

THE ASSOCIATION BETWEEN MOTHERS' NUTRITIONAL KNOWLEDGE AND THE NUTRITIONAL STATUS OF CHILDREN UNDER FIVE AT SION CLINIC

Juliana Sion Sihombing^{1*}, Nur Azizah Lubis², Andilala³, Safriana⁴, Afiatika Ahsani⁵

¹²Program Studi D3 Kebidanan, Sekolah Tinggi Ilmu Kesehatan Indah Medan, Medan, Indonesia

³Program Studi S1 Farmasi, Sekolah Tinggi Ilmu Kesehatan Indah Medan, Medan, Indonesia

⁴Program Studi Kesehatan Masyarakat, Fakultas Ilmu Kesehatan, Universitas Tengku Umar, Aceh Barat, Indonesia

⁵Program Studi D3 Keperawatan, Sekolah Tinggi Ilmu Kesehatan Malahayati, Medan, Indonesia

Correspondence Email : julianasion07@gmail.com

ABSTRACT

Children under five may experience adverse consequences from inadequate nutritional intake. Short-term effects include impaired brain development, intelligence, physical growth, and body metabolism, whereas long-term effects include reduced cognitive ability and academic achievement, weakened immunity, increased susceptibility to illness, and a higher risk of diabetes, obesity, cardiovascular disease, and health instability in later life. This study aimed to examine the association between mothers' nutritional knowledge and the nutritional status of children under five at Sion Clinic. A descriptive research design was employed. The population comprised all mothers with children under five in the Sion Clinic service area, while the sample consisted of 20 mothers whose children attended immunization services. Participants were selected through accidental (convenience) sampling, and data were collected using a questionnaire. Chi-square analysis yielded a p-value of 0.028, which was below the 0.05 significance level, indicating a statistically significant association between mothers' nutritional knowledge and children's nutritional status. Among the 20 respondents, six mothers (30%) had good knowledge and children with good nutritional status; three (15%) had good knowledge and children with adequate nutritional status; two (10%) had moderate knowledge and children with good nutritional status; five (25%) had moderate knowledge and children with adequate nutritional status; one (5%) had moderate knowledge and a child with poor nutritional status; one (5%) had poor knowledge and a child with adequate nutritional status; and two (10%) had poor knowledge and children with poor nutritional status. The findings indicate that higher maternal nutritional knowledge tends to be associated with better nutritional status among children under five. Maternal knowledge plays an important role in caregiving practices and the provision of appropriate nutrition for children.

Keywords: maternal knowledge, nutritional status, children under five

INTRODUCTION

Children under five are defined as children aged 0-59 months. This period is characterized by rapid growth and development and therefore requires nutrients in sufficient quantities and of high quality (Kemenkes, 2019). Nutrition is an important determinant of the quality of human resources. Nutritional status refers to the condition of the body resulting from the absorption and utilization of food. Children under five are particularly vulnerable to nutritional problems (Nurmaliza & Herlina, 2019).

Children under five may experience adverse consequences from inadequate nutritional intake. Short-term effects include impaired brain development, intelligence, physical growth, and body metabolism. Long-term effects include reduced cognitive ability and academic achievement, weakened immunity, increased susceptibility to illness, and a higher risk of diabetes, obesity, cardiovascular disease, and health instability in later life (Kemenkes, 2020).

Available findings indicate that Indonesia ranks fourth among Southeast Asian countries in terms of nutritional problems, with a prevalence of 16%. Among Indonesian children under five, severe malnutrition was reported at 0.9% and undernutrition at 4.0%; in Sumatra, severe malnutrition among children under five reached 2.3%. According to the World Health Organization (WHO), 49 million children under five experienced undernutrition in 2020, of whom 68% lived in Asia and 28% in Africa. Indonesia remains among the countries with a high burden of undernutrition among children under five relative to the WHO threshold of 10% (WHO, 2020).

According to the World Health Organization (WHO), in 2021 approximately 140 million children under five were stunted, 45 million were wasted, and 38.9 million were overweight or obese. Approximately 45% of deaths among children under five are associated with undernutrition. The 2022 Indonesian Study on the Nutritional Status of Children Under Five (SSGBI) reported a decline in the prevalence of undernutrition from 30.8% in 2021 to 27.67% in 2022 (Kemenkes RI, 2022; Indonesian Health Profile, 2021). In Medan City in 2022, severe malnutrition and undernutrition among children under two were reported at 0.6% and 2.3%, respectively; among children under five, the corresponding figures were 0.5% and 1.8% (Indonesian Health Profile, 2021). In February 2023, the provisional number of cases in Medan City decreased to 298 (District Health Profile, 2022).

Previous studies have reported a significant association between maternal knowledge and the nutritional status of children under five. Adequate knowledge contributes to positive attitudes toward meeting children's nutritional needs, including the provision of balanced meals, attention to food hygiene, and regular use of community health services such as integrated health posts to monitor child growth (Florensia et al., 2022). Another study reported a p-value of 0.001 ($p < 0.05$), indicating an association between maternal knowledge and the nutritional status of children under five. Mothers with adequate nutritional knowledge are more capable of providing nutritious food for their children, whereas mothers with limited knowledge may encounter greater difficulty in meeting their children's nutritional requirements (Nadia et al., 2024).

The researchers considered maternal nutritional knowledge to be significantly associated with children's nutritional status because knowledgeable mothers are better able to meet their children's nutritional needs and prepare healthy meals. A high level of maternal nutritional knowledge may therefore contribute to improved nutritional status among children under five. Conversely, limited understanding of appropriate menus, healthy food sources, and suitable meal frequency may result in inadequate nutrition-related health practices. Nevertheless, some children may have poor nutritional status despite their mothers' high level of knowledge, possibly because mothers who work outside the home are less able to monitor their children's dietary intake closely. Therefore, efforts to prevent malnutrition among children under five should include educating mothers about the importance of child nutrition, ensuring access to healthy foods that meet children's nutritional needs, and maintaining appropriate immunization coverage.

RESEARCH METHODS

This study employed a descriptive design to examine the association between mothers' nutritional knowledge and the nutritional status of children under five at Sion Clinic. The population comprised all mothers with children under five in the Sion Clinic service area. The sample consisted of 20 mothers whose children attended immunization services. Participants were recruited through accidental (convenience) sampling, in which respondents who were present at the study site and met the research context were selected. Data were collected using a questionnaire.

RESULTS AND DISCUSSION

Results

Respondent Characteristics

Table 1. Respondent Characteristics

No.	Characteristics	Frequency (n)	Percentage (%)
1	Education		
	Junior High School	10	50
	Senior High School	5	25
	Bachelor's Degree	5	25
2	Age		
	<20 years	0	0
	20-25 years	5	25
	>25 years	15	75
3	Occupation		
	Homemaker	10	50
	Private-Sector Employee	10	50

As shown in Table 1, 10 respondents (50%) had completed junior high school, 5 (25%) had completed senior high school, and 5 (25%) held a bachelor's degree. Five mothers (25%) were aged 20-25 years, while 15 (75%) were older than 25 years. Regarding occupation, 10 respondents (50%) were homemakers and 10 (50%) were private-sector employees.

Table 2. Mothers' Nutritional Knowledge

Knowledge Level	f	%
Good	9	45
Moderate	8	40
Poor	3	15
Total	20	100

Table 2 shows that, among the 20 respondents, 9 mothers (45%) had good nutritional knowledge, 8 (40%) had moderate nutritional knowledge, and 3 (15%) had poor nutritional knowledge.

Table 3. Nutritional Status of Children Under Five

Nutritional Status	f	%
Good	8	40
Adequate	9	45
Poor	3	15
Total	20	100

Table 3 shows that, among the 20 children under five, 8 (40%) had good nutritional status, 9 (45%) had adequate nutritional status, and 3 (15%) had poor nutritional status.

Table 4. Association Between Mothers' Nutritional Knowledge and the Nutritional Status of Children Under Five at Sion Clinic

Knowledge Level	Nutritional Status								p-value
	Good		Adequate		Poor		TOTAL		
	F	%	F	%	F	%	F	%	
Good	6	30	3	15	0	0	9	45	0.028
Moderate	2	10	5	25	1	5	8	40	
Poor	0	0	1	5	2	10	3	15	
Total	8	40	9	45	3	15	20	100	

Table 4 shows that six respondents (30%) had good knowledge and children with good nutritional status, while three (15%) had good knowledge and children with adequate nutritional status. Two respondents (10%) had moderate knowledge and children with good nutritional status,

five (25%) had moderate knowledge and children with adequate nutritional status, and one (5%) had moderate knowledge and a child with poor nutritional status. One respondent (5%) had poor knowledge and a child with adequate nutritional status, while two (10%) had poor knowledge and children with poor nutritional status. The analysis indicated a statistically significant association between mothers' nutritional knowledge and the nutritional status of children under five ($p = 0.028$).

Discussion

Chi-square analysis of the association between mothers' nutritional knowledge and the nutritional status of children under five at Sion Clinic yielded a p -value of 0.028. Because this value was below the 0.05 significance level ($p < 0.05$), a statistically significant association was identified. Among the 20 respondents, six mothers (30%) had good knowledge and children with good nutritional status, while three (15%) had good knowledge and children with adequate nutritional status. Two mothers (10%) had moderate knowledge and children with good nutritional status, five (25%) had moderate knowledge and children with adequate nutritional status, and one (5%) had moderate knowledge and a child with poor nutritional status. One mother (5%) had poor knowledge and a child with adequate nutritional status, while two (10%) had poor knowledge and children with poor nutritional status.

These findings are supported by Naktiany et al. (2022), who identified a significant association between mothers' nutritional knowledge and the nutritional status of children under five. The authors explained that mothers with adequate knowledge are better able to implement appropriate feeding practices, thereby increasing the likelihood that their children will achieve normal nutritional status. Conversely, limited knowledge may reduce mothers' understanding of their children's nutritional requirements and consequently increase the risk of undernutrition.

The present findings are also consistent with Lilis (2024), who reported that most respondents, comprising 40 mothers (80%), had good knowledge of nutrition during breastfeeding and infants with good nutritional status. A strong positive relationship was identified between the two variables. The analysis produced $p < 0.001$ and a positive correlation coefficient of $r = 0.755$ (0.600-0.799), indicating that the null hypothesis was rejected and that maternal knowledge of nutrition during breastfeeding was associated with the nutritional status of infants aged 1-6 months at BPM Nurahmi. Thus, better maternal knowledge of nutrition during breastfeeding was associated with better infant nutritional status (Lilis, 2024).

According to Notoatmodjo (2018), knowledge related to health problems influences the occurrence of health disorders within particular population groups. Limited nutritional knowledge reduces an individual's ability to apply relevant information in daily life and may therefore contribute to nutritional disorders.

Melsi et al. (2024) reported that most mothers had good or moderate knowledge of nutrition for children under five. More than half of the children were classified as undernourished based on the weight-for-age index, whereas most were classified as normal based on the height-for-age index. Bivariate analysis showed an association between maternal nutritional knowledge and children's weight-for-age nutritional status, but no association with height-for-age nutritional status. Maternal nutritional knowledge is important in feeding practices and can influence children's nutritional status; consequently, nutrition education for parents of children under five is essential (Melsi et al., 2024).

This interpretation is further supported by Sumarti et al. (2025), who found that among 75 respondents with good knowledge, 16 had children with short stature. This finding indicates that, although mothers may have adequate knowledge of factors supporting child health, economic limitations can restrict their ability to provide nutritious foods required for optimal growth and development. The study also found that among 33 respondents with poor knowledge, 9 nevertheless had children with normal nutritional status. Mothers may still provide nutritious food despite limited formal nutritional knowledge when they receive support from family members and their surrounding environment or possess a strong awareness of the importance of nutrition. Even with limited theoretical knowledge, awareness of the benefits of healthy food for child growth and development may motivate mothers to provide the best possible care (Sumarti et al., 2025).

The researchers interpret these findings as indicating that most respondents with good knowledge had children with good nutritional status, whereas poor maternal knowledge tended to coincide with poor nutritional status. Maternal knowledge is therefore associated with the nutritional status of children under five. Limited knowledge may lead mothers to provide foods that do not

conform to balanced-nutrition principles, thereby increasing the likelihood of poor nutritional status among their children.

Overall, the findings demonstrate a statistically significant association between mothers' nutritional knowledge and the nutritional status of children under five.

CONCLUSIONS

This study demonstrates that higher levels of maternal nutritional knowledge tend to be associated with better nutritional status among children under five. Maternal knowledge plays an important role in caregiving practices and in ensuring the provision of appropriate nutrition for children.

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