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Hand Hygiene Behavior and Health Status of Children With Special Needs: A Correlational Study in a Special School

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Children with special needs (ABK) are a vulnerable group with distinct characteristics and needs, requiring special attention in health care. One important behavior in disease prevention is hand hygiene behavior. This behavior is crucial for ABK because physical, intellectual, mental, emotional, and sensory limitations can impact their ability to practice clean and healthy living behaviors. Objective**:** To determine the relationship between hand hygiene behavior with soap and the health status of children with special needs at SLBN 1 Mataram. Method: This study used a correlational, *cross-sectional* design. Data collection used a questionnaire. The study population included all students at SLBN 1 Mataram, and a sample of 127 respondents was selected using *proportional stratified random sampling*. Data were analyzed using the *Chi-Square test*. Results: A total of 91 respondents (71.7%) had hand hygiene behavior with soap in the positive category and 36 respondents (28.3%) in the negative category. The health status of respondents was in the good category for 83 respondents (65.4%) and the poor category for 44 respondents (34.6%). The results of the *Chi-Square test* showed a significant relationship between Hand hygiene behaviorand health status ($p = 0.007$). The OR value of 2.951 (95% CI: 1.326–6.567) indicated that the group with negative Hand hygiene behavior had higher odds of poor health status than the group with positive behavior. Conclusion: There is a significant relationship between hand hygiene behavior and the health status of children with special needs at SLBN 1 Mataram. hand hygiene habits need to be strengthened as a promotive and preventive effort in maintaining the health of children with special needs.

Keywords: hand hygiene behavior, health status, children with special needs

1. INTRODUCTION

Clean and healthy living behaviors are crucial for maintaining health and preventing infectious diseases. Hand hygiene behavioris one example [1][2][3]. Hand hygiene is a simple yet highly effective measure to reduce contamination by pathogens that cause diarrhea and acute respiratory infections in schools. School-based hygiene interventions, combined with access to running water and soap, can increase handwashing compliance and reduce absenteeism due to infectious diseases [4][5]. Mastery of handwashing is especially important for children with special needs because intellectual, adaptive, memory, and motor coordination limitations often hinder them from performing self-care activities [5][6][7][8]. According to several intervention studies, live demonstrations, animated media, interactive visual stimulation, and movement games can significantly improve handwashing psychomotor skills [1][5][9][10][8]. Consequently, special hand hygiene programs for students with disabilities are still limited, and supporting facilities in schools are often inadequate [4][6].

According to [11][12][3], children's health status reflects their overall physical and functional condition, including disease risk, basic physical capacity, and resistance to germs. The ability to practice daily hygiene habits to reduce the spread of infectious diseases in children with special needs significantly affects their health status [4][9][13]. The ability to wash hands independently and correctly can reduce exposure to harmful biological agents, support physical endurance, and stabilize children's health conditions [4][14][8]. Empirical studies analyzing the direct relationship between Hand hygiene behaviorand the health status of children with special needs are urgently needed in special school settings [1][6][14]. This is because the relationship between personal hygiene and children's well-being has been widely discussed. Previous research has largely focused on the implementation of technical handwashing procedures, but has not evaluated their impact on children's overall health status [15][16]. Therefore, this study aims to investigate the relationship between Hand hygiene behaviorand the health status of children with special needs to support beneficial preventive and promotional intervention initiatives [11][16][2]. The number of children with special needs (ABK) in

Indonesia continues to increase, including in West Nusa Tenggara Province. According to the Ministry of Education, Culture, Research, and Technology, West Nusa Tenggara Province recorded 4,281 children studying in special schools (SLB) in 2024. Data from SLB 1 Mataram in 2025 recorded 186 students with special needs who faced challenges in maintaining personal hygiene and accessing healthcare

2. METHODS

This research is a quantitative study. The type of research used in this study is descriptive correlation with a cross-sectional approach. The sample was obtained using *stratified proportional random sampling* of 127 respondents who met the inclusion and exclusion criteria. The measurement instrument used was a questionnaire. The data analysis technique in this study used *the chi-square test.*

3. RESULTS AND DISCUSSION

Respondent characteristics included age, gender, education level, and type of disability. The study analyzed 127 children**.**

Table 3.1 Respondent Characteristics

NO.	Characteristics	Category	N	%
1	**Age**	Preschool	2	1.6
		school age	62	48.8
		Adolescent	53	41.7
		Mature	10	7.9
2	**Gender**	Man	76	59.8
		Woman	51	40.2
3	**Level of education**	Kindergarten	3	2.4
		Elementary School	67	52.8
		Junior High School	30	23.6
		Senior High School	27	21.3
4	**Types of tuna**	Tuna Grahita	77	60.6
		Tuna Rungu	20	15.7
		Autism	22	17.3
		Tuna daksa	7	5.5
		Tuna netra	1	0.8
	Total		127	100.0

Source: Primary data, 2026

Based on Table 3.1, of the 127 research respondents, the majority of respondents were in the school age group, namely 62 children (48.8%), were male, namely 76 children (59.8%), had an elementary school education level of 67 children (52.8%), and based on the type of disability, the majority were children with intellectual disabilities (tuna grahita), namely 77 children (60.6%). The results showed that the attitude of washing hands with soap is in the positive category of 91 respondents (71.7%) and 36 respondents (28.3%) in the negative category. Meanwhile, the health status of children with special needs falls in the good category for 44 respondents (34.6%) and the poor category for 83 respondents (65.4%). This study shows a significant relationship between hand hygiene behaviorand the health status of children with special needs ($p = 0.007$). Respondents with positive hand hygiene behaviorare more likely to have good health status (72.5%) compared to respondents with negative hand hygiene behavior(47.2%). Conversely, poor health status is more common in the group with negative hand hygiene behavior(52.8%) compared to the positive group (27.5%). The OR value of 2.951 (95% CI: 1.326–6.567) indicates that the group with negative Hand hygiene behaviorhas higher odds of poor health status. These findings demonstrate the importance of hand hygiene behavioras a component of preventive behavior in children with special needs, although health status is still influenced by various other factors.

Most respondents were school- and elementary-school-aged, so they were already at a stage where they could develop clean and healthy living habits in the school environment. The educational environment is a crucial setting for instilling healthy behaviors from an early age, as childhood is when habits, motivation to learn, and independence begin to form and can carry over to later stages [17]. However, in children with intellectual or developmental disabilities, the ability to perform daily living skills, including personal hygiene, is often hampered by limitations in adaptive function, memory, communication, and motor coordination, requiring more gradual learning and more consistent support from adults [8][18][1]. Theoretically, the results of this study align with evidence that handwashing is a basic hygiene behavior that is important for preventing the transmission of infectious diseases. Hand hygiene has been cited as the most fundamental and cost-effective way to reduce the spread of infection in educational settings and is associated with reduced infectious disease and illness-related absenteeism in children [17][19]. Systematic reviews have also shown that Hand hygiene behaviorcan reduce the risk of diarrhea in children, although the effectiveness of behavior promotion programs varies across studies [20]. Overall, the most consistent finding is that age and education appear to correlate with hand hygiene behavior, while gender does not; better Hand hygiene behavioris also correlated with better health status [21][22][23].

Consistent with previous literature, it is possible that age correlates with hand hygiene compliance; however, the pattern is not always linear. This study found a significant association between age and hand hygiene behavior. In children aged 8–10 years, handwashing practices varied by age, with higher compliance at specific points in the younger ages. Conversely, other studies have shown that compliance may decrease in older age groups but then increase again after age 14 [22][24]. These findings are better interpreted as differences in behavior across age groups rather than as a direct effect of increasing age.

Age may correlate with the development of children with special needs in terms of understanding instructions, memory, communication, and functional independence. To master handwashing skills, children with intellectual disabilities require a repetitive, engaging, and gradual learning process [8][5]. Children's hand hygiene behavioris influenced not only by age but also by school habits and supervision. This is because many factors influence children's hand hygiene behavior, including institutional routines, adult supervision, and social reinforcement [22][25].

Furthermore, it is empirically plausible that the lack of association between gender and Hand hygiene behaviorin this study is due to the mixed evidence regarding the influence of gender on children's hand hygiene behavior. A recent study of 8- to 10-year-old children found no association between gender and most hand hygiene procedures; however, girls performed them more diligently on occasion [22]. Therefore, the lack of gender relevance in this study may reflect that, in the context of children with special needs, Hand hygiene behavioris more influenced by training, familiarity, facilities, and environmental support than by biological or social differences based on gender.

School literature strongly supports the relationship between education level and Hand hygiene behaviorin this study. Education provides greater exposure to health information, skill practice, repetition, and the establishment of routines. Consequently, if schools provide a support system, children at higher education levels tend to have better hand hygiene behaviors [22][25]. However, formal education alone is not sufficient. Knowledge about handwashing often does not predict behavior on its own. Attitudes, practical skills, social norms, and reinforcement from teachers and families are more important determinants of whether children actually wash their hands at the appropriate times [26][25].

The findings indicate that age correlates with health status, while gender, education, and type of disability do not. This finding is consistent with the idea that health status has multiple dimensions. Factors such as susceptibility to infection, self-care skills, school conditions, home environment quality, and caregiver support determine children's health status [26][24]. Consequently, the fact that some demographic variables were significant in this study does not mean they are unimportant; rather, it suggests that other factors more closely related to behavior and risk exposure may have a greater influence.

Broader evidence on infectious disease prevention supports a significant association between Hand hygiene behaviorand health status in this study. Observational evidence in schoolchildren also suggests that handwashing at key times is associated with lower incidences of diarrhea and respiratory infections. Handwashing before and after preparing food, after defecating, and after cleaning eating utensils reduced diarrhea incidence by more than 70% and respiratory infections by more than 56% in children aged 8–12 years in New Delhi [23]. Consequently, it is biologically and epidemiologically plausible that the proportion of better health status in the group with positive hand hygiene behaviors in your study is higher.

This relationship should not be considered the sole explanation for health status. According to the literature, water quality, caregiver behavior, school environment, and access to handwashing facilities all influence whether hygiene behaviors are maintained and affect health [24][25]. For children with special needs, limitations in cognitive abilities, short-term memory, motor coordination, and the need for assistance may also influence the relationship between behaviors and health outcomes [8][5][19].

Although children with positive hand hygiene behaviors in this study were more likely to have good health, these results do not imply that handwashing is the sole determinant of health. The literature on children with intellectual disabilities suggests that health status is influenced by many other factors, including household income, ethnicity, support needs across transitions, exposure to family stress, parenting styles, and broader social determinants [27][28]. Children with intellectual disabilities also experience greater health inequalities and a greater burden of mental health problems than children without intellectual disabilities, suggesting that their health status is indeed multifactorial [29][30]. School environmental factors also play a role. The availability of water, soap, sinks, toilet cleanliness, peer norms, and organizational support influence the sustainability of Hand hygiene behaviorin children [4][31][20]. Therefore, the results of this study are more appropriately interpreted as evidence that Hand hygiene behavioris related to the health status of children with special needs, and that handwashing habits remain relevant as a promotive-preventive intervention, but must be implemented with support from families, schools, adequate facilities, and a more comprehensive health approach.

4. CONCLUSIONS

There is a significant relationship between Hand hygiene behaviorand the health status of children with special needs, with a *p-value* of 0.007. Respondents with positive Hand hygiene behaviorhave a higher proportion of good health status (72.5%) compared to respondents with negative Hand hygiene behavior(47.2%). The OR value of 2.951 (95% CI: 1.326–6.567) indicates higher odds of good health status in the group with positive hand hygiene behavior. These findings indicate that Hand hygiene behavioris a crucial aspect in maintaining and preventing health problems in children with special needs. Therefore, schools, teachers, families, and the child's environment should reinforce consistent handwashing habits. However, because various factors influence health status, efforts to improve the health of children with special needs need to be comprehensive and not solely focused on hand hygiene behavior.

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