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RELATIONSHIP BETWEEN FAMILY SANITATION ATTITUDES AND STATUS NUTRITIONAL HEALTH FOR TODDLERS IN CIBEUREUM VILLAGE, CIMAHI CITY

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ABSTRACT

Malnutrition among toddlers remains a major public health issue in Indonesia, including in Cimahi City. Family sanitation is suspected to be one of the contributing factors, as poor environmental hygiene can increase the risk of infections that impair nutrient absorption in children. This study aimed to examine the relationship between family sanitation attitudes and the nutritional status of infants and toddlers in Cibeureum RW 08, Cimahi City. A quantitative research design with a descriptive correlational approach was used. Data were collected through questionnaires assessing family sanitation attitudes and anthropometric measurements to evaluate nutritional status based on weight-for-age (W/A), weight-for-height (W/H), and height-for-age (H/A) indices. A total of 109 respondents were selected using purposive sampling. Data were analyzed using the Chi-square test. Results showed that 64 families (58.7%) had good sanitation attitudes, while 45 families (41.3%) had poor sanitation attitudes. Most toddlers (70.64%) had normal nutritional status, while 20.18% were malnourished and 7.34% undernourished. Statistical analysis revealed no significant association between family sanitation attitudes and toddlers' nutritional status ($p = 0.894$). In conclusion, while good family sanitation practices are important for disease prevention, they were not significantly associated with toddlers' nutritional status in this study. Other factors such as feeding practices, dietary intake, and socioeconomic conditions may play a more prominent role and warrant further investigation.

Keywords : Nutritional status, Toddler, Family sanitation

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INTRODUCTION

Nutritional problems in toddlers are a global health issue requiring serious attention. According to the United Nations International Children's Emergency Fund (UNICEF), there are 700 million children worldwide suffering from obesity and malnutrition, accounting for one-third of the global child population. In 2020, approximately 149.2 million (22%) toddlers experienced malnutrition, while 38.9 million (5.7%) were overweight. Nutritional issues in toddlers include protein-energy malnutrition (PEM), vitamin A deficiency (VAD), iron deficiency anemia (IDA), iodine deficiency disorders (IDD), overnutrition, and stunting (Kemenkes RI, 2018).

In Indonesia, malnutrition remains a significant challenge, especially for healthcare workers across various government levels. Based on the 2017 Nutritional Status Monitoring (PSG) by the Ministry of Health, the prevalence of severe malnutrition among toddlers aged 0-59 months in Indonesia reached 3.8%, while moderate malnutrition accounted for 14%(Gizi et al., n.d.). In West Java Province, approximately 99,070 toddlers (12.07%) experienced malnutrition. In Cimahi City, data from the Central Statistics Agency (BPS) in 2022 indicated that 1,397 toddlers (3.34%) suffered from moderate malnutrition, and 3,036 toddlers (9.70%) experienced severe malnutrition (BPS, 2022).

Toddler nutritional problems can cause serious impacts such as failure in physical growth and lack of optimal growth and intelligence, even resulting in death in toddlers.(Muhammadiyah et al., n.d.) Nutritional status is influenced by 2 factors, namely direct and indirect. Direct factors are infectious diseases, birth history, exclusive breastfeeding and types of food consumed with good quality and quantity. Indirect factors are gender, socio-economic, education, knowledge, income, inadequate parenting patterns, poor environmental and family sanitation, low food security at the residential level and attitudes towards health services (Eva et al., n.d.).

Environmental sanitation is a critical factor affecting toddler nutritional status (Wiyono, 2019). Poor sanitation increases the risk of infectious diseases such as diarrhea and acute respiratory infections (ARI), which contribute to malnutrition. Inadequate household environmental conditions, such as limited access to clean water, improper wastewater disposal, and unhygienic practices, increase the likelihood of health problems in toddlers. Previous studies have shown a strong correlation between poor environmental sanitation and the incidence of stunting and malnutrition in toddlers (Syarif Hidayat & Fuada, n.d.).

A preliminary survey in Cibeureum Village, Cimahi City, revealed environmental sanitation issues affecting toddler nutritional status. Crowded living conditions increase the risk of Escherichia coli contamination in clean water sources, leading to diarrhea. Inadequate wastewater disposal and poor personal hygiene practices, such as not washing hands after defecation, exacerbate the situation. According to the 2015 Monthly Toddler Weighing Report at the Cibeureum Health Center, the prevalence of severe malnutrition in toddlers was 0.39%, and moderate malnutrition was 8.93%. These figures highlight the need for further attention to nutritional problems among toddlers.

Based on the above description, this study aims to analyze the relationship between family sanitation practices and toddler nutritional status in RW 08, Cibeureum Village, Cimahi City. This research is expected to contribute to efforts to prevent and address toddler nutritional problems through improving environmental sanitation and family health education.

METHOD

This study employs a quantitative research design with a descriptive correlational approach. The design aims to analyze the relationship between family sanitation attitudes and the nutritional status of infants and toddlers in RW 08, Cibeureum Village, Cimahi City. In this study, infants are defined as children aged 0–12 months, while toddlers refer to children aged 1–3 years.

The sampling method uses a purposive sampling technique, with the research sample consisting of families with infants and toddlers. Data collection is conducted through questionnaires measuring family sanitation attitudes and anthropometric measurements of toddlers to determine their nutritional status. The nutritional status assessment is performed directly by the researcher using anthropometric measurements based on the guidelines issued by the Indonesian Ministry of Health.

This study is conducted in RW 08, Cibeureum Village, Cimahi City. The research procedure includes preparation, implementation, and data analysis stages. During the preparation stage, the researcher obtains research permits from the Health Office, the Public Health Center, and relevant authorities, as well as conducts socialization with respondents. The implementation stage involves respondents completing the questionnaires and the researcher conducting anthropometric measurements of infants and toddlers.

Data analysis is performed using the Chi-Square test to examine the relationship between the independent variable (family sanitation attitudes) and the dependent variable (toddler nutritional status). The Chi-Square test is used because the data is categorical and aims to determine whether there is a significant relationship between the two variables. All research procedures adhere to ethical research standards, including obtaining respondents' consent through informed consent.

RESULTS

This study was conducted in Cibeureum RW 08 from October 2024 to January 2025 and aimed to examine the relationship between family sanitation attitudes and the nutritional status of children under five. A total of 109 respondents participated in the study. The respondents were mothers of children under five years old.

The distribution of respondents based on age showed on table 1. Majority of respondents were between 26–35 years old, accounting for more than half of the sample (52.3%). This is followed by respondents aged 36–45 years at 22.9%, and those aged 18–25 years at 16.5%. A smaller proportion of respondents were in the 46–55 year age group (6.4%) and the 56 years and older group (1.8%).

Table 1. Distribution of respondent based on age

Age	Frequency	Percentage (%)
18-25 years	18	16,5
26-35 years	57	52,3
36-45 years	25	22,9
46-55 years	7	6,4
56 Years and older	2	1,8
Total	109	100,0

These findings indicate that most participants were in the productive age range, which may influence health behaviors and decision-making related to family sanitation and child nutrition. The predominance of younger adults also suggests a potential target group for future health education and intervention programs.

Table 2. Distribution of respondent based on education

Education	Frequency	Percentage (%)
Elementary school graduate	10	9,2
Junior high school graduate	27	24,8
High school graduate	49	45,0
College Graduate	23	21,1
Total	109	100,0

Table 2 shows the distribution of respondents based on their educational background. The majority of respondents were high school graduates, accounting for 49 individuals or 45.0% of the total sample. This was followed by junior high school graduates, totaling 27 respondents (24.8%). College graduates made up 21.1% or 23 individuals, while elementary school graduates represented the smallest group with 10 respondents (9.2%). These results indicate that most mothers of children under five in Cibeureum RW 08 have attained at least a high school education, which may influence their awareness and practices regarding sanitation and child nutrition.

Table 3 presents the distribution of respondents based on the gender of toddlers. The data show that female toddlers slightly outnumber male toddlers, with 56 individuals (51.4%) compared to 53 male toddlers (48.6%). The difference between the two groups is minimal, indicating a relatively balanced gender distribution among toddlers in the study population. This balance supports the generalizability of the findings across both male and female toddlers in Cibeureum RW 08.

Table 3. Distribution of respondent based on education

Gender of Toddlers	Frequency	Percentage (%)
Female	56	51,4
Male	53	48,6
Total	109	100,0

Table 4 presents the distribution of respondents based on the number of family members. The majority of respondents, totaling 38 families (34.9%), reported having more than five family members. This is followed by 30 families (27.5%) with five members, 28 families (25.7%) with four members, and 13 families (11.9%) with three members. These findings indicate that most households in Cibeureum RW 08 are relatively large, which could have implications for household resources, sanitation management, and nutritional intake for toddlers.

Table 4. Distribution of respondents based on the number of family members

Number of family members	frequency	Percentage (%)
3 people	13	11,9
4 people	28	25,7
5 people	30	27,5
More than 5 people	38	34,9
Total	109	100,0

Table 5 shows the distribution of respondents based on their employment status. The majority of respondents, totaling 80 individuals (73.4%), were not working. This was followed by 16 respondents (14.7%) who worked as private employees, and 9 respondents (8.3%) who worked as laborers. A small proportion of respondents were teachers and civil servants, each accounting for 2 respondents (1.8%). These findings suggest that most mothers of toddlers in Cibeureum RW 08 are unemployed, which may influence household income and the ability to provide optimal nutrition and sanitation for their children.

Table 5. Distribution of respondents based on occupation

Employment	Frequency	Percentage (%)
Not Working	80	73,4
Laborer	9	8,3
Private Employee	16	14,7
Teacher	2	1,8
Civil Servant	2	1,8
Total	109	100,0

Table 6 presents the distribution of respondents based on their basic monthly income. The majority of respondents, totaling 44 individuals (40.4%), reported having a basic income between IDR 3,000,000 and 4,000,000. This was followed by 19 respondents (17.4%) with incomes ranging from IDR 2,500,000 to 3,000,000. A smaller proportion reported incomes between IDR 2,000,000 and 2,500,000 (10.1%) and between IDR 1,500,000 and 2,000,000 (10.1%). Only 8 respondents (7.3%) had an income of IDR 1,000,000 to 1,500,000, while 16 respondents (14.7%) earned less than IDR 1,000,000 per month. These findings indicate that while most families fall within the middle-income range, a notable portion still lives with relatively low income, which could potentially affect access to adequate nutrition and health-related resources for toddlers.

Table 6. Distribution of respondents based on basic income

Basic Income	Frequency	Percentage (%)
Less than 1,000,000	16	14,7
1.000.000 - 1.500.000	8	7,3
1.500.000 - 2.000.000	11	10,1
2.000.000 – 2.500.000	11	10,1
2.500.000 - 3.000.000	19	17,4
3.000.000 - 4.000.000	44	40,4
Total	109	100,0

Table 7 presents the distribution of respondents based on their family sanitation attitudes. Out of 109 respondents, 64 families (45.0%) demonstrated good sanitation attitudes, while 45 families (64.0%) showed poor sanitation attitudes. These findings suggest that a significant proportion of households still exhibit inadequate sanitation behaviors, which may increase the risk of infectious diseases and indirectly impact the health and nutritional status of toddlers. This highlights the need for continuous education and interventions to improve sanitation practices at the household level.

Table 7. Family sanitation attitude

Family sanitation attitude	N	Percentage %
Good	64	45.0
Bad	45	64.0
Total	109	100.0%

Table 8 presents the nutritional status of infants and toddlers among the 109 respondents. The majority, 79 children (70.64%), were found to have good nutritional status. However, 22 children (20.18%) were categorized as having poor nutrition, and 8 children (7.34%) were undernourished. These results indicate that while most children are adequately nourished, a considerable portion still experiences nutritional challenges. This suggests a continued need for targeted nutrition interventions, especially for families facing socioeconomic or health-related barriers.

Table 8. Nutritional Status of Infants and Toddlers

Infant Toddler Nutrition Status	N	Percentage %
Good Nutrition	79	70,64
Poor Nutrition	22	20,18
Undernourished	8	7,34
Total	109	100.0%

Table 9 illustrates the relationship between family sanitation attitudes and the nutritional status of infants and toddlers. Among families with good sanitation attitudes, 47 children (73.4%) had good nutritional status, 12 (18.8%) were categorized as poorly nourished, and 5 (7.8%) were undernourished. Meanwhile, in families with poor sanitation attitudes, 32 children (71.1%) had good nutritional status, 10 (22.2%) had poor nutrition, and 3 (6.7%) were undernourished. Although the percentage of children with good nutrition was slightly higher among families with good sanitation attitudes, the Chi-square test resulted in a p-value of 0.894, indicating no statistically significant relationship between family sanitation attitudes and the nutritional status of toddlers. This suggests that while sanitation is important for overall health, other factors may play a more dominant role in determining nutritional outcomes in this population.

Table 9. Relation of nutritional status and family sanitation attitude

Family sanitation attitude		Nutrition Status				
		Good Nutrition	Poor Nutrition	Undernourished	Total	P Value
Good	N	47	12	5	64	
	%	73.4%	18.8%	7.8%	100.0%	
Bad	N	32	10	3	45	0,894
	%	71.1%	22.2%	6.7%	100.0%	
Total	N	79	22	8	109	
	%	72.5%	20.2%	7.3%	100.0%	

DISCUSSION

The discussion highlights the interpretation of study findings in comparison with previous research. In a study by Natalia Puspitawati et al., it was found that the majority of respondents had adequate environmental sanitation with a moderate nutritional status (43%). Interestingly, 50% of respondents with good environmental sanitation still exhibited poor nutritional status, while 57% of those with poor environmental sanitation showed good nutritional status. These findings align with the results of a linear regression test at a significance level of $\alpha \leq 0.05$, where the p-value was ≥ 0.05, indicating that poor environmental sanitation does not significantly influence the nutritional status of toddlers. Similar to our study, this suggests that environmental factors alone may not be the determining factor in child nutrition.

These results are also supported by Mira Dewi et al., whose study showed no significant relationship between Clean and Healthy Living Behavior (PHBS) and the nutritional status of toddlers, with the exception of the environmental variable of a smoke-free home, which was significantly related to the BB/U index. A notable finding from their study was the low parental awareness in monitoring toddler nutritional status, as only 28.6% of parents routinely weighed their toddlers each month. This low awareness may contribute more significantly to poor nutritional outcomes than sanitation attitudes alone.

Furthermore, according to the Indonesian Ministry of Health Regulation No. 66 of 2014, parents, particularly those with children under two years old, are encouraged to visit posyandu (integrated health posts) monthly to monitor their child's growth and health. This policy highlights the importance of routine monitoring in maintaining good nutritional status, beyond environmental sanitation practices.

In this study, no significant relationship was found between specific hygiene behaviors—such as handwashing before and after breastfeeding, after using the bathroom, and before handling food—and toddler nutritional status. While hand hygiene is crucial in preventing infections, especially those transmitted via the fecal-oral route, it appears that in this context, other factors such as nutritional intake, feeding practices, and socioeconomic status may have a more prominent influence.

Overall, while family sanitation attitudes and hygienic behaviors are undeniably important for general health, their direct impact on nutritional status may be limited without the support of adequate nutrition, parental knowledge, and regular growth monitoring practices. This underlines the need for a more holistic approach in improving toddler nutrition through integrated health education and community-based support systems.

One of the strengths of this study lies in its direct measurement of nutritional status using anthropometric data, allowing for objective assessment. In addition, the study contributes valuable insights by comparing sanitation behavior with actual nutritional outcomes among toddlers. However, the study has several limitations. The cross-sectional design limits the ability to establish causality between environmental sanitation and nutritional status. Self-reported behavior data may also be subject to response bias. Moreover, other influential factors such as dietary intake, frequency of illness, and household socioeconomic status were not explored in depth, which may have affected the results.

CONCLUSION

The results of the analysis indicate a p-value of 0.894, which is greater than the significance level of 0.05. This suggests that there is no statistically significant relationship between family sanitation attitudes and the nutritional status of infants and toddlers in the study area. Although good sanitation practices are essential for preventing disease and promoting overall health, this study found that they did not have a direct or significant correlation with children's nutritional status. Other factors, such as dietary intake, parenting practices, and socioeconomic conditions, may play a more dominant role in influencing nutritional outcomes.

RECOMMENDATION

Although this study did not find a significant relationship between family sanitation attitudes and the nutritional status of infants and toddlers, it is still essential to promote clean and healthy living behaviors within households. Health workers are encouraged to provide continuous education on environmental hygiene and sanitation, particularly targeting families with children under five, to prevent the occurrence of infectious diseases that may indirectly impact nutritional status.

Moreover, future health programs should consider integrating interventions that address multiple determinants of nutrition, such as balanced dietary intake, exclusive breastfeeding, responsive parenting, and improving household economic capacity. Further research is also recommended to explore the influence of these other factors using a larger sample size and broader study settings to obtain a more comprehensive understanding of what most significantly affects child nutritional outcomes.

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