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Review Article

Global perspectives on oral health care for children with special needs: Strategies, barriers, and opportunities: A review

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Abstract

Oral health is an important aspect of general health, especially for vulnerable groups. It is important to provide appropriate oral care in order to promote quality of life and well-being for everyone. Children with special health care needs (CSHCN) are often overlooked and face significant barriers in achieving optimal oral health despite a substantial global population with disabilities. This review analyses recent findings on the oral health status of these children, highlights systemic challenges, and discusses global strategies aimed at improving care delivery establishing integrated and equitable special needs dentistry care systems. The knowledge gap underlines the necessity for review aimed at collating data on oral health status of these children which might provide data required to develop future preventive and intervention efforts focused on reducing oral health disparities. Coordinated efforts by dental professionals are needed to provide dental health education and preventive intervention for these children.

Keywords: Disabled children, Oral health, Dental care, Dental care for disabled, Access to care, Children with special needs.

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1. Introduction

Children with special health care needs (CSHCN) under age of 18 include a diverse group with chronic physical, developmental, behavioral, or emotional conditions including Intellectual disability (ID), Down syndrome (DS), Autism spectrum disorder, Cerebral palsy, Epilepsy and attention deficit hyperactivity disorder (ADHD) requiring specialized health services. Open-bite and dysphagia usually occur in children with DS and increased plague give rise to poor oral hygiene. In particular individuals with ASD have poor dietary preferences, behaviour aversion, bruxism, gingival picking, repeated regurgitation that may cause tooth avulsion. CSHCN requires special assistance as they have difficulty in understanding (mentally challenges), scoliosis, unsteady gait or physically challenged limb tone.[1,] There is a lack of accurate global data on how many people have special needs or disabilities. It's important to urgently gather reliable, consistent, and complete information on this. It can be problematic to obtain accurate data on children living with special health needs given the spectrum of conditions. In developing countries, identifying and classifying special healthcare needs is challenging due to lack of data collection tools that are suitable for specific cultural and language contexts.[2] According to the National Family Health Survey (NFHS - 5) in 2019 there are 5,299 children aged 0-14 years with intellectual disabilities in India. Anxiety and refusal to cooperate alleviates a patient's own suffering. Carer and unskilled dental professionals are often unwilling to address children with intellectual and developmental disabilities (IDD) especially from unprivileged backgrounds that contribute to oral disparities.[3] To address this health disparity United Nations (UN) members along with India have committed to the Sustainable Development Goals (SDGs) 2030 principle of "Leave no one Behind "which seeks to reduce disparities.[4] Globally, the World Health Organization's 2023–2030 Global Oral Health Action Plan emphasizes the integration of oral health into primary health care and the importance of addressing the needs of vulnerable populations, including CSHCN.[4] Children with SHCNs

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should, regardless of difficulty, be able to obtain good oral health which includes an absence of pain and the capacity to consume and enjoy food. However reality is quite different as notable developments have been recorded in oral healthcare through decades, the problem of delivering good oral health to children with SHCNs persists.[5] Addressing these disparities requires a multifaceted approach, encompassing policy reforms, enhanced training for dental professionals, and community-based programs to ensure equitable access to oral health care for all children.[6]

2. Material and Methods

2.1. Study design

This narrative review was conducted to synthesize recent global evidence on oral health care challenges and strategies for children with special health care needs (CSHCN). The methodological approach followed the PRISMA guidelines for transparent and comprehensive reporting.

2.2. Inclusion criteria

Systematic review and narrative review articles published from 2016 - 2024. Studies involving children aged 0–18 years. Focus on oral health care, dental access, interventions, or policy related to special needs/disabilities.

2.3. Exclusion criteria

Study involving adult population only. Conference abstracts without full text.

2.4. Study selection

1. A total of 150 articles were initially retrieved
2. Removed 44 duplicate, 104 records were seen based on title and abstracts.
3. 68 records were excluded due to irrelevance.
4. 38 full articles were assessed for eligibility.
5. 22 studies were excluded as there was less focus on oral health and adult population

Finally, 16 articles met all inclusion criteria and were selected for data synthesis

2.5. Data extraction

A structured data extraction form was used, including:

1. Population characteristics.
2. Type of disability. Key findings on oral health status.
3. Barriers and facilitators.
4. Policy or program interventions.
5. Outcomes and recommendations.

A qualitative narrative synthesis approach was used to summarize findings:

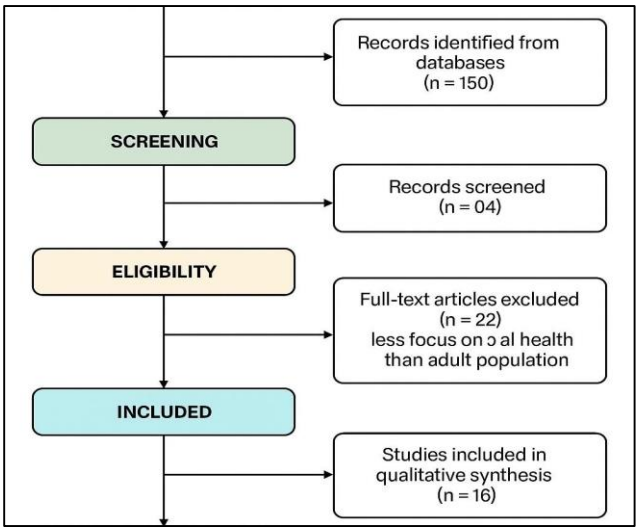

Figure 1: The PRISMA flow chart for selection of articles

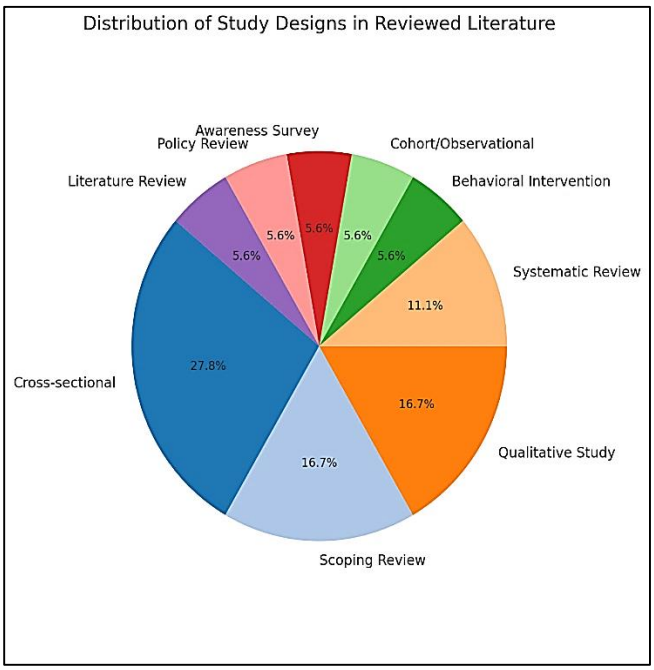

Figure 2: Distribution of study designs in reviewed literature

3. Results

A total of 16 studies met the inclusion criteria and were included in the final review. These studies were conducted across various countries, primarily India, but also in regions such as the UK, USA, Saudi Arabia, Australia, and Indonesia. Most were published between 2011and 2024 and included systematic reviews, scoping reviews, qualitative studies, cross-sectional surveys, randomized controlled trials, and mixed-methods designs.

Table 1: The characteristics of included studies

Ref. No.	First Author	Study Design	Country
1	Dasson Bajaj	Scoping Review	India
2	M A	Cross-sectional/Observational	India
3	Tuli S	Scoping Review	India
4	Khan AJ	Systematic Review	Global
5	United Nations	Report/Policy Review	Asia-Pacific Region
6	Esposito M	Behavioural Intervention Study	Italy
7	Mishu MP	Qualitative Study	UK
8	Kumar P	Cross-sectional Survey	India
9 & 14	Vishnu P	Cross-sectional Study	India
10	Alamri H	Literature Review	Saudi Arabia
11	Marques KLDS	Qualitative Study	Brazil
12	Divaris K	Cohort/Observational Study	USA
13	Bastani P	Scoping Review	Global
15	Doichinova L	Awareness Survey	Bulgaria
16	Koneti LR	Cross-sectional Study	India
17	Suprabha BS	Qualitative Study	India
18	Da Silva SN	Systematic Review + Meta-analysis	Global
19	Cruz S	Survey Study	UK
20	Almran A	Survey Study	Saudi Arabia

4. Discussion

The oral health of children with intellectual disabilities has long been an area of concern in both dental practice and public health. This review article highlights the significant disparities in oral health status and status and care access between children with ID and their neurotypical peers. Across various study types and geographic contexts, one consistent finding was that children with intellectual disabilities suffer from higher prevalence of dental caries, periodontal diseases, malocclusion, and poor oral hygiene.[7] These findings are not isolated but represent a global challenge, indicating the need for a systemic and comprehensive approach. The findings of this review underscore the persistent and multidimensional challenges in providing equitable oral health care to children with intellectual disabilities (ID).[8] These challenges span clinical, caregiver-related, systemic, and policy domains, with implications for both dental professionals and public health systems. Children with intellectual disabilities (ID) often face a significantly greater burden of oral health issues, including dental caries, gum disease, and inadequate oral hygiene, than their neurotypical peers.[9] This elevated risk is influenced by factors such as impaired motor skills, neuromuscular challenges, specific dietary patterns, and a reliance on caregivers for daily oral care routines. A key factor contributing to this disparity is due to physical and cognitive challenges that hinder basic oral hygiene routines. CSHN frequently experience impaired neuromuscular coordination which makes it difficult for them to brush and floss their teeth on their own.[10] Moreover co-occurring behavioural conditions like autism or attention-deficit hyperactivity disorder can result in oral sensitivity. Even routine oral care can become a complex task for children with ID requiring additional support from caregivers and behavior management techniques.

4.1. Role of caregivers as the first line of defense

The role of caregivers, especially mothers, were shown to play a central role in influencing children's oral hygiene practices. Studies pointed out that caregivers often lack adequate training along with time and resources. The evidence. The evidence underscores the necessity of caregiver interventions designed to enhance their knowledge, skills and confidence in managing children's oral health.[11] Effective strategies include structured training workshops, linguistically tailored visual aids and ongoing support systems that reinforce positive oral health behaviours. Such interventions have been shown to significantly improve caregiver's knowledge, attitudes and practices, which in turn positively influence the oral health status of children under their care. For example, educational programs targeting caregivers have resulted in improved oral hygiene indices. However, low oral health literacy, lack of training, and competing caregiving demands often reduce their effectiveness. This underscores the need for caregiver-centric interventions and education programs that are linguistically and culturally tailored.[12]

4.2. Policy and programmatic gaps

Despite WHO's 2024 policy recommendations advocating the inclusion of children with special healthcare needs (CSHCN) in national oral health strategies, translation into actionable policies remains inadequate. The implementation is often hindered by fragmented service delivery and insufficient funding.[13] Although the World Health Organization's 2024 guidelines strongly recommend including children with special healthcare needs in national oral health plans, there is still a notable shortfall in turning these recommendations into effective policies. The WHO's Global Oral Health Strategy and Action Plan for 2023–2030 provides a detailed framework to incorporate oral health into broader health coverage and disease prevention efforts, focusing on vulnerable groups like CSHCN. Moreover, multiple barriers such as cost, geographic accessibility, cultural differences, and limited health literacy among families further restrict access to dental care for CSHCN, worsening health disparities.[14] The WHO emphasizes integrating oral health into primary healthcare with a preventive, patient-focused approach, but many national programs have yet to fully implement this model for children with special needs. Despite this, implementation is often obstructed by fragmented healthcare services and a lack of sufficient funding dedicated to these children's oral health needs.[15]

4.3. Evidence for intervention strategies

The availability of dentists cannot be considered an issue in India. The dentist- to- population ratio in India ranges from 1: 1000 to 1: 20 000 varying depending on states. Urban areas have more accessibility to dentists while in rural areas non availability might impede access. Nonetheless our findings suggest that most dentists are unprepared to cater the needs of an individual with IDD.[16] Barriers faced by dentists include infrastructure limitations, lack of training, availability of specialists. While most dentists reported a willing attitude, they require support to overcome these challenges. These facts emphasise the need to introduce special care dentistry training at undergraduate level and to include training programs to assist in the field. Indian Dental Association and the International Association of Disability and Oral Health, should consider developing guidelines for prevention and care of people with IDD.[17] Additionally the Indian association of Paediatric and Preventive Dentistry recently started a special care dentistry certificate course, which is regarded as an important step forward. India could also model high income countries by recognising special care dentistry as a speciality.[18] Encouragingly, several studies demonstrated the effectiveness of targeted interventions. School based programs, behavioural therapy for children with autism and integrated care models yielded measurable improvements in oral hygiene behaviours and health outcomes. These findings suggest a promising future for interprofessional, community-based care tailored to children with ID.[19,20]

Table 2: Addressing issues in the system

Issue in System	Examples occurring in oral healthcare delivery system
Dependence on Technology	When the patient is confines to bed or wheelchair When the patient is respiratory dependent Prompting more than one visit, due to gastronomy feeding
Dependence on Caregiver	Oral healthcare and the delivery of home health activities are affected due to the blurring of roles Dire lack of clarity when it comes to consent, payment and other problems mainly related to the care service.
Dire lack of proper definition when it comes to oral healthcare	Issues in reimbursement system and negligence of medical requirements and facilitations. Issues pertaining to focus oral healthcare sub-departments.
Lack of services	Oral health care offered by under skilled practitioners Inappropriate services getting practicing getting approved
Care in financing section	Low payment systems in various dental treatments in public campaigns
Care Delivery Models	Institutional dental services being poor in quality. Skilled oral health expertise needed for CWSHN
Issues in quality of dental service system	Inappropriate quality management system, standards and measures

4.4. Gaps in the literature

While several high-quality studies exist, there remains a dearth of longitudinal, large-scale evaluations, especially in low- and middle-income countries (LMICs). Additionally, lack of standardized outcome measures and variability in study designs complicate cross-study comparisons. More participatory research involving children and caregivers is also warranted. Addressing the disconnect between healthcare needs and available services necessitates the implementation of strategies at multiple levels. At clinical level by addresing dental professionals. At community level by awareness programs for care givers. Use of mobile dental clinics. At policy level, integrating modules that address disability-specific needs into national oral health initiatives, coupled with financial support for providers serving individuals with special needs, is crucial.

5. Conclusions

To improve oral health care for these children, we need more than just treatment in dental clinics. Changes must happen at

different levels through better policies, programs, and education. Government programs should include special dental services for children with disabilities. Dentists who treat these children should receive financial help or incentives. Also, dental students need proper training so they feel confident and prepared to care for patients with special needs.

In addition, schools for children with disabilities should have regular dental check-ups. Mobile dental clinics can be sent to special schools or rural areas. Caregivers and teachers should also be taught how to help children maintain good oral hygiene at home or in schools. Special tools like modified toothbrushes and visual aids can help children learn how to clean their teeth better.

By taking these steps, we can make dental care equal. Oral health should not be a luxury it should be a basic right for every child, including those with disabilities. We must make sure that what is written in health policies is actually followed in real life. Ensuring healthy smiles for children with disabilities is not just a medical responsibility it is a reflection of a truly inclusive and compassionate society.

6. Conflict of Interest

None.

7. Source of Funding

None.

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