Limitations of the study

The sample size was limited to children from a specific geographic region, which may not represent the broader population. Convenience sampling was used to recruit participants based on their availability and eligibility according to the predefined inclusion and exclusion criteria. As the children were recruited from a limited number of schools in a single geographic region, the findings may not fully represent the wider population of children with and without special healthcare needs. Differences in access to care, dietary habits, and socioeconomic factors across regions could influence the generalisability of these findings.

The study relied on cross-sectional data, which provide only a snapshot in time and does not allow assessment of changes in oral health status or the long-term effects of interventions.

Third, the evaluation of oral hygiene and occlusal status was conducted through clinical examination only, without radiographic confirmation, which may have led to under- or over-estimation of dental caries or malocclusion severity.

The age distribution differed significantly between the normal and special groups, which may have influenced the observed differences in dental caries experience, dentition stage, oral hygiene status, and treatment needs. As age-adjusted analyses were not performed, the potential confounding effect of age cannot be excluded. Therefore, the observed differences in oral health outcomes should be interpreted with caution.

Conclusions

The study found that children with special healthcare needs have poorer oral health and greater treatment needs than children without special healthcare needs. It emphasises the importance of specialised dental clinics, caregiver involvement, preventive education, and early intervention. Integrating dental programs into special schools and encouraging regular dental check-ups should be considered as potential strategies to improve oral health and quality of life, with their effectiveness evaluated in future studies.

Appendices

Appendix 1

Informed Consent Form

SURENDRA DENTAL COLLEGE & RESEARCH INSTITUTE, SRI GANGANAGAR

(DEPARTMENT OF PAEDIATRIC AND PREVENTIVE DENTISTRY)

Title: 'ORAL HEALTH DISPARITIES' - A STUDY OF CHILDREN WITH DISABILITY IN SPECIAL SCHOOL VERSUS GENERAL PUBLIC SCHOOL

Study Subject No.: _____ OPD No.: _____

Subject's Full Name: _____

Date of Birth/Age: _____

Address: _____

1. I confirm that I have read and understood information sheet dated _____ for the above study and have had the opportunity to ask questions.

Or, I have been explained the nature of the study by the investigator and had the opportunity to ask questions.

2. I understand that my participation in the study is voluntary and that I am free to withdraw at any time, without having any reason and without my medical care or legal rights being affected.

3. I understand that the sponsor of the clinical trial/project, others working on the sponsor's behalf, the Ethics committee and the

regulatory authorities will not need my permission to look at my health records both in respect of the current study and future research that may be conducted in relation to it, even if I withdraw from the trial. However, I understand that my identity will not be revealed in any information released to third parties.

4. Not to restrict the use of any data or results that arises from this study provided such a use is only for scientific purpose.

5. I agree to take part in the above study.

Signature or thumb impression of the subject/parent/guardian: _____

Signatory's name: _____ Date: _____

Signature of Investigator: _____ Date: _____

Study investigator's Name: _____ Date: _____

Signature of witness: _____ Date: _____

Name of the witness: _____ Date: _____

Appendix 2

Questionnaire/General Information

Question/variable	Answer
1. Name	Child's name: _____
1. Sex	Boy
	Girl
1. Socioeconomic status	Upper class
	Middle class
	Lower class
2. Date of birth of the child	Date: _____
3. Family type	Nuclear
	Joint
	No cleaning
4. Frequency of brushing	Once a day
	Twice a day
	More than twice a day
5. Type of brush	Hard brush
	Soft brush
	Ultra-soft brush
	Not sure
	Yes
6. During the past 12 months, did your teeth or mouth cause any pain or discomfort?	No
	Don't know
	Excellent
	Good
	Average
	Poor
	Very poor

7. Health of Gums	Don't know
	Excellent
	Good
	Average
	Poor
	Very poor
	Don't know
8. Reason for the last visit to the dentist	Pain or trouble with teeth, gums or mouth
	Treatment/follow-up treatment
	Routine check-up of teeth/treatment
	I don't know/don't remember
9. Use to clean teeth or gums: Toothbrush	Yes
	No
9. Use to clean teeth or gums: Wooden/plastic toothpicks	Yes
	No
9. Use to clean teeth or gums: Powder	Yes
	No
9. Use to clean teeth or gums: Finger	Yes
	No
9. Use to clean teeth or gums: Thread (dental floss) 9. Use to clean teeth or gums: Thread (dental floss)	Yes
	No
10. Who helps you while brushing?	Self
	Mother
	Guardian/caregiver
11. Do you use toothpaste to clean your teeth?	Yes
	No
	Don't know
11. Do you use toothpaste that contains fluoride?	Yes
	No
	Don't know
12. Difficulty biting hard foods during the past year	Yes
	No
	Don't know
12. Difficulty in chewing during the past year	Yes
	No
	Don't know
13. Food or drink frequency: Fresh fruit	Several times a day
	Every day
	Several times a week

13. Food or drink frequency: Biscuits, cakes, cream cakes

- Once a week
- Several times a month
- Seldom/never
- Several times a day
- Every day
- Several times a week
- Once a week
- Several times a month
- Seldom/never
- Several times a day
- Every day
- Several times a week
- Once a week
- Several times a month
- Seldom/never
- Several times a day
- Every day
- Several times a week
- Once a week
- Several times a month
- Seldom/never
- Several times a day
- Every day
- Several times a week
- Once a week
- Several times a month
- Seldom/never
- Several times a day
- Every day
- Several times a week
- Once a week
- Several times a month
- Seldom/never
- Several times a day
- Every day
- Several times a week
- Once a week
- Several times a month
- Seldom/never
- No formal schooling

13. Food or drink frequency: Jam or honey

13. Food or drink frequency: Chewing gum containing sugar

13. Food or drink frequency: Sweets/candy

13. Food or drink frequency: Lemonade, Coca Cola or other soft drinks

13. Food or drink frequency: Milk/tea/coffee with sugar

14. Education level of mother

Less than primary school
Primary school completed
Secondary school completed
High school completed

14. Education level of father

No formal schooling
Less than primary school
Primary school completed
Secondary school completed
High school completed
College/university completed
Don't know

15. Oral hygiene status

Good
Fair
Poor

TABLE 5: Questionnaire carrying information about type of disability, sociodemographic factors, oral hygiene habits, dental pain, use of dental services, and tooth brushing habits

Appendix 3
Clinical Examination

Parameter	Recording
Name	
Age	
Sex	
Education level	
Socioeconomic status	

TABLE 6: Demographic information

Appendix 4

Tooth/index component	DMFS recording
55	
54	
53	
52	
51	
61	
62	

63	
64	
65	
17	
16	
15	
14	
13	
12	
11	
21	
22	
23	
24	
25	
26	
27	
85	
84	
83	
82	
81	
71	
72	
73	
74	
75	
47	
46	
45	
44	
43	
42	
41	
31	
32	
33	
34	
35	
36	

Table with 2 columns: Component, Recording line. Rows include 37, DS, MS, FS, DMFS.

TABLE 7: Recording format for DMFS index

Appendix 5

Table with 2 columns: Tooth/index component, DMFT recording. Rows list tooth numbers from 55 down to 81.

71	
72	
73	
74	
75	
47	
46	
45	
44	
43	
42	
41	
31	
32	
33	
34	
35	
36	
37	
DT	
MT	
FT	
DMFT	

TABLE 8: Recording format for DMFT index

Appendix 6

Assessment domain	Category/stage	Clinical finding/recording
Dentition status	Primary dentition	Present/absent_____
	Mixed dentition	Present/absent_____
	Permanent dentition	Present/absent _____
Malocclusion status	No malocclusion	Absent
	Minor occlusal irregularities	Spacing
	Minor occlusal irregularities	Crowding
	Moderate-to-severe malocclusion	Crossbite
	Moderate-to-severe malocclusion	Deep bite
	Severe dentofacial anomalies	Present/absent

TABLE 9: Dentition and malocclusion status

Appendix 7

Index tooth/component	DI-S recording
16	_____
11	_____
26	_____
46	_____
31	_____
36	_____
DI-S	_____
DI-S interpretation	_____

TABLE 10: Debris index-simplified (DI-S)

Appendix 8

Index tooth/component	CI-S recording
16	_____
11	_____
26	_____
46	_____
31	_____
36	_____
CI-S	_____
CI-S interpretation	_____

TABLE 11: Calculus index-simplified (CI-S)

Appendix 9

Parameter	Recording
OHI-S	_____
OHI-S interpretation	_____

TABLE 12: Overall oral hygiene index-simplified (OHI-S)

Appendix 10

Index tooth	Gingival/periodontal score
16	_____
11	_____
26	_____
46	_____
31	_____
36	_____

TABLE 13: Gingival and periodontal assessment

Additional Information

Author Contributions

All authors have reviewed the final version to be published and agreed to be accountable for all aspects of the work.

Concept and design: Mahima Singh, Rachna Kaswan

Acquisition, analysis, or interpretation of data: Mahima Singh, Rachna Kaswan, Thoihenbi Oinam, Sajan Narang, Kanika Yadav

Drafting of the manuscript: Mahima Singh, Rachna Kaswan, Thoihenbi Oinam, Sajan Narang, Kanika Yadav

Critical review of the manuscript for important intellectual content: Mahima Singh, Rachna Kaswan, Thoihenbi Oinam, Sajan Narang, Kanika Yadav

Supervision: Rachna Kaswan

Disclosures

Human subjects: Informed consent for treatment and open access publication was obtained or waived by all participants in this study. Institutional Ethical Committee of Surendera Dental College and Research Institute issued approval Letter no. SDCRI/IECD/D/24/66. **Animal subjects:** All authors have confirmed that this study did not involve animal subjects or tissue. **Conflicts of interest:** In compliance with the ICMJE uniform disclosure form, all authors declare the following: **Payment/services info:** All authors have declared that no financial support was received from any organization for the submitted work. **Financial relationships:** All authors have declared that they have no financial relationships at present or within the previous three years with any organizations that might have an interest in the submitted work. **Other relationships:** All authors have declared that there are no other relationships or activities that could appear to have influenced the submitted work.

References

- Altun C, Guven G, Akgun OM, Akkurt MD, Basak F, Akbulut E: Oral health status of disabled individuals attending special schools. *Eur J Dent*. 2010, 4:361-6.
- Alamri H: Oral care for children with special healthcare needs in dentistry: a literature review . *J Clin Med*. 2022, 11:5557. [10.3390/jcm11195557](https://doi.org/10.3390/jcm11195557)
- Mehta A, Gupta R, Mansoor S, Mansoori S : Assessment of oral health status of children with special needs in Delhi, India. *RSBO (Online)*. 2015, 12:244-51.
- Udin RD: Assessing dental manageability of handicapped children . *J Pedod*. 1988, 13:29-37.
- Waldman HB: Almost four million children with disabilities . *ASDC J Dent Child*. 1995, 62:205-9.
- World Health Organization: Oral Health Surveys: Basic Methods, 1st edition . World Health Organization (ed): World Health Organization, The University of Michigan; 1971.
- World Health Organization: Oral Health Surveys: Basic Methods, 5th edition . World Health Organization, The University of California; 2015.
- Greene JC, Vermillion JR : The simplified oral hygiene index . *J Am Dent Assoc*. 1964, 68:7-13.
- Alyami Y, Alamri RN, Abdulsamad MA, et al.: Assessment of oral health status and communication barriers in hearing- and speech-impaired children in Jeddah city. *Cureus*. 2022, 14:e23277. [10.7759/cureus.23277](https://doi.org/10.7759/cureus.23277)
- Altun C, Guven G, Akgun OM, Akkurt MD, Basak F, Akbulut E: Oral health status of disabled individuals oral health status of disabled individuals attending special schools. *Eur J Dent*. 2010, 4:361-66.
- Prasad M, Patthi B, Singla A, Gupta R, Niraj L, Ali I: Special care with special child-oral health status of differently abled children attending special schools in Delhi: a cross-sectional study. *J Indian Assoc Public Health Dent*. 2018, 16:137-43. [10.4103/jiaphd.jiaphd_142_17](https://doi.org/10.4103/jiaphd.jiaphd_142_17)
- Ivancić Jokić N, Majstorović M, Bakarčić D, Katalinić A, Szivovica L: Dental caries in disabled children . *Coll Antropol*. 2007, 31:321-4.
- Kamatchy KR, Joseph J, Krishnan CG: Dental caries prevalence and experience among the group of institutionalized hearing impaired individuals in Pondicherry--a descriptive study. *Indian J Dent Res*. 2003, 14:29-32.
- Blankson PK, Amoah G, Thadani M, et al.: Prevalence of oral conditions and associated factors among schoolchildren in Accra, Ghana: a cross-sectional study. *Int Dent J*. 2022, 72:93-9.
- Nicolaci AB, Tesini DA: Improvement in the oral hygiene of institutionalized mentally retarded individuals through training of direct care staff: a longitudinal study. *Spec Care Dentist*. 1982, 2:217-21. [10.1111/j.1754-4505.1982.tb00059.x](https://doi.org/10.1111/j.1754-4505.1982.tb00059.x)
- Gangrade N, Figueroa J, Leak TM: Socioeconomic disparities in foods/beverages and nutrients consumed by U.S. adolescents when snacking: National Health and Nutrition Examination Survey 2005-2018. *Nutrients*. 2021, 13:2530. [10.3390/nu13082530](https://doi.org/10.3390/nu13082530)
- Kaye PL, Fiske J, Bower EJ, Newton JT, Fenlon M: Views and experiences of parents and siblings of adults with Down Syndrome regarding oral healthcare: a qualitative and quantitative study. *Br Dent J*. 2005, 198:571-8. [10.1038/sj.bdj.4812305](https://doi.org/10.1038/sj.bdj.4812305)
- Tandon P, Jha S, Tandon R, Sondhi D, Chandra M, Trivedi JK: Oro-dental pattern in mentally retarded. *Indian J Psychiatry*. 1990, 32:185-7.