

RELATIONSHIP BETWEEN MOTHERS' KNOWLEDGE AND ATTITUDES ABOUT FEEDING PATTERNS WITH THE NUTRITIONAL STATUS OF PRESCHOOLERS

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ABSTRACT

Background: Nutrition problems in children remain a serious challenge to health development, including in preschool-aged children. One important factor that influences children's nutritional status is the role of mothers as primary caregivers. Mothers' knowledge and attitudes toward nutrition play a crucial role in decision-making to meet their children's nutritional needs. However, many preschool-aged children still experience malnutrition despite their mothers having sufficient knowledge. This prompted research to examine the relationship between mothers' knowledge and attitudes toward feeding patterns and the nutritional status of preschool-aged children.

Methods: The method used in this study is a quantitative approach with a cross-sectional design using non-probability sampling. The study population consisted of 260 mothers with preschool children, with a sample size of 158 participants. The sampling technique used was random sampling. This study used a questionnaire assessing mothers' knowledge and attitudes toward the nutrition of preschool-aged children, which had been adopted and modified.

Results: The results of the chi-square test showed most respondents had poor knowledge (49.4%), and their attitudes were in the good category (53.8%). Most respondents had good nutritional status (60.1%). The relationship between knowledge about dietary patterns and nutritional status (p -value= 0.777), but attitudes and nutritional status (p -value= 0.003).

Conclusion: There was no relationship between knowledge about dietary patterns and the nutritional status of preschool children. However, there was a relationship between attitudes toward dietary patterns and the nutritional status of preschool children. These results emphasise that cognitive aspects need to be expanded with an affective approach.

Keywords: attitude, knowledge, nutritional status, preschool

INTRODUCTION

The balance between a person's dietary intake and the nutrients required for their metabolism determines their nutritional status (Azijah & Adawiyah, 2020). Nutrient deficiencies or excesses can lead to health problems that impact growth, intelligence, and productivity (Darwis, 2021). Children in the preschool age phase tend to start choosing the type of food, so in this phase, ensuring adequate nutrition for children is very important, because this stage marks a period of rapid physical and psychological growth and development (Mourmans et al., 2023). During the preschool years, ensuring adequate nutrition for children is of utmost importance, as this stage marks a period of rapid physical and psychological growth and development.

According to the World Health Organisation (WHO), approximately 45% of children worldwide die due to malnutrition (WHO, 2021). In 2018, 41 million children worldwide suffered from malnutrition, and approximately 38 million of these children were in the

toddler age range. Nutritional status in Indonesia remains a significant issue that requires immediate attention. 10.2% of children are malnourished, a 7.4% decrease from the previous year, according to Basic Health Research (Riskesdas, 2018). The frequency of severe and moderate malnutrition rose by 7.7%, according to data from the Indonesian Nutrition Status Survey. 7.9% of children in the Tangerang region had poor or inadequate nutrition (weight-for-height) (SSGI, 2022).

In this context, mothers' attitudes and knowledge are crucial because they significantly impact their children's nutritional status and overall health. Mothers' attitudes and knowledge directly impact how well their feeding practices meet their children's nutritional needs. Meeting children's nutritional needs requires a thorough understanding of dietary patterns (Khayati & Munawaroh, 2018). Parents' knowledge in implementing feeding practices is a fundamental basis for providing healthy food and eating patterns to their children, and this also supports healthy eating behaviour (De Rosso et al., 2022). New perspectives on children's nutritional status are also gained by emphasising maternal attitudes as a more influential factor than knowledge, with a particular focus on preschool-aged children, who are still relatively rarely studied separately in the context of nutrition (Novayani et al., 2022). Good knowledge will enable mothers to implement appropriate feeding patterns, which will positively impact children's optimal development (Yendi et al., 2016).

Despite this awareness, mothers' attitudes toward feeding their children are less than ideal, which can lead to increased cases of malnutrition in preschool-aged children (Sari et al., 2021). This is due to several factors, including cultural practices such as introducing unhealthy snacks or instant noodles to children at an early age, social environments that discourage healthy eating, and a lack of support or instruction to increase awareness and commitment. Furthermore, these cultural practices influence preschoolers' eating habits, which are passed down from parents to their children. In addition to not having regular mealtimes or controlling their children's food choices, parents often use candy or biscuits as rewards to control their children's eating habits (Syahroni et al., 2021).

Based on the results obtained at one of the community health centers in Tangerang, the incidence of good nutritional status among preschool-aged children was 3,337 out of 5,564 children, 18 children with severe malnutrition, 260 children with moderate malnutrition, 185 children at risk of overweight, 32 children with overweight, and 21 children with obesity. From the data above, it is evident that the incidence of nutritional status is still predominantly found among preschool-aged children. Based on this situation, the researcher aims to link the prevalence of malnutrition with mothers' knowledge and attitudes. Nutrition problems in children, especially toddlers, remain a serious challenge in health development, particularly in developing countries such as Indonesia. Preschool children (aged 3–5 years) are in a phase of rapid growth and development, requiring adequate and balanced nutrition. One important factor influencing children's nutritional status is the role of mothers as primary caregivers. Mothers' knowledge and attitudes toward nutrition are crucial in making decisions to meet their children's nutritional needs. However, many preschool-aged children still experience malnutrition despite their mothers having sufficient knowledge.

Therefore, the purpose of this study was to determine how mothers' attitudes and knowledge about diet are related to the nutritional status of preschool-aged children. Mothers with preschool-aged children (3–5 years old) were also the subjects of this study, and this age group represents a crucial developmental stage different from infants or school-age children.

RESEARCH METHOD

This study uses a quantitative descriptive research method with a cross-sectional approach. Knowledge and attitudes as independent variables, and nutritional status is a dependent variable. The sampling technique used in this study was non-probability sampling, specifically accidental sampling, with a population of 260 mothers of preschool-aged children, resulting in a sample of 158 mothers. This study was conducted on mothers with preschool children at a community health center in Tangerang, Indonesia. The researchers also collaborated with the community health center and community health workers. The study was conducted over four months (January-April 2024). The data collection tool was a questionnaire adapted and modified from Noviyanti et al., (2020) and (Oktaningrum, (2019). Both questionnaires were tested for validity and reliability on 30 mothers with preschool-aged children, with Cronbach's alpha values for knowledge (0.826), attitudes (0.742), and feeding patterns (0.840). Data collection was conducted by distributing questionnaires to mothers who visited the Community Health Center and brought preschool-aged children aged 3-6 years, while adhering to ethical considerations. This study obtained ethical clearance from the Research Ethics Committee of the Faculty of Nursing, Pelita Harapan University, with letter No. 024/KEP/FON/I/2024. Data analysis was conducted using both univariate and bivariate analyses.

RESULTS

The research results were analysed based on the research objectives, namely to determine the demographic characteristics, knowledge, attitudes, and nutritional status of preschool-aged children, and the relationship between knowledge about feeding and nutritional status and mothers' attitudes about feeding and nutritional status.

Table 1. Frequency Distribution of Research Subject Characteristics (n=158)

Variable	Frequency (n)	Percentage (%)
Age		
<26 years	19	12.0
26-35 years	90	57.0
36-45 years	47	29.7
>45 years	2	1.3
Occupation		
Not working	120	75.9
Working	38	24.1
Education		
Elementary School	15	9.5
Junior High School	37	23.4
Senior High School	75	47.5
University	31	19.6

The characteristics of the respondents based on age, occupation, and education are presented in Table 1 below. Many respondents were in the 26-35 age range (57.0%). Many respondents were unemployed (75.9%), and 47.5% of respondents had a high school education.

Table 2. Distribution Based on Knowledge, Attitudes, and Nutritional Status (n=158)

Variable	Frequency (n)	Percentage (%)
Knowledge		
Insufficient	78	49.4
Adequate	54	34.2
Good	26	16.5
Attitude		
Poor	73	46.2
Good	85	53.8
Nutritional Status		
Malnutrition	26	16.5
Under nourishment	37	23.4
Good Nutrition	95	60.1

Table 2 shows that most of the respondents' knowledge of feeding patterns was in the poor category (49.4%), and the majority had good attitudes (53.8%). Most respondents had good nutritional status (60.1%).

Table 3. The Relationship Between Knowledge About Feeding Patterns and the Nutritional Status of Preschool Children

Knowledge	Nutritional Status			Total	p-value
	Poor	Malnutrition	Good		
Less	15	17	46	78	0.777
Enough	6	14	34	54	
Good	5	6	15	26	
Total	26	37	95	158	

Based on the research results, it was found that respondents' knowledge regarding feeding children with nutritional status was in the category of less than 26 respondents, sufficient at 37 respondents, and good at 95 respondents. Respondents have good knowledge about nutritional status, more than those with sufficient and insufficient knowledge.

Table 4. The Relationship Between Mothers' Attitudes Towards Feeding Patterns and the Nutritional Status of Preschool Children

Attitude	Nutritional Status				p-value
	Poor	Malnutrition	Good	Total	
Poor	9	26	38	73	0.003
Good	17	11	57	85	
Total	26	37	95	158	

Based on the table, it was found that the respondents' attitudes regarding feeding children with nutritional status were in the good category for 85 respondents, and poor for 73 respondents. Respondents have better attitudes about nutritional status compared to those with poor attitudes (p-value=0.003).

DISCUSSION

Based on the description of the subjects in this study, it shows that the mothers (57.0%) are still in their productive phase (26-35 years old), so that they can more easily access information from various media (Gani et al., 2022). In addition, most respondents are in the unemployed category. This is supported by previous research, which states that employment status is not related to the nutritional status of preschool-aged children (Narishma et al., 2022). This is because mothers who are not employed have more free time compared to employed mothers, allowing them to meet their children's nutritional needs better. This study shows that most respondents have a high school education. Based on previous research, higher education can influence mothers' knowledge of providing good nutrition to their children (Wahyuni, 2021). However, a low level of education does not guarantee that they lack sufficient knowledge about feeding patterns because of their curiosity (Hasanah & Sriwahyuni, 2022). Mothers with basic education can have preschool-aged children with good nutritional status. This is due to technological developments that enable mothers to easily access information to improve their knowledge about good feeding practices for children (Narishma et al., 2022).

Most of the respondents (53.8%) had a positive attitude, although the majority (49.4%) had limited knowledge about feeding patterns. The majority of those surveyed (60.1%) reported high nutritional status. Researchers' findings indicated that there was no meaningful correlation between mothers' nutritional state and their level of knowledge. This is consistent with a previous study that revealed no significant correlation between the nutritional status of children and the nutritional knowledge of mothers. The ability of mothers to meet their children's dietary demands is not determined by their level of expertise. This could be because, in addition to education, the mother's ability to control food is also crucial (Said et al., 2021).

This is also like the previous research, which stated that there is no significant relationship between knowledge and nutritional status. This is because knowledge does not directly influence nutritional status, whereas nutrient intake and infectious diseases can have a direct influence (Pantaleon, 2019). However, this is not in line with the research that stated that there is a relationship between knowledge and nutritional status because mothers with nutritional knowledge are more likely to know how to establish a healthy diet. The knowledge a mother possesses is related to her attitudes and behaviours in selecting food. Although mothers have sufficient nutritional knowledge, this is not always accompanied by appropriate behaviour in choosing or preparing nutritious food for their children. As a result, children's nutritional status remains suboptimal due to inconsistent nutritional practices (Ningrum, 2024). This is also in line with research that there is no relationship between mothers' knowledge of child nutrition and feeding patterns on the nutritional status of toddlers (Khayati & Munawaroh, 2018).

Mothers who have sufficient knowledge and skills will strive to choose foods with balanced menus that are nutritious and healthy for their children. The more knowledge mothers have about nutrition, the easier it is for them to choose the type and amount of food that is good for their child to consume. Knowledge is not only obtained from school but also through daily experiences. A mother's knowledge and experience about nutrition enable her to choose a variety of foods with good nutritional value for her child (Indrayani et al., 2020).

The results of the study conducted by the researchers show that there is a significant relationship between mothers' attitudes toward feeding patterns and the nutritional status of preschool-aged children. This is in line with the previous study, which found that there is a relationship between mothers' attitudes and children's nutritional status, because attitudes play a crucial role and influence how food is provided to children (Saputri &

Parmi, 2022). However, this does not align with the findings that found no relationship between mothers' attitudes and children's nutritional status (Nurdiana et al., 2021). Children who consistently consume foods with adequate nutritional content will maintain good nutritional status even if their mothers have less favourable attitudes toward feeding them.

A variety of elements, such as emotions, mass media, culture, knowledge, significant individuals, and personal experience, can affect how attitudes are formed (Behrman, 2016). To achieve optimal growth and development, a mother's attitude toward feeding her child is crucial (Perdani et al., 2017). According to the study's findings, most respondents have preschool-aged children who are in good nutritional condition. When the body gets enough nutrients, children can have a good nutritional status. Preschool-aged children's good nutritional condition is ascribed to mothers' roles in ensuring that their children follow appropriate feeding habits (Aryani & Syapitri, 2021)). This is consistent with the results of the questionnaire, which show that most secondary-educated respondents possess the information necessary to implement appropriate feeding practices and achieve optimal nutritional status.

Feeding practices are things mothers can do, such as controlling their children, playing a role in feeding, involving them in food selection, providing food education, providing food, and encouraging a balanced and varied diet for their children. Nutritional problems related to feeding include inappropriate food presentations, such as always fulfilling children's desires to consume the food they want, rarely providing a variety of nutritious foods for children at every meal served at home, and allowing children to eat any food without considering its nutritional value (Hanani & Susilo, 2020).

This study has limitations because it does not control for several other factors that can also influence children's nutritional status, such as family income level and parenting patterns. The researcher declares that there is no conflict of interest in this research. The entire data collection, analysis, and reporting process was conducted independently and objectively, without any influence from any party that could influence the results.

CONCLUSION

There was a significant correlation between the nutritional status of preschool-aged children and mothers' attitudes toward diet, but there was no significant correlation between knowledge about diet and the nutritional status of preschool-aged children. This may be because not only is knowledge needed, but also mothers' ability to manage food is crucial. Mothers can use the findings of this study as a guide to help their preschool-aged children adopt healthy eating habits.

RECOMMENDATIONS

The results of this study can serve as recommendations for mothers to not only understand their children's nutritional status but also develop positive attitudes toward establishing healthy eating patterns for preschool children, and implement healthy eating patterns based on a balanced nutritional menu to maintain and improve their children's nutritional status. This study also serves as a reference in providing health services to mothers with preschool-aged children with malnutrition. It is hoped that this problem can be reduced by continuing to provide information and education about healthy eating patterns to mothers of preschool-aged children. Furthermore, this study recommends examining the relationship between maternal attitudes and behaviours related to children's nutritional status and eating patterns so that appropriate interventions related to eating patterns for children can be found.

REFERENCES

- Aryani, N., & Syapitri, H. (2021). Hubungan Pola Pemberian Makan Dengan Status Gizi Balita Di Bagan Percut. *Jurnal Keperawatan Priority*, 4(1), 135–145. <https://doi.org/10.34012/jukep.v4i1.1402>
- Azijah, I., & Adawiyah A., R. (2020). *Pertumbuhan dan Perkembangan Anak: Bayi, Balita, dan Usia Prasekolah*
- Darwis, D. Y. (2021). *OSF Preprints | STATUS GIZI BALITA*. <https://osf.io/bq9gj>
- De Rosso, S., Ducrot, P., Chabanet, C., Nicklaus, S., & Schwartz, C. (2022). Increasing parental knowledge about child feeding: Evaluation of the Effect of Public Health Policy Communication Media in France. *Frontiers in Public Health*, 10(February), 1–12. <https://doi.org/10.3389/fpubh.2022.782620>
- Gani, K., Rasmaniar, R., & Putri, I. R. (2022). Hubungan Tingkat Pengetahuan Gizi Ibu, Pola Asuh Gizi dan Pola Makan dengan Status Gizi Balita. *Jurnal Stunting Pesisir Dan Aplikasinya*, 1(2). <https://doi.org/10.36990/jspa.v1i2.787>
- Hanani, Z., & Susilo, R. (2020). Hubungan Praktik Pemberian Makan dan Konsumsi Pangan Keluarga dengan Kejadian Stunting Balita di Wilayah Kerja Puskesmas Kalibagor. *Jurnal Kesehatan*, 13(2), 172–182. [10.23917/jk.v13i2.11734](https://doi.org/10.23917/jk.v13i2.11734)
- Hasanah, N., & Sriwahyuni, S. (2022). Hubungan Sikap dan Pengetahuan Ibu dengan Kejadian Stunting di Desa Babul Makmur Kecamatan Simeulue Barat Kabupaten Simeulue. *Jurmakemas*, 2(2), 470–483.
- Indrayani, I., Rusmiadi, L. C., & Kartikasari, A. (2020). Hubungan Antara Pengetahuan Dan Sikap Ibu Dengan Status Gizi Pada Balita Di Wilayah Uptd Puskesmas Cidahu Kecamatan Cidahu Kabupaten Kuningan. *Jurnal Ilmu Kesehatan Bhakti Husada: Health Sciences Journal*, 11(2), 224–234. <https://doi.org/10.34305/jikbh.v11i2.199>
- Kementrian Kesehatan RI. (2021). *Buku Saku Hasil Studi Status Gizi Indonesia (SSGI) Tingkat Nasional, Provinsi, dan Kabupaten/Kota Tahun 2021*.
- Khayati, F. N., & Munawaroh, R. (2018). Hubungan Pengetahuan Ibu dan Pola Pemberian Makanan Terhadap Status Gizi Anak Usia Toddler. *Jurnal Persatuan Perawat Nasional Indonesia (JPPNI)*, 2(1), 52. <https://doi.org/10.32419/jppni.v2i1.83>
- Mourmans, R., Fleischeuer, B., Dibbets, P., Houben, K., & Nederkoorn, C. (2023). Choice-induced tasting. Evaluating the effect of choice on children's acceptance of an unfamiliar vegetable. *Appetite*, 191(June), 107049. <https://doi.org/10.1016/j.appet.2023.107049>
- Narishma, V., Roselina, D., & Budiarto, A. (2022). Hubungan Karakteristik Orang Tua Terhadap Status Gizi Bayi Balita Desa Sungai Kitano Kabupaten Banjar. *Sari Pediatri*, 24(2), 112. <https://doi.org/10.14238/sp24.2.2022.112-18>
- Ningrum, S. O. W. (2024). Hubungan Pengetahuan Gizi dan Pola Makan dengan Status Gizi Anak Sekolah Dasar LPQ Nurul Hikmah Candisari Semarang. *NUTRIZIONE (Nutrition Research and Development Journal)*, 4(1), 103–111. <https://journal.unnes.ac.id/journals/nutrizione/index>
- Noviyanti, L. A., Rachmawati, D. A., & Sutejo, I. R. (2020). Analisis Faktor-Faktor yang Memengaruhi Pola Pemberian Makan Balita di Puskesmas Kencong. *Journal of Agromedicine and Medical Sciences*, 6(1), 14–18. <http://repository.unej.ac.id/handle/123456789/99483>
- Nurdiana, R., Wisanti, E., & Utami, A. (2021). Hubungan Tingkat Pengetahuan Dan Sikap Ibu Dengan Status Gizi Pada Anak Balita. *Jurnal Medika Utama*, 2(3), 892–899. <http://jurnalmedikahutama.com/index.php/JMH/article/view/184>
- Oktaniningrum, I. (2019). Hubungan Pengetahuan Dan Sikap Ibu Dalam Pemberian Makanan Sehat Dengan Status Gizi Anak Di SD Negeri 1 Beteng Kabupaten Magelang Jawa Tengah. *Journal of Culinary Education and Technology*, 8(1), 1–9.

- Pantaleon, M. G. (2019). Hubungan Pengetahuan Gizi dan Kebiasaan Makan Dengan Status Gizi Remaja Putri di SMA Negeri 11 Kota Kupang. *CMHK Health Journal*, 3(3), 69–76.
- Perdani, Z. P., Hasan, R., & Nurhasanah, N. (2017). Hubungan Praktik Pemberian Makan Dengan Status Gizi Anak Usia 3-5 Tahun Di Pos Gizi Desa Tegal Kunir Lor Mauk. *Jurnal JKFT*, 1(2), 9. <https://doi.org/10.31000/jkft.v2i2.59>
- Said, I., Suryati, T., & Barokah, F. I. (2021). Hubungan Pola Pemberian Makanan Bayi dan Anak, Pengetahuan Gizi Ibu dengan Status Gizi Bayi 6-24 Bulan di Wilayah Puskesmas Kebayoran Lama Jakarta Selatan. *Jurnal Kesehatan Global*, 4(2), 84–91. <https://doi.org/10.33085/jkg.v4i2.4855>
- SAPUTRI, M. (2022). Status Gizi Balita Di Bonebae Ii Kecamatan Ulubongka Kabupaten Tojo Una-Una Skripsi Dalam Memperoleh Gelar Sarjana Kesehatan Masyarakat (Skm) Oleh : Megaria Saputri Indonesia Jaya. *Skripsi*.
- Sari, D. P., Helmyati, S., Sari, T. N., & Hartriyanti, Y. (2021). Hubungan Pengetahuan Dan Persepsi Ibu Tentang Status Gizi Anak Dengan Perilaku Ibu Dalam Pemberian Makan Anak. *Journal of Nutrition College*, 10(2), 140–148. <https://doi.org/10.14710/jnc.v10i2.30343>
- Syahrone, A. H. M., Astuti, N., Indrawati, V., & Ismawati, R. (2021). Faktor-Faktor Yang Mempengaruhi Kebiasaan Makan Anak Usia Paskoloh (4-6 Tahun) Ditinjau Dai Capaian Gizi Seimbang. *Jurnal Tata Boga*, 10(1), 12–22. <https://ejournal.unesa.ac.id/index.php/jurnal-tata-boga/>
- UNICEF. (2019). *UNICEF Annual Report, 2019*. In the UNICEF Annual Report 2019. <https://www.unicef.org/media/74016/file/UNICEF-annual-report-2019.pdf>
- WHO. (2021). World Health Statistics 2021. In *Industry and Higher Education (Vol. 3, Issue 1)*. <https://www.who.int/publications/i/item/9789240027053>
- Yendi et al. (2017). Hubungan antara perani ibu dalam pemenuhan gizi anak dengans status gizi anak praskoloh di TK dharma wanita persatuan 2 tlogomas kota malang. *Nursing News*, 2(2), 763–769. <https://publikasi.unitri.ac.id/index.php/fikes/article/view/537>