

Is Maternal Perception of Oral Health among Special Children a Cause for Dental Neglect in the Rural Area of Dakshina Kannada? - A Cross-Sectional Study

Savitha Sathyaprasad¹, Meghana T²

¹MDS, Phd Faimer, Head of the Department, Department of Pediatric and Preventive Dentistry, KVG Dental College and Hospital, Sullia, Karnataka, India

²Post Graduate Student, Department of Pediatric and Preventive Dentistry, KVG Dental College and hospital, Sullia, Karnataka, India

Abstract: *This study assesses the knowledge, attitudes, and practices of mothers regarding oral health care for children aged 3 to 13 years with special needs, emphasizing the importance of maternal awareness in preventing dental neglect. **Materials and Methods:** A cross-sectional questionnaire study was conducted over two weeks with 100 mothers from Sarvodaya and Sandeep Special Schools in Dakshina Kannada. The structured questionnaire included demographic details and 14 questions on oral health knowledge, attitudes, and practices. Data collection was facilitated by school teachers. Results: Findings revealed that 64% of mothers had fair knowledge about oral health, 62% exhibited a good attitude, but only 43.7% practiced good oral hygiene. Approximately 51% rated their child's oral health as fair, and 7.6% reported it as poor, highlighting significant gaps in knowledge and practices. **Conclusion:** While mothers are committed to their children's well-being, inadequate knowledge and attitudes toward oral health contribute to dental neglect. Addressing these issues through enhanced education and community collaboration is essential for improving oral health outcomes for children with special needs and preventing long-term consequences.*

Keywords: Oral Health, Special Needs, Dental Care, Children with Disabilities, Dental Neglect, Oral Hygiene, Caries Prevalence, Healthcare Inequalities, Maternal Knowledge

1.Introduction

Oral health reflects overall health and is shaped by parents' knowledge and practices, particularly for younger children. Parents' awareness and positive attitudes are crucial for preventing dental issues and establishing lifelong habits. This is especially critical for children with special needs, who face unique challenges such as motor, sensory, and cognitive impairments, developmental anomalies, and self-injurious habits, all of which increase their risk of poor oral health.¹

Mothers of special needs children often prioritize their child's overall well-being over oral care due to financial, social, and emotional burdens. This lack of focus, combined with limited knowledge, frequently results in dental neglect. Defined by the American Academy of Pediatric Dentistry, dental neglect is the failure to seek necessary oral care, despite access, leading to significant harm. It is also considered a form of child abuse due to its potential to cause pain, infection, and impaired oral function.^{2,3}

Research shows that children with special needs experience higher rates of dental neglect and poor oral hygiene than their peers.⁴

Addressing this issue requires improving maternal knowledge and attitudes toward oral health, as early education and practices can prevent dental neglect and reduce oral health disparities.⁵ This study aims to evaluate maternal knowledge, attitudes, and behaviors regarding oral health care for children with special needs to identify and mitigate factors contributing to dental neglect.

2.Materials and Methods

A cross sectional questionnaire study was conducted for a period of 2 weeks among mothers of 3–13 year old children with special needs who were studying in Sarvodaya special school, Puttur and Sandeep special school, Sullia. This research was conducted in full accordance with the World Medical Association Declaration of Helsinki. Necessary permissions were acquired from the principals of the respective schools and the mothers of the respective schools. Participation of mothers in the survey was voluntary and anonymous.

Mothers of children with special care needs aged between 3 and 13 years, who spent more than 8 h with their children were included in the study. A single interviewer used a structured questionnaire to collect data from the participants. A content validation and reliability analysis were done for the questionnaire.

The pro forma was in English, which was translated into Kannada by a Kannada scholar, who was fluent in both English and Kannada. The Kannada version was then back translated into English by an expert, who is well versed in both Kannada and English. It was later reviewed by some teachers at Special Needs school and a few parents for assessment of face validity. The questionnaire was pretested on 10 parents/ caregivers to assess the clarity and appropriateness. Any ambiguity related to the questions was discussed and cleared. The pro forma was in English, which was translated into Kannada by a Kannada scholar, who was fluent in both English and Kannada. The Kannada version was then back translated into English by an expert, who is

Volume 14 Issue 1, January 2025

Fully Refereed | Open Access | Double Blind Peer Reviewed Journal

www.ijsr.net

well versed in both Kannada and English. It was later reviewed by some teachers at Special Needs school and a few mothers for assessment of face validity. The questionnaire was pretested on 10 mothers to assess the clarity and appropriateness. Any ambiguity related to the questions was discussed and cleared.

The questionnaire consisted of two parts: the first part had demographic details and the second part consisted of 14 questions, in which six questions were related to knowledge about oral health, four on attitude, and four on practices of oral hygiene.

The questionnaires were delivered to the mothers through the school teachers of the respective Special Needs Schools. The school teachers distributed the questionnaires to every child to take home and convey it to their mothers and the response were collected for 10 days duration of the study. Reminder message to return the filled in questionnaires were sent to mothers after 5 days, by the school teachers. Respondents who signed the informed consent form constituted the study population. Mothers who did not return the consent form or gave incomplete responses to the questionnaire were excluded from the study.

Statistical analysis: The data were entered into Microsoft Excel 2010 version, and the statistical analysis was computed using SPSS Inc. Released 2011. IBM SPSS Statistics for Windows, version 27 Armonk, NY: IBM Corp. Descriptive statistics were computed to calculate responses for each question. One-way ANOVA was computed to compare means of knowledge, attitude, and practice with age, education, and income. Normality of the data was tested using Shapiro- Wilks test.

3.Results

Demographic information

A total sample of 100 participants were included for the study. The mean age of the study population was 32.4 ± 1.2 years. When education status was assessed, 28% of them completed primary education, 41% of them completed secondary education and 31% of them completed their higher secondary education. (Table 1) Among the children assessed, a heterogeneous group of disabilities was seen. Majority (35%) of them had intellectual disability, 26% of them had cerebral palsy, and remaining children had down syndrome (20%) and autism (19%). (Table 2)

Table 1

Age distribution of studied population		Percent	p-values ^c
Age of mother	20-30 years	38.0%	<0.001
	31-40years	50.0%	
	41-50years	12.05	

Mean Age of mother	N	Mean	Std. Deviation	Minimum	Maximum
	100	32.9800	5.02113	26.00	46.00

Table 2

Condition child suffers from	Percent	p-values ^c
Autism	19%	0.090
Down syndrome	20%	
Intellectual disability	35%	
Cerebral palsy	26%	

p-values^c- chisquare test, *<0.05 considered statistically significant, <0.001 considered highly significant

Overall knowledge, attitude, and practice

Majority (64%) of the mothers had fair knowledge, 62.0% exhibited good attitude, and 43.7% showed good practices. The present study had hardly any participants in the good knowledge category. About 51% of the mothers who had responded rated their child's oral health as fair, and 7.6% reported poor oral health. Responses of the mothers regarding their child's oral health, questions are tabulated in Table 3.

4.Discussion

Oral health is crucial for overall well-being, particularly in children with disabilities, who often depend on caregivers for daily activities, including oral care.⁶ Parents, especially mothers, play a vital role in preventing oral diseases and advocating for their child's dental health.⁷ Research since 1946 has shown a stronger correlation between maternal influence and children's oral health.⁸ Understanding

maternal knowledge is key to disease prevention, and the AAPD recommends assessing this through validated questionnaires to enhance child oral health promotion programs.⁹

This study analyzed data from mothers of 3-13-year-old children with special needs who were studying in Sarvodaya special school, Puttur and Sandeep special school, Sullia for the purpose of assess maternal knowledge, attitudes, and behaviors regarding oral health care for special children to determine the prevalence of dental neglect.

The results of the study indicate that among 100 respondents, all mothers reported giving equal importance to their special children as they do to their other children. However, 62% identified as overprotective, which may influence their approach to dental care. This finding is consistent with research by Alwadi et al., which highlights that caregivers often exhibit protective behaviors that can inadvertently lead to neglect in specific health areas,

including oral hygiene.¹⁰

In this study, only 35% of mothers believed that oral health is directly related to general health, despite 99% acknowledging the importance of understanding general health for their child's overall well-being. This aligns with findings from Cancio et al., which emphasize that a lack of awareness regarding the connection between oral and general health can contribute to inadequate dental care practices among mothers of children with special needs.¹¹ The neglect of oral health in these children can be viewed as a form of child abuse, as it compromises their overall well-being and quality of life. This perspective is supported by Dhull et al., who argue that poor oral health practices among caregivers can significantly impact children's health outcomes.¹²

The low rate of dental check-ups observed in our study - only 22% of mothers reported taking their child for a dental visit at six months or when the first tooth erupted - echoes the concerns raised by Chaffee et al.¹³ Their research found that negative maternal perceptions and behaviors significantly correlate with higher instances of dental caries in children, indicating that early preventive care is often overlooked. This lack of preventive care is further emphasized by findings from Mehdi-pour et al., which noted that many mothers are unaware of the importance of early dental visits, leading to increased risks for dental issues.¹⁴

Furthermore, while 100% of mothers received suggestions about oral health from their child's special school, only 36% expressed interest in seeking additional information through social media or the internet. This reflects findings from Rabello et al., which suggest that limited access to technology and confidence in utilizing these resources can hinder parents' engagement in their children's oral health education.¹⁵ Similarly, research by Jaber et al. indicates that socioeconomic factors play a significant role in parents' ability to access and utilize health information effectively.¹⁶

Despite these challenges, a notable 76% of mothers indicated a willingness to attend counseling related to dental health. This openness suggests an opportunity for healthcare providers to implement community-based educational programs aimed at enhancing maternal knowledge and skills regarding oral hygiene management for their children.

Anticipatory guidance plays a crucial role in this context; it involves providing parents with key information about oral development, hygiene practices, and preventive measures tailored to their child's needs, as noted by the American Academy of Pediatric Dentistry.¹⁷ Research supports this approach; studies show that educational interventions can significantly improve maternal knowledge and positively influence children's oral health outcomes, as demonstrated by Cancio et al.¹¹

5. Conclusion

In rural Dakshina Kannada, a study reveals that while mothers of children with special needs are deeply committed to their child's overall well-being, they often lack adequate knowledge, attitudes, and practices regarding oral health. This lack of awareness, combined with overprotectiveness and insufficient dental care, leads to dental neglect, which can severely harm a child's long-term health and development.

Dental neglect is not just a dental issue but also a sign of broader child maltreatment and abuse. Addressing this requires a united effort from healthcare professionals, parents, and the community to ensure the safety and well-being of children, particularly those with special needs, and to prevent long-term consequences.

6. Recommendations

Based on the results of this study, it is recommended that periodic screening for the early detection of oral diseases among school children be implemented, along with anticipatory guidance to educate parents about their children's dental needs. National health policies should prioritize maternal and child oral health by ensuring adequate resource allocation.

Continuous health education through mass media is essential to raise awareness about oral hygiene practices and tooth protection. Additionally, various channels, including community workshops and local health initiatives, should be utilized to reach mothers who may not have access to technology. By integrating these strategies, we can promote a proactive approach to oral health that addresses current issues and prevents future dental problems in children.

TABLE 3

Questions	Percent	p-values ^c
Q1. Do you give equal importance to your child like you do to the other children?		
Yes	100%	0.00*
No	0%	
Q2. What is your attitude toward your child?		
Over protective	62%	0.016*
Overindulgent	38%	
Underaffectionate	0%	
Rejecting	0%	
Q3. Do you believe that having a good understanding of general health is important for your child's overall well-being?		
Yes	99%	<0.001*
No	1%	
Q4. Do you prioritize their general health?		
Yes	100%	0.00*
No	0%	
Q5. Do you think oral health is directly related to general health?		

Yes	35%	0.003*
No	65%	
Q6. Did you take your child for a dental check-up at six months or when their first tooth erupted?		
Yes	22%	<0.001*
No	78%	
Q7. Do you help your child brush their teeth regularly?		
Yes	45%	0.317
No	55%	
Q8. Have you noticed any white spot lesions on their teeth?		
Yes	34%	<0.001*
No	66%	
Q9. Does your child suffer from tooth decay?		
Yes	81%	<0.001*
No	19%	
Q10. Has your child had any complications, such as a tooth abscess or cellulitis (swelling)?		
Yes	49%	0.841
No	51%	
Q11. Has your child suffered trauma to a tooth from a fall?		
Yes	43%	0.162
No	57%	
Q.12 Do you receive any suggestions about oral health from their special school?		
Yes	100%	0.00*
No	0%	
Q.13 Are you willing to attend counselling related to dental health, such as anticipatory guidance?		
Yes	76%	<0.001*
No	24%	
Q.14 Do you show extra interest in obtaining additional information on oral health through social media or the internet?		
Yes	36%	<0.005*
No	64%	

References

- [1] Fisher-Owens SA, Lukefahr JL, Tate AR, et al. Oral and dental aspects of child abuse and neglect. *Pediatrics* 2017;140(2):e20171487. DOI: 10.1542/peds.2017-1487
- [2] American Academy of Pediatric Dentistry. Management of dental patients with special health care needs. *The Reference Manual of Pediatric Dentistry*. Chicago, Ill.: American Academy of Pediatric Dentistry; 2023:337-44.
- [3] American Academy of Pediatric Dentistry. Management of dental patients with special health care needs. *The Reference Manual of Pediatric Dentistry*. Chicago, Ill.: American Academy of Pediatric Dentistry; 2023:337-44.
- [4] Bennadi D, Konekeri V, Maurya M, Reddy V, Satish G, Reddy CVK. Oral hygiene negligence among institutionalized mentally disabled children in Mysore city-A call for attention. *J Family Med Prim Care*. 2020 Apr 30;9(4):2045-2051. doi: 10.4103/jfmpc.jfmpc_720_19. PMID: 32670963; PMCID: PMC7346966.
- [5] Krishnan L, Prabha G, Madankumar PD. Knowledge, attitude, and practice about oral health among mothers of children with special needs - A cross-sectional study. *J Dent Res Rev* 2019;6:39-43.
- [6] Liu HY, Chen JR, Hsiao SY, Huang ST. Caregivers' oral health knowledge, attitude and behavior toward their children with disabilities. *Journal of Dental Sciences*. 2017 Dec;12(4):388-95.
- [7] Najat Abdrabbo Alyafei, Bushra Naaz Fathima Jaleel and Tintu Mathew (2020) Knowledge, Attitude and Behavior Towards Oral Health Care Among Parents / Caregivers of Children with Disabilities in Qatar. *Journal of Medical & Clinical Research* 5(10):251-257.
- [8] Fernando S, Tadakamadla SK, Bakr M, Scuffham PA, Johnson NW. Indicators of risk for dental caries in children: a holistic approach. *JDR Clinical & Translational Research*. 2019; 4: 333-341.
- [9] American Academy on Pediatric Dentistry Clinical Affairs Committee-Infant Oral Health Subcommittee; American Academy on Pediatric Dentistry Council on Clinical Affairs. Guideline on infant oral health care. *Pediatr Dent* 2008 2009;30(Suppl):90-93.ADD recent guideline
- [10] Balwanth S, Singh S. Caregivers' knowledge, attitudes, and oral health practices at long-term care facilities in KwaZulu-Natal. *Health SA*. 2023 Mar 3;28:2147. doi: 10.4102/hsag.v28i0.2147. PMID: 37064651; PMCID: PMC10091066.
- [11] Al-Khalifa K S, Alfaraj A. Oral Health Awareness and Practices of Special Needs Caregivers in Qatif, Saudi Arabia. *Shiraz E-Med J*. 2021;22(9):e107797. <https://doi.org/10.5812/semj.107797>
- [12] Baskaradoss JK, AlSumait A, Behbehani E, Qudeimat MA (2022) Association between the caregivers' oral health literacy and the oral health of children and youth with special health care needs. *PLoS ONE* 17(1): e0263153. <https://doi.org/10.1371/journal.pone.0263153>
- [13] Feldens CA, Fortuna MJ, Kramer PF, Ardenghi TM, Vítolo MR, Chaffee BW. Family Health Strategy associated with increased dental visitation among preschool children in Brazil. *Int J Paediatr Dent*. 2018 Nov;28(6):624-632. doi: 10.1111/ipd.12421. Epub 2018 Sep 2. PMID: 30175414; PMCID: PMC6188830.
- [14] Kashani K, Shahravan A, Sarafinejad A. Evaluating the effectiveness of web-based oral health education on

enhancing mothers' awareness: a semi-experimental internet-based intervention. *BMC Oral Health*. 2024 Oct 26;24(1):1296. doi: 10.1186/s12903-024-05070-3. PMID: 39462340; PMCID: PMC11512505.

- [15] Constance D, Diana & Subbiah, Rohini & Sukumaran, Aparna & Madankumar, Parangimalai. (2023). Barriers in maintaining oral health among the children with cerebral palsy - Parent/caregiver's perspective. *Journal of Indian Society of Pedodontics and Preventive Dentistry*. 41. 234-238. 10.4103/jisppd.jisppd_360_23.
- [16] Alsubaie AM, Almohaimede KA, Aljadoa AF, Jarallah OJ, Althnayan YI, Alturki YA. Socioeconomic factors affecting patients' utilization of primary care services at a Tertiary Teaching Hospital in Riyadh, Saudi Arabia. *J Family Community Med*. 2016 Jan-Apr;23(1):6-11. doi: 10.4103/2230-8229.172223. PMID: 26929723; PMCID: PMC4745204.
- [17] American Academy on Pediatric Dentistry Clinical Affairs Committee-Infant Oral Health Subcommittee; American Academy on Pediatric Dentistry Council on Clinical Affairs. Guideline on infant oral health care. *Pediatr Dent* 2008 2009;30(Suppl):90-93.ADD recent guideline