

Original Research

# The Relationship Between Maternal Knowledge About 1000 HPK With Nutritional Status in Children 0-24 Months

Inka Pratiwi<sup>1\*</sup>, Islaeli<sup>2</sup>, Islamiyah<sup>3</sup><sup>1,2,3</sup>Study Program of Nursing, Faculty of Health Science, Universitas Mandala Waluya, Indonesia

Article Info	Abstract
<p>Received: 27-07-2024 Revised: 29-07-2024 Accepted: 30-07-2024</p> <p>*Corresponding Author: Inka Pratiwi Study Program of Nursing, Faculty of Health Science, Universitas Mandala Waluya Email: inkapратиwi@gmail.com</p>	<p><b>Background:</b> Puuwatu Health Center is the puskesmas that has the highest nutritional status problems in 2022 according to (BB/U) compared to other puskesmas based on data from Puuwatu Health Center, the percentage of nutritional status of underweight (BB/Age) Puuwatu Health Center in 2022 is (39.08%).</p> <p><b>Objective:</b> The purpose of this study was to determine the relationship between maternal knowledge about 1000 HPK with nutritional status in children 0-24 months in the working area of Puuwatu Health Center, Kendari City.</p> <p><b>Methods:</b> This type of research is quantitative analytical research with a Cross-Sectional Study approach.</p> <p><b>Results:</b> The analysis method of this study uses the Gamma Correlation Test. The results showed that there was a significant relationship between maternal knowledge and nutritional status in children 0-24 months with <math>p = 0.000</math> which showed that there was a significant relationship between maternal knowledge and nutritional status in children and a correlation value of 0.788 showed a positive correlation with strong correlation strength.</p> <p><b>Conclusion:</b> The conclusion of this study is that there is a relationship between maternal knowledge about 1000 HPK with nutritional status in children 0-24 months in the Puuwatu Health Center Working Area, Kendari City.</p> <p><b>Keywords:</b> 1000 HPK; Children's Nutritional Status; Mother's Knowledge</p>

## Introduction

According to WHO, UNICEF, and World Bank (2014), Indonesia is one of 17 countries (468 million) in the world that experienced three nutritional problems in toddlers, namely weight/height (BB/TB), height/age (TB/U), and weight/age (BB/U) during 2005 to 2013 (International Food Policy Research Institute, 2014). The prevalence of BB/TB problems in Indonesia in 2013 reached 13.5%; in 2000, the prevalence of TB/U reached 42.4% and between 2003–2004 there was a decrease to approximately 29%, but it increased again between 2006–2007 to 40%, then decreased again in 2012 around 3.6%, reaching 36.4%. Meanwhile, the prevalence of BB/U in 2000 reached 1.5% but increased between 2009–2010 to around 13%, then decreased again in 2012 to around 11.5% (Global Nutrition Report, 2018).

Problems in the first 730 days from birth to 2 years old are caused by poor knowledge and nutritional attitudes of parents. This problem can be prevented if the mother has good nutritional status, health, and physical condition. Good maternal nutrition knowledge affects the fulfillment of nutritional consumption, which impacts children's growth and development. Poor maternal knowledge about the first 1000 days of life is associated with a twofold risk of poor nutritional status in toddlers compared to mothers with good knowledge (Lusiani et al., 2021).

Based on data from the Kendari City Health Office, the percentage of underweight (BB/U) according to the Kendari City Health Center in 2019 was Benu-Continent Health Center (30.73%), Poasia Health Center (12.68%), and Abeli Health Center (12.19%). Meanwhile, the health centers with the lowest percentages were Perumnas Health Center (0.48%) and Kandai Health Center (0.97%). In 2021, the highest percentages of underweight (BB/U) were Puuwatu Health Center (20.61%), Benu-Continent Health Center (19.843%), and Abeli Health Center (9.54%). The lowest were Mekar Health Center (0.38%) and Mokoau Health Center (1.14%). The government targets a reduction in stunting prevalence to 14% and undernourished toddlers to 7.0% by 2024 (Dinas Kesehatan Kota Kendari, 2019).

Puuwatu Health Center recorded the highest nutritional problems in 2022 based on underweight nutritional status (BB/age) with 39.08% (UPTD Puskesmas Puuwatu Kendari, 2022). Maternal nutrition knowledge contributes to child nutritional status (Risyananda et al., 2021). Factors included in the 1000 HPK period are maternal intake adequacy, maternal health status, antenatal care (ANC), exclusive breastfeeding, monthly monitoring of child weight and height, immunization, and complementary feeding (Chalid et al., 2014). Maternal knowledge is further applied in attitudes and practices shaping household parenting and health (Adelina & Madanijah, 2018).

Maternal knowledge affects toddler feeding patterns. Lack of nutrition knowledge results in low dietary diversity and quality. Nutritional disorders also stem from the mother's inability to apply 1000 HPK information in daily life. Research has shown a relationship between maternal knowledge and behavior in fulfilling child nutrition in the first 1000 days of life (Sasube & Luntungan, 2017).

Based on this description, researchers are interested in studying the relationship between maternal knowledge of the 1000 HPK and the nutritional status of children aged 0–24 months in the Puuwatu Health Center Working Area of Kendari City in 2022.

## Methods

### Study Design

The study employed a cross-sectional design to observe the relationship between maternal knowledge (independent variable) and a specific effect or condition (dependent variable), with measurement conducted simultaneously without follow-up (Sugiyono, 2019).

### Samples/Participants

The sample size in this study was determined using simple random sampling, a technique where each member of the population has the same probability of being selected. The Slovin formula was applied, resulting in  $n = 69.3$ , rounded to 69 participants (Notoatmodjo, 2010).

### Instruments

Validity testing determines whether an instrument accurately measures what it intends to measure. According to Sugiyono (2018), an instrument is valid if it can appropriately measure the variable of interest. Validity is assessed by correlating item scores with total scores using the product-moment correlation formula, with  $r$ -calculated  $\geq$   $r$ -table (minimum standard) (Sugiyono, 2018). Items not meeting this criterion are excluded from further analysis. The instrument in this study was declared valid because the value of Sig. (2-tailed)  $< \alpha$  (0.05).

Reliability was tested using Cronbach's alpha. According to Arikunto (2010), Cronbach's alpha assesses instrument reliability, with  $r$ -calculated  $>$   $r$ -table (0.361) indicating consistency. The result of  $r$ -calculated (0.734)  $>$   $r$ -table (0.361) confirmed the instrument's reliability (Arikunto, 2010).

### Data Collection

The study was conducted on mothers who had children 0-24 months who were in the Working Area of Puuwatu Health Center, Kendari City with a total of 69 respondents. The sampling technique used is Simple Random Sampling Before being given a questionnaire, researchers conduct an approach or sample screening in accordance with predetermined criteria, then provide an explanation to prospective respondents about this research, then prospective respondents who are willing to become research respondents can read the approval sheet and then sign. During filling out the questionnaire, researchers gave respondents the opportunity to ask questions.

### Data Analysis

Univariate analysis was used to describe the characteristics of each research variable measured. This univariate analysis was carried out on each variable of the research results. Bivariate analysis was conducted to test whether there was a relationship between two research variables, namely the independent variable with the dependent variable. The test used is gamma correlation through the SPSS Version 20 program. This univariate analysis was carried out on each variable of the research results. Bivariate analysis was conducted to test whether there was a relationship between two research variables, namely the independent variable with the dependent variable. The test used is gamma correlation through the SPSS Version 20 program.

### Ethical Considerations

The ethical permit is issued by the Ethics Institute of the Faculty of Health Sciences, Mandala Waluya University. Provide a consent sheet (informed consent), informed consent will be given to respondents before the research is conducted by providing a consent sheet to become a respondent.

## Results

### Frequency Distribution of Respondents

Table 1 shows that of the 69 respondents in the largest age group, namely 21 people (30%) were in the age group of 4-6 months and the least were in the 19-22 and 23-25 groups of 1% each.

Table 1 Distribution of Respondents by Age Baduta  
In Puuwatu Health Center Working Area

Age Interval (Months)	Sum	Presented
1-3	13	19%
4-6	21	30%
7-9	12	17%
10-12	6	9%
13-15	11	16%
16-18	4	6%
19-22	1	1%
23-25	1	1%
<b>Total</b>	<b>69</b>	<b>100%</b>

Source: Primary Data, 2022

Table 2 shows that of the 69 respondents in the largest age group, namely 31 people (45%) in the age group of 27-30 years and the least in the 18-20 and 37-39 groups of 2% respectively

Table 2 Distribution of respondents according to maternal age  
In Puuwatu Health Center Working Area

Age Interval (Years)	Frequency	Presented
18-20	2	3%
21-23	4	6%
24-26	8	12%
27-30	31	45%
31-33	11	16%
34-36	11	16%
37-39	2	3%
<b>Total</b>	<b>69</b>	<b>100%</b>

Source: Primary Data, 2022

Table 3 shows that of the 69 respondents, the largest gender group is found in the male gender, which is 37 people (54%) and the least is in the female gender with 32 people (46%).

Table 3 Distribution of Respondents by Sex Baduta  
In Puuwatu Health Center Working Area

Gender	Frequency	Presented
Man	37	53,6%
Woman	32	46,4%
<b>Total</b>	<b>69</b>	<b>100%</b>

Source: Primary Data, 2022

Table 4 shows that of the 69 respondents, the largest maternal education group is found at the elementary education level, which is 25 people (36.2%) and the least is at the D3 education level with 3 people (4.3%).

Table 4 Distribution of Respondents Based on Maternal Education In Puuwatu Health Center Working Area

Education	Frequency	Presented
SD	25	36,2%
SMP	11	15,9%
SMA	24	34,8%
Diploma	3	4,3%
Bachelor	6	8,7%
<b>Total</b>	<b>69</b>	<b>100%</b>

Source: Primary Data, 2022

Table 5 shows that of the 69 group respondents based on work, the most were in IRT, which amounted to 59 people (85.5%) and the least were in employee jobs with 2 people (2.9%).

Table 5 Distribution of Respondents by Mother's Occupation In Puuwatu Health Center Working Area

Work	Frequency	Presented
IRT	59	85,5%
Private	8	11,6%
Officer	2	2,9%
<b>Total</b>	<b>69</b>	<b>100%</b>

Source: Primary Data, 2022

Table 6 shows that of the 69 group respondents based on knowledge with good knowledge, 33 people (47.8%) and lack knowledge with 36 people (52.2%).

Table 6 Distribution of Respondents Based on Mother's Knowledge In Puuwatu Health Center Working Area

Knowledge	Frequency	Presented
Good	33	47,8%
Less	36	52,2%
<b>Total</b>	<b>69</b>	<b>100%</b>

Source: Primary Data, 2022

Table 7 shows that of the 69 group respondents based on nutritional status, there were 4 (5.8%) clowns with very undernourished status, 31 (44.9%) with undernourished, 28 (40.6%) with normal nutritional status, 6 (8.7%) with a risk of overweight.

Table 7 Distribution of Respondents by Nutritional Status In Puuwatu Health Center Working Area

State of Nutrition	Frequency	Presented
Very Lacking	4	5,8%
Less	31	44,9%
Normal	28	40,6%
Risk of More Weight	6	8,7%
<b>Total</b>	<b>69</b>	<b>100%</b>

Source: Primary Data, 2022

#### Gamma Correlation Test Analysis

Table 8 shows that out of a total of 69 respondents, there are 33 (47.8%) baduta mothers who have good knowledge and 36 (52.2%) mothers who have less knowledge. Of the 33 respondents whose knowledge was good, there were 3 (9.1%) respondents whose nutritional status was very poor, 1 (3.0%) respondent whose child's nutritional status was poor, 23 (69.7%) respondents whose nutritional status

was normal, and there were 6 (18.2%) respondents who had nutritional status at risk of overweight. Furthermore, of the 36 (52.2%) respondents whose knowledge was lacking, there were 1 (2.8%) respondents whose nutritional status was very poor, 30 (83.3%) respondents whose child's nutritional status was poor, 5 (13.9%) respondents whose nutritional status was normal, and no respondents had a nutritional status at risk of overweight.

Table 8 Gamma Correlation Test Analysis Results

Knowledge	State of Nutrition				Total	Coefficient Korelasi (r)	P value
	Very Less	Less	Normal	More BB Risk			
Good	3 (9,1%)	1 (3,0%)	23 (69,7%)	6 (18,2%)	33 (47,8%)	0,788	0,000
Less	1 (2,8%)	30 (83,3%)	5 (13,9%)	0 (0,0%)	36 (52,2%)		
<b>Total</b>	<b>4 (5,8%)</b>	<b>31 (44,9%)</b>	<b>28 (40,6%)</b>	<b>6 (100,0%)</b>	<b>69 (100,0)</b>		

Source: Primary Data, 2022

## Discussion

Based on the results of a study on the relationship between maternal knowledge about the first 1000 days of life (1000 HPK) and nutritional status in children aged 0–24 months in the Puuwatu Health Center work area conducted in July 2022, a relationship was found between maternal knowledge and child nutritional status. The results showed that most of the samples had poor nutritional status: very deficient (5.8%), malnourished (44.9%), normal nutrition (40.6%), and overweight risk (18.2%). Nutritional problems found included samples with very poor nutritional status, poor nutritional status, and risk of overweight.

The study revealed that mothers with good knowledge still had children with very deficient nutritional status (9.1%). This might be due to mothers' limited time for childcare because of employment outside the home. According to Notoatmodjo (2011), work is a time-consuming activity. Mothers with good knowledge but children with poor nutritional status (3.0%) may be influenced by direct factors such as food intake or infectious diseases. Good maternal knowledge with children at risk of overweight (18.2%) is possibly linked to formula feeding, which provides about 20% more calories than breast milk and can lead to overfeeding and obesity (Notoatmodjo, 2011).

Meanwhile, mothers with less knowledge had children with good nutritional status (13.9%). This finding aligns with research by Florence (2017) stating that knowledge does not always translate into changes in eating habits. According to Robinson and Weighley in Adriani et al. (2012), factors influencing nutritional status include food intake, disease, family economy, food production, culture, environment, and healthcare facilities (Adriani, 2012).

Regarding maternal knowledge, the study found that the most incorrect answers (69.6%) concerned the number of iron tablets consumed during pregnancy, suggesting gaps in mothers' understanding of iron supplementation and its importance in preventing anemia and supporting the 1000 HPK program (Permatasari et al., 2018).

Questions about the appropriate age for exclusive breastfeeding also revealed gaps. Exclusive breastfeeding beyond six months without complementary foods can cause nutritional deficits, as breast milk alone no longer meets infants' nutritional needs after this period (Khasanah et al., 2016). Many mothers also lacked knowledge about the timing of complementary feeding (MP-ASI). According to Puji et al. (2016), inappropriate MP-ASI timing increases stunting risk by 2.8 times. Malnutrition in early life is often linked to improper MP-ASI practices and inadequate care (Puji et al., 2016).

Questions about measles immunization age showed gaps in maternal knowledge. Immunization is essential in strengthening children's immunity against disease attacks.

In this study, most mothers of malnourished toddlers were housewives. Research by Rozali (2016) supports this finding, indicating that non-working mothers tend to have toddlers with poorer nutrition compared to working mothers. Suranandi and Chandradewi (2008) suggest that employed mothers with sufficient knowledge can still manage childcare effectively (Lestari et al., 2023).

Overall, most respondents had low knowledge (52.2%), while 47.8% had good knowledge. This finding correlates with low educational attainment among respondents, primarily elementary school graduates. According to Notoatmodjo (2010), limited health knowledge contributes to health problems, including nutritional disorders. Higher education facilitates understanding and application of health and nutrition knowledge (Dian, 2014). Nevertheless, nutritional problems persist due to other factors such as

socioeconomic conditions. Thus, even with good knowledge, mothers should continue to ensure sufficient and balanced child nutrition (Handayani, 2014).

## Conclusion

Based on the results of the study, it can be concluded that there is a relationship between maternal knowledge about 1000 HPK with nutritional status in children 0-24 months in the Puuwatu Health Center Working Area with a gamma correlation coefficient value of 0.788, while the significance value of 0.000 is smaller than the significance level of 0.05 ( $0.000 < 0.05$ ).

## Acknowledgment

My gratitude to Mandala Waluya University, and the community in the Puuwatu health center work area.

## References

- Adelina, M., & Madanijah, S. (2018). Hubungan pengetahuan gizi dan 1000 HPK ibu serta pola asuh dengan status gizi balita (BB/U) di Kecamatan Jasinga Kabupaten Bogor. Bogor Agricultural University.
- Adriani, M. (2012). *Peranan gizi dan siklus kehidupan*. Prenada Media Group.
- Arikunto, S. (2010). *Prosedur penelitian suatu pendekatan praktik*. Rineka Cipta.
- Dinas Kesehatan Kota Kendari. (2019). *Profil kesehatan 2019 Kota Kendari*. Dinas Kesehatan Kota Kendari.
- Global Nutrition Report. (2018). *Indonesia: Overview burden classification the global nutrition report*. Global Nutrition Report. <https://globalnutritionreport.org/resources/nutrition-profiles/asia/south-eastern-asia/indonesia/>
- Handayani, D. (2014). Faktor-faktor determinan status gizi ibu hamil. *Al-Maiyyah Media Transformasi Gender dalam Paradigma Sosial Keagamaan*, 7(1), 34–52.
- Hardiansyah, & Supariasa, I. D. N. (2016). Penilaian status gizi secara biokimia. In *Penilaian status gizi* (pp. 126–132).
- Khasanah, D. P., Hadi, H., & Paramashanti, B. A. (2016). Waktu pemberian makanan pendamping ASI (MP-ASI) berhubungan dengan kejadian stunting anak usia 6–23 bulan di Kecamatan Sedayu. *Jurnal Gizi dan Dietetik Indonesia*, 4(2), 105.
- Lestari, G. A. P., Darawati, M., Chandradewi, A., & Wahyuningsih, R. (2023). Pengaruh edukasi personal hygiene dan sanitasi makanan terhadap perilaku pedagang sate bulayak. *Pontianak Nutrition Journal*, 6(1), 346–350.
- Lusiani, E., Prastyawati, I. Y., & Nobita, A. (2021). Efektifitas pendidikan kesehatan dengan menggunakan media booklet terhadap tingkat pengetahuan ibu tentang stunting. *Jurnal Ilmu Keperawatan Jiwa*, 4(2), 1689–1699.
- Notoatmodjo, S. (2010). *Metodologi penelitian kesehatan*. Rineka Cipta.
- Permatasari, T., Briawan, D., & Madanijah, S. (2018). Efektifitas program suplementasi zat besi pada remaja putri di Kota Bogor. *Media Kesehatan Masyarakat Indonesia*, 14(1), 1.
- Risyananda, E. A., Asterix, E. F., & Setijaningrum, E. (2021). The 1000 Hari Pertama Kehidupan program as an effort to empower the percentage of poor nutrition in Bangkalan Madura District. *Jurnal Administrasi Publik*, 19(2), 154–174.
- Sasube, L. M., & Luntungan, A. H. (2017). Asupan gizi pada 1000 hari pertama kehidupan. *Jurnal Ilmu dan Teknologi Pangan*, 5(2), 1–5. <https://ejournal.unsrat.ac.id/index.php/itp/article/download/19709/19292>
- Sugiyono. (2019). *Metode penelitian kuantitatif, kualitatif, dan R&D* (2nd ed.). Alfabeta.
- Sugiyono. (2022). *Metode penelitian kualitatif untuk penelitian yang bersifat: Eksploratif, enterpretif, interaktif dan konstruktif*. Alfabeta CV.
- Wicaksana, A., & Rachman, T. (2018). Peranan pendidikan, pekerjaan ibu dan pendapatan keluarga terhadap status gizi balita di Posyandu RW 24 dan 08 wilayah kerja Puskesmas Nusukan Kota Surakarta. *Angewandte Chemie International Edition*, 3(1), 10–27. <https://medium.com/@arifwicaksanaa/pengertian-use-case-a7e576e1b6bf>