



## Maternal Knowledge Levels on Nutrition in Toddlers: An Overview

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### ABSTRACT

**Introduction:** Maternal knowledge about nutrition plays a crucial role in ensuring optimal growth and development of toddlers during their critical early years. Understanding the variations in maternal knowledge levels can provide valuable insights into nutritional practices and their impact on child health outcomes.

**Objective:** The objective of this article is to analyze and describe the levels of maternal knowledge regarding nutrition in toddlers to identify gaps and inform strategies for improving child health outcomes.

**Methods:** This study employed a cross-sectional design to assess maternal knowledge of toddler nutrition. The population included mothers with children aged 12–59 months, with a sample of 36 participants selected through accidental sampling. The research was conducted in Wado, Sumedang Regency, from April 25 to May 25, 2024. Data were analyzed using frequency and percentage calculations, facilitated by SPSS software version 22.

**Results:** The study results showed that the majority of mothers had good knowledge about providing nutrition for toddlers, with 33 participants (86%) categorized as good, while the remaining 3 participants (14%) had moderate knowledge.

**Conclusions:** The study concludes that most mothers have good knowledge of toddler nutrition, indicating positive awareness within the community. However, the presence of a small proportion with moderate knowledge highlights the need for targeted educational interventions. Health practitioners should develop tailored nutrition education programs to address these gaps and enhance maternal capacity to support optimal child growth and development.

**Keywords:** maternal knowledge, nutrition, toddler

## Introduction

The golden period (Golden Age) is a critical phase from fetal age until two years old. During pregnancy and up to a child's second year, pregnant women are advised to consume nutrient-rich foods. Proper nutrition enables children under two years old to maximize the development of their brain cells. If nutrition is adequately fulfilled during this period, growth and development will be optimal. Conversely, inadequate nutrition during this time will disrupt the growth and development of all organs and bodily systems, impacting future outcome (Yanti & Agustin, 2022). A toddler is a child under the age of five, divided into two main groups: toddlers (aged 1-3 years) and preschoolers (aged 3-5 years). During this period, nutritional needs increase because toddlers are still in the growth phase, and their physical activities continue to increase. Children aged 2-5 years begin to develop the ability to choose foods based on their preferences. Additionally, toddlers who are more frequently active outside the home become more vulnerable to the risk of infectious diseases (Hasanah, 2023).

Nutritional issues in Indonesia can significantly affect human resources. In Indonesia, undernutrition is one of the most common nutritional problems. Toddlers aged 0–5 years are the age group most vulnerable to nutritional deficiencies or one of the groups most affected by undernutrition. Nutritional status in toddlers is a critical factor that every parent must understand, as undernutrition in toddlers can lead to irreversible problems (Annisa Nuradhiani, 2023). Nutritional problems arise when the intake of nutrients does not meet the body's needs. Nutritional deficiencies in infants can lead to various nutrition-related issues, which can be assessed through their nutritional status. The most common nutritional problems in Indonesia are undernutrition and overnutrition. The most prevalent cases of malnutrition, which are currently receiving significant intervention efforts for improvement, are chronic undernutrition in the form of stunting (short stature) and wasting (underweight) (Purba, 2023).

Nutritional status during childhood requires serious attention from parents, as nutritional deficiencies during this period can lead to permanent (irreversible) damage. Inadequate nutrition intake can have detrimental effects on a child's health, both in the short term and long term. The impacts of malnutrition include (Festy, 2020) The impact of malnutrition during the golden period can increase the risk of infections, comorbidities, cognitive and mental decline, metabolic and physiological disorders, which may ultimately lead to mortality (Papotot et al., 2021). There are two factors that contribute to nutritional problems: direct and indirect factors. Direct factors include food intake and infectious diseases. Indirect factors involve caregiving practices, healthcare, environmental sanitation, and food security. Indirect factors are also related to parents' education, knowledge, income, and skills (Yanti & Agustin, 2022).

According WHO (UNICEF et al., 2023) in 2022, an estimated 45 million children under 5 years old (6.8 percent) were affected by malnutrition, with 13.6 million (2.1 percent) suffering from severe wasting. More than three-quarters of all children with severe malnutrition reside in Asia, while 22 percent live in Africa. In Indonesia, according to Riskesdas data (Kementerian Kesehatan RI, 2018) 17.7% of toddlers are undernourished based on weight-for-age measurements. Of these, 3.9% are severely undernourished, and 13.8% are moderately undernourished. In West Java, 2.6% of toddlers experience severe undernutrition, while 10.6% suffer from moderate undernutrition.

The nutritional status of toddlers is influenced by various factors, such as genetics, income level, physical activity, education level, access to healthcare services, and maternal knowledge. Maternal knowledge of nutrition and education level play a crucial role in preventing malnutrition or undernutrition in toddlers. Parents' knowledge of nutrition affects their ability to provide appropriate food for their children, regulate dietary patterns that meet nutritional needs, choose the right types of food, and prioritize food within the family (Sutrisno et al., 2023).

Meeting nutritional needs is a crucial factor that influences the growth and development of toddlers. Adequate nutrition intake plays a significant role in achieving a good health level, commonly referred to as nutritional status. Nutrition serves key functions in providing energy, building and maintaining body tissues, and regulating various life processes. Good nutritional status enables optimal physical growth, healthy brain development, improved work capacity, and overall health. The development achieved during this period enhances children's capacity in various developmental aspects, which will ultimately impact their lifelong development (Juliana et al., 2022). Proper feeding of toddlers is essential, as the majority of toddlers with normal nutritional status have mothers who practice good feeding habits. This indicates that the mothers provide appropriate food for their toddlers, with meals that are suitable for the child's age and meet the child's nutritional needs (Amel et al., 2023).

The most significant factor affecting an individual's nutritional status is the level of knowledge. Nutritional knowledge influences attitudes and behaviors in food selection, which directly impacts an individual's nutritional condition. A lack of knowledge about nutrition can affect food choices and feeding practices for children. The more a person knows about nutrition, the more they consider the type and quality of food they select for consumption. Individuals with more nutritional knowledge tend to make more informed decisions, using rational judgment and understanding the nutritional value of the food. Indirectly, a mother's nutritional knowledge can influence the nutritional status of her toddler, as mothers with better knowledge are able to care for and meet their child's nutritional needs, ensuring proper nutritional health (Harahap & Zandrato, 2024). Understanding nutrition is crucial, especially for mothers with toddlers, as they need to be aware of their children's nutritional requirements. A mother's knowledge of good nutritional status will influence her understanding of how to provide the right nutrition for her toddler. At a minimum, a mother should know about nutritional needs, feeding practices, and feeding schedules to ensure her child can grow and develop optimally. Children from families with mothers who have low levels of knowledge often have to settle for inadequate meals that may not meet their nutritional needs (Kusumaningrum et al., 2022).

A mother's level of education also influences the nutritional status of her child. Mothers with lower education levels often struggle to access nutrition guidance or may not be aware of what constitutes a healthy daily diet. Therefore, a mother's education level is crucial for supporting her child's growth and development (Nurjanah & Nurhayati, 2022).

## **Objective**

The objective of this article is to analyze and describe the levels of maternal knowledge regarding nutrition in toddlers to identify gaps and inform strategies for improving child health outcomes.

## Methods

### *Research design*

This study employed a cross-sectional design.

### *Population and sample*

The population in this study consists of mothers with toddlers aged 12–60 months in Wado Village, Wado District, Sumedang Regency, totaling 259 toddlers. The sampling method used in this study was accidental sampling, with a sample size of 36 participants. The research was conducted from April 25, 2024, to May 25, 2024.

### *Research instrument*

The instrument used in this study was a questionnaire sheet containing statements regarding demographic data, including information about the mother's initials, age, education level, employment status, toddler's age, and toddler's gender. The questionnaire consisted of 10 questions and was adapted from (Harahap, 2022).

### *Data collection*

Data collection was carried out by distributing the research instrument to respondents through the WhatsApp application in the form of a link directly connected to Google Forms. The responses from the participants were automatically stored online in Google Cloud. The collected data were then transferred to SPSS version 22 for coding and data cleaning processes. Each respondent was asked to complete the questionnaire only once.

### *Data analysis*

Data were analysed using frequency and percentage calculations.

## Result

Tabel 1. Respondents characteristic

<b>Variables</b>	<b>f</b>	<b>%</b>
<b>Age</b>		
<i>17-26 Years</i>	12	33,3
<i>27-36 Years</i>	12	33,3
<i>37-46 Year</i>	12	33,3
<b>Education</b>		
<i>Elementary School</i>	2	5,6
<i>Junior Highschool</i>	19	52,8
<i>Senior Highschool</i>	14	38,9
<i>Bachelor's</i>	1	2,8
<i>Degree/Diploma</i>		
<b>Occupation</b>		
<i>Houswife</i>	35	97,2
<i>Private Sector Employe</i>	1	2,8

Based on the results in Table 1, the distribution of respondents' ages is evenly divided into three groups: 17-26 years with 12 individuals (33.3%), 27-36 years with 12 individuals (33.3%), and 37-46 years with 12 individuals (33.3%). In terms of education, the majority of

respondents had a Junior High School background, totaling 19 individuals (52.8%), while those with a Bachelor's/Diploma education were the fewest, with only 1 individual (2.8%). Regarding occupation, the majority of respondents were Housewives, comprising 35 individuals (97.2%), while 1 individual (2.8%) worked as an employee or entrepreneur.

Table 2. Respondents' Answer Frequency

Question	f	%
P1 (Balanced nutrition is the daily food arrangement that contains nutrients in types and amounts that are appropriate for the body's needs)		
1. Correct	34	94.4
2. Incorrect	2	5.6
P2 (Nutritious food is food that contains the "4 healthy 5 perfect" food groups)		
1. Correct	35	97.2
2. Incorrect	1	2.8
P3 (The benefit of food for children is to provide energy and support their growth)		
1. Correct	32	88.9
2. Incorrect	4	11.1
P4 (One benefit of nutritious food for children is to strengthen the immune system, which functions as a defense against diseases)		
1. Correct	32	88.9
2. Incorrect	4	4.0
P5 (One indication that a child's nutritional needs are met is their active and enthusiastic behavior)		
1. Correct	33	91.7
2. Incorrect	3	8.3
P6 (One indication that a child's food intake is sufficient is the increase in body weight)		
1. Correct	33	91.7
2. Incorrect	3	8.3
P7 (Carbohydrates are the primary source of energy)		
1. Correct	28	77.8
2. Incorrect	8	22.2
P8 (The nutrients required for children are carbohydrates, proteins, fats, vitamins, minerals, and water)		
1. Correct	35	97.2
2. Incorrect	1	2.8
P9 (Proteins are only found in fish and eggs)		
1. Correct	21	58.3
2. Incorrect	15	41.7
P10 (For children to grow and develop well, the food they eat should not just fill their stomachs, but must be diverse, sufficient in portion, clean, and safe)		
1. Correct	26	72.2
2. Incorrect	10	27.8
<b>Mothers' Knowledge Level</b>		
1. Low	0	0.0
2. Adequate	3	14.0
3. Good	33	86.0

Based on the results in Table 2, the majority of respondents answered correctly for each question. For P1, 34 respondents (94.4%) answered correctly, while for P2, 35 respondents (97.2%) answered correctly. For P3 and P4, the majority of respondents also answered correctly, with 32 respondents (88.9%) for each. For P5 and P6, 33 respondents (91.7%) answered correctly. For P7, the majority of respondents, 28 individuals (77.8%), answered correctly, while for P8, 35 respondents (97.2%) answered correctly. For P9, 21 respondents (58.3%) answered correctly, and for P10, 26 respondents (72.2%) answered correctly. The knowledge level of mothers was categorized as good for 33 respondents (86%) and adequate for 3 respondents (14%).

## Discussion

Based on the results in Table 2, the distribution of respondents' ages is evenly divided into three groups: 17-26 years, with 12 individuals (33.3%); 27-36 years, with 12 individuals (33.3%); and 37-46 years, with 12 individuals (33.3%). In terms of education, the majority of respondents had a Junior High School background, totaling 19 individuals (52.8%), while those with a Bachelor's/Diploma education were the fewest, with only 1 individual (2.8%). Regarding occupation, the majority of respondents were Housewives, comprising 35 individuals (97.2%), while 1 individual (2.8%) worked as an employee or entrepreneur. In terms of maternal knowledge, 33 respondents (86%) had a good level of knowledge, and 3 respondents (14%) had an adequate level of knowledge.

The results of this study are consistent with (Kusumaningrum et al., 2022) who state that during adulthood, individuals tend to be more active in societal and social life. Additionally, they begin to focus more on various preparations to support their success in adapting to the next life stage, which is old age. Age has a significant impact on the development of an individual's cognitive abilities. As age increases, a person's ability to absorb information and expand their knowledge tends to improve. This process allows for a better understanding and deeper knowledge over time. The older a person gets, the more extensive the knowledge and experiences they acquire, which contributes to their ability to make more mature decisions. This also affects an individual's capacity to act wisely, think more rationally, control emotions, and show tolerance toward others' opinions. Therefore, age plays an important role in shaping the quality of a person's thinking and social attitudes (Niatullah Aliyati et al., 2024). Age plays a significant role in shaping an individual's capacity to comprehend and interpret information. It serves as a key determinant of knowledge, experience, beliefs, and motivation, all of which influence behavior, especially regarding the provision of adequate nutrition for toddlers (Ertiana & Zain, 2023).

The study conducted by (Bahriyah, 2024) states that mothers who are employed generally have less time to interact with their children compared to mothers who do not work. This time limitation has the potential to affect the level of attention and the quality of daily caregiving provided to the child. Children who are directly cared for by their mothers tend to receive more intensive attention, including in meeting their nutritional needs. However, the fulfillment of children's nutritional needs is also strongly influenced by the family's economic condition. This study is consistent with (Nursa'iidah & Rokhaidah, 2022) research, which found no relationship between employment and the level of knowledge regarding nutrition among mothers.

Knowledge is the result of understanding, which is a concept within a person's mind, acquired through sensory perception of a specific object. Parents play a crucial role in fulfilling their children's nutritional needs (Mufida et al., 2020). Education has a significant impact on individuals, particularly in their participation in health development efforts. Individuals with higher levels of education are more likely to accept and understand information, thus having a broader perspective on various knowledge patterns (Sitanggang & Werdana, 2021). Educational level can influence an individual's level of knowledge. Education refers to the guidance provided by one person to another on a particular subject to help them understand. It is a process of learning, growth, development, or change towards improvement. The higher an individual's level of education, the easier it is for them to absorb information, leading to a greater accumulation of knowledge. In contrast, a lower educational level can hinder the development of an individual's attitude towards accepting new information and values (Naktiany et al., 2022). Although the educational background of the mothers in this study was only at the Junior High School level, their knowledge of nutrition was still categorized as good. This suggests that formal education is not the only determinant of an individual's understanding of nutrition.

Information plays an important role in influencing an individual's level of knowledge. According to the theory by Notoatmodjo, individuals who receive more information will acquire more knowledge. Information can be obtained through mass media, books, healthcare workers, parents, and friends. Even if someone has a low level of education, their knowledge can increase if they receive quality information from various media, such as television, radio, or newspapers. These media become effective sources for delivering information that can broaden an individual's perspective and understanding (Silalahi & Sultami, 2020).

Knowledge is a dominant factor in shaping an individual's actions. Based on experience and research findings, behaviors based on knowledge tend to last longer compared to behaviors that are not rooted in knowledge. The better a person's understanding of health issues, the greater their contribution in preventing nutritional status problems in toddlers. Knowledge also plays a role in shaping a mother's attitude, which ultimately enhances her understanding and ability to meet the nutritional needs of her toddler optimally (Afrisah et al., 2022). Knowledge of nutrition is essential to address issues arising from poor nutritional intake. Women, particularly mothers, play a crucial role as the primary individuals responsible for managing the food consumption within the family (Widad et al., 2024).

## **Conclusion**

The results of the study emphasize the crucial role of maternal knowledge in shaping nutritional behaviors and improving toddlers' nutritional status. Mothers with a good understanding of nutrition are more likely to provide better care and make informed decisions regarding their children's dietary needs, leading to better health outcomes. Factors such as age, education, and access to information also contribute to enhancing maternal knowledge, which positively impacts children's growth and development. Healthcare professionals should focus on increasing maternal awareness, especially for those with lower educational backgrounds, by providing accessible and accurate information through various media. Programs aimed at improving maternal knowledge can prevent malnutrition and support optimal growth in toddlers. Regular counseling sessions with healthcare providers should be encouraged to ensure mothers are equipped to meet their children's nutritional needs.

### **Conflict of interest**

The researchers stated that there is no conflict of interest related to the implementation and publication of the results of this research. The entire research process, from planning, data collection, analysis, to report preparation, was carried out independently without any influence or pressure from any third party. A commitment to research ethics is upheld throughout the research process, ensuring transparency, accuracy and honesty in reporting results. Respondents' participation was voluntary with informed consent, and their confidentiality and privacy were maintained in accordance with applicable research ethics standards. With this statement, researchers hope that the research results can be trusted and used as a valid reference for the development of science and health practices related to ethnomedicine and reproductive health.

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### **Authors' contribution**

Each author makes an equal contribution to all parts of the research. All authors have reviewed and approved the final draft critically and are responsible for the index and similarity of the manuscript.

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