



The Role of Parents and Its Relationship with Oral Hygiene of Students with Intellectual Disabilities

Salwa Nuraini Utami Harahap^{a,1*}, Ida Chairanna Mahirawatie^a, Agus Marjianto^a

^a Department of Dental Health, Politeknik Kesehatan Kemenkes Surabaya, Surabaya, East Java, Indonesia

¹ edu.salwaharahap@gmail.com*

* Corresponding Author

ARTICLE INFORMATION	ABSTRACT
<i>Article History:</i> <i>Received: May 13, 2025</i> <i>Revised: May 29, 2025</i> <i>Published: May 31, 2025</i> Keywords: Parental Role Dental Hygiene Intellectual Disabilities	Children with intellectual disabilities face physical and cognitive challenges that affect personal hygiene, particularly oral health. This study aims to examine the relationship between parental roles and the level of oral hygiene among students with intellectual disabilities at SLB B-C Optimal. The study employed a correlational analytic design with a cross-sectional approach, involving 34 pairs of parents and children with intellectual disabilities. Data were analyzed using the Spearman Rank correlation test. Results showed that most parents had a good role (70.5%), yet 59% of the students had poor oral hygiene. A significant relationship was found between parental roles and students' oral hygiene ($p = 0.024$; $r = 0.386$), indicating a weak correlation. In conclusion, there is a weak but significant relationship between parental roles and the oral hygiene of students with intellectual disabilities.

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INTRODUCTION

Students with intellectual disabilities (ID) are children who experience mental and physical limitations that affect their development, growth, behavior, and emotional responses. These children often face difficulties in maintaining personal hygiene, particularly oral and dental health. This condition necessitates more complex health care compared to that required by typically developing children (Primawati et al., 2022). According to the American Psychological Association (APA), individuals with intellectual disabilities exhibit limitations in intellectual capacity, adaptive functioning, cognitive skills, mobility, muscle control, as well as involuntary movements and gag reflexes that appear before the age of 22, thereby affecting their ability to maintain oral hygiene (Istanto, Widyagdo, & Fratiwi, 2023).

A study conducted in Mysore, India, involving 455 children with intellectual disabilities revealed that 36.73% had poor oral hygiene, in stark contrast to only 9.18% among 450 typically developing children (Bennadi et al., 2020). In Indonesia, the Basic Health Research (Riskesdas) in 2018 reported that 57.6% of the population experienced dental and oral health problems (Badan Penelitian dan Pengembangan Kesehatan, 2019). Although 94.7% of the population claimed to brush their teeth, only 2.8% did so correctly—after breakfast and before sleeping. A study by Rismayani and Indartri (2023) involving 33 children with intellectual

disabilities in Indonesia found that 76.5% had poor dental hygiene, highlighting a serious issue in oral health care among this population.

Self-care, particularly oral hygiene, requires extra attention and supervision for children with intellectual disabilities. They need consistent guidance and encouragement to develop proper oral hygiene habits. Neglect of oral hygiene can lead to various problems such as dental caries, tartar, gingivitis, periodontitis, and other plaque-related diseases (Ranata et al., 2022). Children with cognitive impairments are also more susceptible to the accumulation of pellicle, debris, and dental plaque, which are clinical indicators of poor oral hygiene (Nurjanah et al., 2023).

Due to their inability to perform self-care tasks independently according to their age, children with intellectual disabilities are highly dependent on their parents. Parents play a crucial role in educating and encouraging their children to maintain oral and dental health. This includes providing education, supervision, and oral hygiene tools such as toothbrushes, toothpaste, and dental floss (Dasrina et al., 2022). A study by Shoumi and Mahirawatie (2023) found that children with intellectual disabilities require active parental involvement in their oral hygiene routines. Thus, parental awareness and involvement are key determinants of oral health in children with special needs.

A study by Nurjanah et al., (2023) at SLB Karya Bakti and SLB B-C Optimal Surabaya found that 60.9% of students with intellectual disabilities had poor OHI-S scores. Preliminary observations conducted by the researcher on April 22, 2024, involving six students with intellectual disabilities at SLB B-C Optimal showed that four students had poor OHI-S scores, while two had moderate scores, with an average score of 3.6, indicating generally poor oral hygiene. This study aims to examine the relationship between parental roles and the level of oral hygiene among students with intellectual disabilities at SLB B-C Optimal Surabaya.

METHOD

This study is a correlational analytic research aimed at examining the relationship between two variables: the role of parents and the level of oral and dental hygiene among students with intellectual disabilities. A cross-sectional approach was employed, in which data were collected at a single point in time without any intervention on the studied variables. The study was conducted at SLB B-C Optimal, located at Jl. Wardoyo 12 (rear), TNI AL Kenjeran Complex, Sukolilo Baru Subdistrict, Surabaya City. The research was carried out from January 2024 to August 2024. The population in this study consisted of all parents of students with intellectual disabilities enrolled at SLB B-C Optimal Surabaya. With a total population of 34 parents, the sampling technique used was total sampling, in accordance with Sugiyono (2021), who states that if the population is fewer than 100 individuals, all members may be included as research samples.

Data were collected using a questionnaire distributed to respondents. To analyze the relationship between parental roles and the oral and dental hygiene levels of students with intellectual disabilities, the Spearman Rank correlation test was employed with the assistance of SPSS software. This study received ethical approval from the Ethics Committee of the Health Polytechnic of the Ministry of Health in Surabaya with approval number EA/3007/KEPK-Poltekkes_Sby/V/2024.

RESULTS AND DISCUSSION

Table 1. Frequency Distribution of Respondent Characteristics of Parents of Students with Intellectual Disabilities at SLB B-C Optimal Surabaya in 2024.

Education	Total	Percentage (%)	Age	Total	Percentage (%)
Junior High School (SMP)	8	23	26-35	6	17.65
Senior High School (SMA/SMK)	21	62	36-45	23	67.65
Bachelor (S1)	5	15	46-55	5	14.7
Total	34	100		34	100

Based on Table 1, it is known that the majority of respondents had a senior high school/vocational school (SMA/SMK) as their highest level of education, accounting for 62%.

Most of the parents were in late adulthood, aged between 36–45 years, totaling 23 individuals (67.6%).

Table 2. Frequency Distribution of Age Characteristics of Children with Intellectual Disabilities at SLB B-C Optimal Surabaya in 2024.

Age	Frequency	Percentage (%)
5-11	11	32.4
12-16	20	58.8
17-25	3	8.8
Total	34	100

Based on Table 2, it is known that the majority of students with intellectual disabilities at SLB B-C Optimal Surabaya are aged 12–16 years, totaling 20 students (58.8%).

Table 3. Frequency Distribution of Questionnaire on Parental Role in Maintaining Oral and Dental Hygiene of Students with Intellectual Disabilities at SLB B-C Optimal Surabaya in 2024.

Parental Role	Statement Items	Frequency							
		Always	%	Often	%	Sometimes	%	Never	%
Educator	5	82	242	60	177	27	80	1	3
Motivator	5	59	174	60	177	39	115	12	36
Facilitator	5	55	162	18	53	40	118	44	130
Mentor	5	49	145	54	159	50	148	4	12
Total	20	245	723	192	566	156	461	61	181
Average		13	37	10	29	8	24	3	10

Based on Table 3, the results of the questionnaire on the parental role in maintaining the oral and dental hygiene of students with intellectual disabilities—covering aspects such as educating, encouraging, facilitating, and guiding—show that the majority of parents responded with "always." These findings indicate that most parents are considered to play an active role in maintaining their children's oral and dental hygiene.

Table 4. Frequency Distribution of Parental Roles in Maintaining Oral and Dental Hygiene of Students with Intellectual Disabilities at SLB B-C Optimal Surabaya in 2024.

Parental Role	Frequency	Percentage (%)
Very Good	8	23.5
Good	24	70.5
Fair	2	6
Poor	0	0
Very Poor	0	0
Total	34	100

Based on Table 4, it was found that the majority of parents of students with intellectual disabilities played a good role in maintaining their children's oral and dental hygiene, with 70.5% falling into this category. The average score also indicates a Good category, with a mean of 73.66.

Table 5. Frequency Distribution of Oral and Dental Hygiene Levels of Students with Intellectual Disabilities at SLB B-C Optimal Surabaya in 2024.

OHI-S Assessment Criteria	Frequency	Percentage (%)
Good	0	0
Moderate	14	41
Poor	20	59
Total	34	100

Based on Table 5, it can be seen that the oral hygiene of the majority of intellectually disabled students at SLB B-C Optimal falls under the *poor* OHI-S assessment criteria (59%), with an average score among students in the *moderate* category (3.0).

Table 6. Frequency Distribution of the Relationship Between Parental Role in Maintaining Oral Hygiene and the Oral Hygiene Level of Intellectually Disabled Students at SLB B-C Optimal Surabaya, 2024.

Parental Role	Oral Hygiene of Intellectually Disabled Students (OHI-S)			Total	Sig. (2-tailed)	Correlation Coefficient
	Good	Moderate	Poor			
Very Good	0	6	2	8	0.024	0.386
Good	0	9	15	24		
Fair	0	0	2	2		
Poor	0	0	0	0		
Very Poor	0	0	0	0		

Table 6 shows the results of the analysis of the relationship between the parental role in maintaining oral hygiene and the oral hygiene level of intellectually disabled students. The Sig. (2-tailed) value was 0.024 (<0.05), indicating a significant relationship between parental role and the oral hygiene of intellectually disabled students. The correlation coefficient was 0.386, which falls within the weak correlation range (0.2–0.399).

DISCUSSION

The Role of Parents in Maintaining the Oral and Dental Hygiene of Students with Intellectual Disabilities at SLB B-C Optimal Surabaya

Based on the field data obtained, the role of parents in maintaining the oral hygiene of students with intellectual disabilities was predominantly categorized as "good." This suggests that parents have taken a positive and active role in ensuring their children's oral and dental hygiene by serving as educators, motivators, facilitators, and guides.

The role of parents as educators was reported as the most prominent, particularly in their demonstration of correct toothbrushing techniques. This finding supports in Amalia et al. (2021), which emphasizes that one of the educational responsibilities of parents is to provide life education—such as explaining the importance of maintaining oral hygiene to children with intellectual disabilities. This is also corroborated by Adinimas et al. (2021), who found that many parents understand their role as educators in maintaining their children's oral health by teaching them proper brushing techniques. Mothers, in particular, were reported to contribute significantly by educating their children on oral and dental hygiene.

However, these findings differ from those of Santoso, Sulistiyowati, & Mustofa, (2020), who reported that 66.7% of parents demonstrated only a moderate role in their children's dental care, indicating a suboptimal level of involvement. The researcher noted that this outcome appears inconsistent with the demographic profile of the respondents, as most mothers were within their productive age (20–35 years)—a phase typically associated with increased enthusiasm and capacity to care for children's health, including oral hygiene.

Regarding the aspect where parents are expected to explain the consequences of poor oral hygiene or not brushing teeth, the data revealed this to be the lowest-scoring area. This could be attributed to a lack of adequate knowledge among parents in effectively communicating these consequences to children with intellectual disabilities. This is consistent with Sutomo et al. (2020), who emphasized the critical role of parents in providing understanding, information, and exemplary behavior to support child development.

Nonetheless, this finding contrasts with the study by Jahirin and Guntur (2020), which found that the parental role was moderate. They argued that children tend to be more responsive when parents explain and educate them, as children are likely to imitate parental behavior. However, it is crucial that parents possess sufficient knowledge of dental care before imparting it to their children.

With respect to the parental role in encouraging children—particularly in monitoring the condition of their toothbrushes—the results indicated a good level of involvement. This suggests that parents recognize the importance of using appropriate dental tools to foster better oral hygiene practices. This finding is supported by Adinimas et al. (2021), who emphasized that one of the essential parental responsibilities is to monitor the suitability of the child's toothbrush, as this has a significant impact on oral hygiene outcomes.

In contrast, the parental role in encouraging regular dental check-ups was found to be less than optimal. Many parents were reported to bring their children to dental services only when they experienced pain or complaints. This indicates a limited understanding of the importance of preventive dental care, as also highlighted by Dasrina et al. (2022). This result diverges from the findings of Zahara and Nisa (2022), who reported that parental roles were generally poor—likely due to a lack of experience and knowledge, which in turn affected their awareness of their children's oral health needs.

Field data also showed that the role of parents as facilitators—particularly in providing their children with toothbrushes—was very strong, with the majority of parents reporting “always” for this behavior. This reflects a good level of awareness regarding the need to equip children with appropriate oral hygiene tools. This finding is in line with Huzer and Nur (2024), who emphasized that mothers, as facilitators, must provide their children with necessary tools such as toothpaste and toothbrushes, and replace them every three months. The ideal toothbrush should be lightweight, have soft bristles, and a narrow head to suit the child's oral cavity, all of which support effective parenting and caregiving.

However, this finding differs from that of Sinaga et al. (2020), who reported that the average role of parents was moderate. They suggested that this was due to insufficient parental encouragement of oral hygiene habits. In contrast, providing a special toothbrush for children can serve as a motivational tool to encourage routine toothbrushing and improved oral cleanliness.

Finally, regarding the role of parents as guides, the highest rating was observed in statements indicating that parents monitor their children's eating and snacking habits. This is consistent with Atmadjati et al. (2023), who found that many parents regularly remind their children to rinse after consuming sugary foods and to limit sweet intake. This daily practice includes reminders to brush teeth after breakfast and before bedtime, to rinse after eating, and to be mindful of food and snack choices—all of which are integral to maintaining good oral hygiene in children.

Oral and Dental Hygiene Level in Students with Intellectual Disabilities at SLB B-C Optimal

Based on the dental examination results of students with intellectual disabilities at SLB B-C Optimal, the average OHI-S score was in the moderate category. This moderate OHI-S level is due to the students' mental limitations, which make it difficult for them to clean their teeth and mouth optimally.

According to H. L. Blum's theory, as cited by Notoatmodjo (2018), health status is influenced by four main factors. In this case, the OHI-S level of students with intellectual disabilities is affected by several factors, one of which is the individual aspect or genetic factor—namely, the presence of mental retardation or intellectual disability.

Children with intellectual disabilities generally face difficulties in performing self-care activities, such as brushing their teeth. This statement is supported by a study conducted by Primawati et al. (2022), which also found that the OHI-S level in students with intellectual disabilities was in the moderate category. The researchers noted that children with special needs require more attention in health services than those without disabilities, particularly in personal health aspects like oral hygiene.

This finding is further supported by a study by Karisma et al. (2022), which also showed that students with intellectual disabilities had a moderate OHI-S level. The researchers argued that this condition was influenced by various factors, including the ability of parents to teach their children how to care for their teeth and mouth. Students with intellectual disabilities can

experience a cleaner and healthier oral environment by regularly performing daily dental care activities with their parents' assistance and by undergoing routine dental check-ups.

A similar result was also found in the study by Kencana et al. (2020), where the OHI-S level was categorized as moderate. Although students with intellectual disabilities typically have difficulty learning academic subjects such as reading, writing, and arithmetic, they are still capable of learning self-care skills. These self-care skills are considered very important, as they require continuous stimulation and guidance from parents—especially when it comes to toothbrushing.

However, different findings were reported by Salamah et al. (2021), whose study showed that oral and dental hygiene among students with intellectual disabilities was in a poor condition. This was attributed to the fact that children with intellectual disabilities experience delays in growth, cognitive ability, and overall identity development. Thus, regardless of how well parents play their role, these children may still be unable to independently perform proper oral hygiene.

A similar result was also found in the study by Nurjanah et al., (2023), which reported a poor average OHI-S score, primarily due to the presence of debris that was not adequately removed from the oral cavity. Due to cognitive limitations and delayed development of basic motor skills, these children can only perform brushing with difficulty.

In line with these findings, Shoumi and Mahirawatie (2023) also reported that the oral hygiene level of students with intellectual disabilities fell into the poor category. The researchers explained that physical limitations in these children, combined with parents' limited understanding of proper oral care, resulted in inadequate oral cleaning. This leads to the accumulation of food debris and eventually plaque formation.

Behavior is also one of the many aspects influencing the OHI-S level in students with intellectual disabilities. The environment and daily experiences, including those shaped by both parents and teachers, are factors that influence their behavior. A study conducted by Anwar and Amaliah (2022) was consistent with this research, showing that the oral hygiene level among students with multiple disabilities (intellectual and hearing impairments) was in the moderate category, with most students falling under the “good” category. This was attributed to the implementation of a good and routine dental hygiene program, with regular support provided by both parents and teachers, and consistent supervision over several weeks, which led to improved oral hygiene among the students.

Nonetheless, maintaining oral health often presents a challenge for children with special needs. Therefore, support from those around them is crucial to help them reach their maximum potential. Children with intellectual disabilities are capable of performing simple self-care tasks, but they face challenges in learning and executing more complex actions. Hence, they require strong support from others—especially parents—to help them carry out self-care routines, including proper oral hygiene practices. With the right assistance, students with intellectual disabilities can achieve better oral hygiene levels.

The Relationship Between the Role of Parents in Maintaining Dental Hygiene and the Oral Hygiene Level of Students with Intellectual Disabilities

Based on the analysis of data from this research, it was found that there is a weak relationship between the role of parents and the level of dental and oral hygiene of students with intellectual disabilities. This weak relationship exists because, even though the role of parents in maintaining their children's dental hygiene is categorized as good, the average level of dental and oral hygiene among the students falls within the moderate category.

This means that although parents play an important role in educating, encouraging, facilitating, and guiding their children with intellectual disabilities to maintain oral hygiene, their children's below-average cognitive ability makes it difficult for them to understand, comprehend, and apply proper behaviors when caring for their oral health. As a result, their oral hygiene level remains moderate, with many of them still having poor OHI-S scores.

The positive role of parents of students with intellectual disabilities at SLB B-C Optimal aligns with what was stated by Umar (2015) in Amalia et al. (2021), which emphasized that

family involvement and parental roles are crucial to a child's growth and development because parents serve as the first educators. In this case, parents must educate, encourage, facilitate, and guide. This parental role helps shape positive behaviors in maintaining children's dental hygiene, which can lead to improved oral health status.

However, the child's genetic condition must also be considered as a factor influencing their dental hygiene status. These students have mental retardation or intellectual disabilities. In line with the theory proposed by H.L. Blum, as cited by Notoatmodjo (2018), four factors influence an individual's health status, one of which is genetics or innate factors. In this case, the genetic factor is the presence of intellectual disabilities. Individuals with intellectual disabilities have significantly lower cognitive function and are unable to adapt to societal norms and expectations.

This finding also aligns with the research by Qomariyah (2023), which showed a relationship between the role of parents and the dental and oral hygiene level of students with intellectual disabilities. Parental involvement can help improve a child's oral hygiene because children with special needs still require assistance and attention from others in maintaining their oral health (Qomariyah, 2023).

However, contradictory findings were reported by Nurjanah et al., (2023), which showed no relationship between family support and children's oral hygiene. The reasons varied, including the child's internal factors such as knowledge, motivation, and other behavioral influences, including parental involvement.

Parents play a crucial role in ensuring their children's health, including oral health, because they are the closest individuals to the child. Therefore, guidance, supervision, and resources are needed as part of the parental role in maintaining children's dental hygiene. Yet, research by Supariani and Sirat (2019) contradicts this, showing that parents often fail to supervise their children's brushing habits, do not provide fruits rich in water and fiber, and do not encourage brushing teeth before bed, leading to dental problems.

Parents are the first and primary educators for their children. They must teach and set an example for their children so that good habits can be learned and imitated. Apart from being fathers and mothers, parents also serve as teachers at home and as educators in the community. The parental role as educators includes teaching and guiding children from birth through to adulthood (Amalia et al., 2021).

The study by Norlita and Anggraeni (2023) contradicts this research, showing no significant relationship. Although parents tried to teach good oral health habits such as brushing twice daily and avoiding sugary foods, many children still found it difficult to adopt those habits.

Education is one factor that influences how parents shape oral hygiene behaviors in children with intellectual disabilities. This is in line with the study by Sutomo et al. (2020), which found that knowledge and educational level are factors affecting parental roles. Knowledge, education, and past experience form intellectual foundations that shape one's beliefs and support behavior. Cognitive ability affects how a person thinks, including understanding health information and applying it for their well-being.

In addition to education, a parent's age can also affect their role in maintaining their child's oral hygiene. A study by Mulyani et al. (2022) found that older parents generally had higher knowledge levels, indicating that life experience contributes to increased awareness and understanding.

Meanwhile, the average OHI-S score of students with intellectual disabilities was in the moderate category, with most students having poor oral hygiene. This suggests that their oral hygiene needs improvement. The high levels of plaque (debris) in their mouths are difficult to clean due to mental retardation and slower development of gross motor skills. This aligns with findings from Istanto et al. (2023), which emphasize the importance of parental support, especially from mothers, in forming positive habits such as helping their children brush their teeth, thereby fostering good behavior and independence in children with intellectual disabilities.

However, the study by Atmadjati et al. (2023) contradicts this, showing no relationship between parental roles and the incidence of dental caries in children with intellectual disabilities. This may be due to the fact that these children are not yet fully capable of independently managing their own dental hygiene and are at greater risk of dental and oral diseases compared to other children. This underlines the essential role of parents.

Children with intellectual disabilities show slower development in thinking and daily functioning, making self-care—including dental hygiene—more difficult. Individuals with intellectual disabilities often have poor oral care and more severe dental issues. Therefore, children must be taught the importance of dental hygiene, including brushing at least twice a day (after breakfast and before bed). Parents should also teach children about foods that can damage teeth and help prevent frequent consumption. Parents must recognize that children with intellectual disabilities need guidance, especially from their parents, to care for their dental and oral health (Progestine et al., 2020).

CONCLUSION

It is concluded that the role of parents of students with intellectual disabilities in maintaining their children's oral and dental hygiene at SLB B-C Optimal is mostly in the good category. The level of dental hygiene (OHI-S) among students with intellectual disabilities at SLB B-C Optimal Surabaya is mostly in the poor category. There is a weak relationship between the parental role in maintaining dental hygiene and the level of oral and dental hygiene among students with intellectual disabilities at SLB B-C Optimal. Future research is recommended to involve a larger sample size and explore additional factors influencing oral hygiene in children with intellectual disabilities, such as school-based interventions, the role of teachers, and the availability of dental health services tailored to children with special needs..

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