



Nutritional Status of Toddlers on Mothers' Knowledge About Worm Infections in the Working Area of Kassi Kassi Health Center Makassar

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Abstract

Nutrition is very important in growth and development. Good nutritional status requires more attention because poor nutritional status in children will affect mental, physical growth or thinking abilities, of course, will reduce the level of productivity and ability in adulthood. The aim of this research is to determine the factors associated with the nutritional status of school- age children at SD Negeri 10 Benteng Sidrap Regency. Quantitative research method with a cross sectional study design. The sample consisted of 158 students at SD Negeri 10 Benteng. Data was collected using questionnaires and measurements of body weight and height. Data analysis used the Chi Square Test with a 95% confidence level. The results of this study show that there is a relationship between income with p value = 0.000, knowledge about nutrition with p value = 0.000, parents' education with p value = 0.000, parents' occupation with p value = 0.025, students' snack habits with p value = 0,000, with the student's nutritional status. The conclusion is that the factors that influence nutritional status are income, knowledge about nutritional status, parental education, parental occupation, parental characteristics and snack habits.

Keywords: Nutritional Status, Toddlers, Mothers' Knowledge, Worm Infections

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1. Introduction





Nutrition is one of the determinants of the quality of human resources. The food given daily must contain nutrients according to needs, so that it supports optimal growth and can prevent deficiency diseases, prevent poisoning, and also help prevent the emergence of diseases that can disrupt the child's survival.

Nutritional problems are essentially public health problems. Nutritional problems in Indonesia in general are still dominated by the problem of Protein Energy Deficiency (KEP), the problem of iron anemia, the problem of Iodine Deficiency Disorders (IDD), the problem of Vitamin A deficiency (VAD) and the problem of obesity. The national prevalence of nutritional status of school-age children based on Riskesdas 2010 in terms of body mass index indicators according to age, malnutrition status is 12.2%. Meanwhile, looking at gender, 13.2 % of school-aged boys are underweight while 11.2% of girls are thin.

Nutritional problems actually cannot be separated from the basic concept of the emergence of disease, namely due to the imbalance of various factors, both from the source of the disease (agent), the host (host) and the environment (environment). Factors from agent sources can be divided into eight factors, one of which is biological and parasitic factors. Malnutrition in toddlers includes lack of energy and protein as well as deficiencies of nutrients such as vitamin A, iron, iodine and zinc. Like MMR, the under-five mortality rate in Indonesia is also the highest in the Association of South East Asian Nations.

Good nutritional status to build quality resources must essentially start as early as possible, namely when humans are still in the womb. One thing to pay attention to is the food. Through food, humans get nutrients which are basic needs for life and development. Ignorance about how to feed children under five, in terms of the amount, type and frequency of giving, as well as habits that are detrimental to health (abstinence from certain types of food), are directly and indirectly the main causes of malnutrition problems in children.

According to Unicef in Soekirman, the main factors causing cases of malnutrition are unbalanced food consumption and infectious diseases. These two factors are closely





related to the lack of food availability at the household level, poor parenting patterns and inadequate health services. Furthermore, other factors that are no less important are the low level of knowledge about the importance of maintaining nutrition from infancy and even when mothers are pregnant, and the low level of family income, which is closely related to the lack of optimal empowerment of families or communities to be actively involved in food and nutrition programs.

Based on WHO (World Health Organization) data in 2006, it is known that the incidence of worms in the world is still high, namely 1 billion people are infected with *Ascaris lumbricoides* worms, 795 million people are infected with *Trichuris trichiura* 2-3 worms and 740 million people are infected with Hookworms. The prevalence of worms in Indonesia was still relatively high in 2006, namely 32.6% and in 2007 it reached 65%, especially among economically disadvantaged population groups. Worm infections are one of the most common diseases that spread and infect many children throughout the world. It is estimated that 60% of children in Indonesia suffer from worm infections.

The results of research at the P2B2 Tanah Bumbu Research and Development Workshop in 2008 and 2009 in 13 regencies and cities of South Kalimantan Province found that 23% of school children suffered from worms with a prevalence of ascariasis 10%, trichuriasis 8%, hookworm 3%, hymenolepiasis 1.1%, cases of hymenolipiasis were found in Banjar Regency area is 1.4%.

This disease is related to the environment, because its source is through the soil or (Soil Transmitted Helminths). Worm worms are one of the factors that influence the decline in the quality of human resources, considering that worms will inhibit physical growth and intelligence for children as well as work productivity for adults. Some types of round worms (nematodes), especially those belonging to the intestinal worm group, can reach 70-80% prevalence in some areas.

Globally, the morbidity rate due to intestinal worm infections is 22 million for hookworm, 10 million for *Ascaris lumbricoides*, 6 million for *Trichuris trichiuria* and 39 million for a combination of these 3 types of infection.





The investment of worms in humans is influenced by behavior, hygiene and sanitation in the living environment as well as manipulation of the environment in areas with high humidity and especially for community groups with poor hygiene and sanitation. This condition can cause a high prevalence of worms, coupled with the low socio-economic status of the community.

Cumulative worms in humans can cause loss of nutrients in the form of carbohydrates and protein as well as blood loss, which can reduce work productivity. Worms can also hinder physical and intellectual development in children who are growing. Worms in children also reduce the body's resistance so they are more susceptible to other diseases.

Lack of knowledge about nutrition and health of parents, especially mothers, is one of the causes of malnutrition in toddlers. In rural areas, food is greatly influenced by socio-economic and cultural conditions. There are eating restrictions for toddlers, for example children are not given fish because they can get worms, nuts are not given because they can cause stomach ache and bloating.

The results of interviews with 10 mothers who have toddlers in the Kassi Kassi Health Center working area showed that 3 mothers had good knowledge, 3 mothers had sufficient knowledge and 4 mothers had poor knowledge about worm infections. Mothers' lack of knowledge about worm infections can have an impact on the nutritional status of toddlers.

2. Research Methods

This type of research is analytical survey research with a cross sectional design. The population in this study were all mothers who had toddlers and toddlers aged ≥ 2 years - ≤ 5 years. The sample in this study were mothers who had children under five aged ≥ 2 years - ≤ 5 years. The sampling technique was carried out using "Accidental Sampling". The dependent variable in this study is the nutritional status of toddlers in the Kassi Kassi Community Health Center Working Area. Meanwhile, the independent variable is the mother's knowledge about worm infections in the Kassi Kassi Health Center working area. The research instrument used in this study was a questionnaire





containing questions about mothers' knowledge about worm infections and the nutritional status of toddlers which was distributed to respondents. The data analysis technique uses the Spearman Ran Test.

3. Results and Discussion

a. Results

1) Knowledge

Distribution Mother knowledge Mother about infection worms can seen from

Table 1.

Distribution frequency knowledge Motherabout infection worms

No	Knowledge	Frequency (%)
1.	OK	612.8
2.	Enough	838,3
3.	Less	2348.9
Total		47100

From the table above it can be seen that Mother's knowledge about worm infections namely a mother who has good knowledge of 6 people (12.8%), Mother Which knowledgeable Enough that is 18 person (38.3%), And Mother Which knowledgeable not enough that is 23 person (48.9%).

2) Status Nutrition Toddler

The distribution of nutritional status of toddlers can be seen from table 2:

Table 2.

Distribution frequency Status Nutrition Toddlerin
 region Work Kassi Kassi Health Center

No	Status Nutrition Toddlers	Frequency (%)
1.	Nutrition Over	1021.3
2.	Nutrition Fine	1634
3.	Nutrition Less	1736.2
4.	Nutrition Bad	48.5
Total		47100

From the table above it can be seen that status nutrition toddler





more that is 10 person (21.3%), nutrition toddler Good that is 16 person (34.0%), nutrition toddler not enough that is 17 person (36.2%) and poor toddler nutrition, namely 4 people (8.5%).

3) Connection knowledge Mother about infection worms with status toddler nutrition

Cross tabulation results to find out relationship between maternal knowledge about infection worms with status nutrition toddler in region Work Kassi Kassi Health Center, as seen in the following table:

Connection knowledge Mother about worm infections on nutritional status toddler in region Work Kassi Kassi Health Center.

From the table above, it can be seen that mothers' knowledge about worm infections is 23 mothers with less knowledge (48.9 %) and 17 children with malnutrition (36.2%). The results of statistical analysis using the Spearman rank test show that the value $P = 0.000$ is below $\alpha = 0.05$, so it can be concluded that the null hypothesis (H_0) is rejected and H_a is accepted. Statistical conclusion, there is a relationship between maternal knowledge about worm infections and the nutritional status of toddlers.

b. Discussion

1. Knowledge

Based on table 1 of the 47 respondents, it can be seen that mothers' knowledge about worm infections is 6 mothers with good knowledge (12.8%), 18 mothers with sufficient knowledge (38.3%), and 23 mothers with poor knowledge. people (48.9%). This shows that many mothers' knowledge is lacking. Mothers' knowledge is lacking because many mothers answered question no. 5 as many as 31 respondents (65.9%) regarding the symptoms of worms in toddlers, one of which is that your little one has stopped wetting the bed, but has started wetting the bed again for unclear reasons.

One factor that can cause the transmission of worm infections is a lack of





knowledge about worm infections. Wachidaniyah's research shows that there is a tendency that the higher the knowledge, the better the healthy living behavior.

According to Notoatmodjo, knowledge related to health problems will influence the occurrence of health problems in certain groups. Lack of knowledge about worm infections will result in a reduced ability to apply the information in daily life, which is one of the causes of worm infections.

2. Nutritional Status of Toddlers

Based on table 2, it can be seen that the nutritional status of children under five is more, namely 10 people (21.3%), the nutrition of children under five is good, namely 16 people (34.0%), the nutrition of children under five is less, namely 17 people (36.2%) and the nutrition of children under five is poor, namely 4 people (8.5%).

Nutritional status is defined as a condition of the body resulting from food consumption and use of nutritional substances. Nutrition is one of the determinants of the quality of human resources. The food given daily must contain nutrients according to needs, so that it supports optimal growth and can prevent deficiency diseases, prevent poisoning, and also help prevent the emergence of diseases that can disrupt the child's survival. Good nutritional status to build quality resources must essentially start as early as possible, namely when humans are still in the womb. One thing to pay attention to is the food. Through food, humans get nutrients which are basic needs for life and development. Ignorance about how to feed children under five in terms of the amount, type and frequency of feeding as well as habits that are detrimental to health (abstinence from certain types of food).

The main factors causing cases of malnutrition are unbalanced food consumption and infectious diseases. These two factors are closely related to lack of food availability at the household level, poor parenting patterns and inadequate health services (1).

Furthermore, other factors that are no less important are the low level of





knowledge about the importance of maintaining nutrition from infancy and even when mothers are pregnant, and the low level of family income, which is closely related to the lack of optimal empowerment of families or communities to be actively involved in food and nutrition programs.

3. The relationship between maternal knowledge about worm infections and nutritional status of toddlers.

6 people (12.8%) had good maternal knowledge, 3 people (50.0%) had good nutrition, 18 mothers had sufficient knowledge (38.3%) with 7 people (38.9%) had better nutrition for toddlers, 23 people (48.9%) lacked maternal knowledge and 12 people (52.2%) lacked nutrition. This shows that many mothers lack knowledge due to poor nutrition.

From the results of statistical tests using the Spearman rank test, it was obtained that $P(0.000) < \alpha(0.05)$, this means that there is a statistically significant relationship between mother's knowledge about worm infections and the nutritional status of toddlers with a strong positive correlation, which means the higher The mother's knowledge, the higher the nutritional status of the toddler.

Mothers' lack of knowledge about infections and eating patterns that provide good nutrition for toddlers can affect the nutritional status of toddlers.

Worm infections are a health problem that children often experience caused by the presence of parasitic worms in the body. Worms often attack children, because worm eggs can hatch in the body.

Worm infections are widespread throughout Indonesia which has a tropical climate, especially in rural areas, slum areas and densely populated areas. All ages can be infected with worms and the highest prevalence is in children. This disease is closely related to socio-economic conditions, personal hygiene and the environment.

Mothers' lack of knowledge about infectious diseases in toddlers is also one of the factors why toddlers experience malnutrition. Many of these mothers work in the rice fields so they themselves cannot monitor their children's





nutritional intake at all times. Then many children often play outside the house without using footwear in direct contact with the ground, often snack carelessly and most of them use a lot of water from irrigation that doesn't flow, so environmental cleanliness is also a factor that can influence toddler nutrition. the.

This research is in line with research conducted by Andri Irawan which concluded that there is a relationship between the level of maternal knowledge and the prevention of worms in toddlers.

The results of research from Anita Basuki show that there is no significant relationship between worms and nutritional status in elementary school children in Bunaken Village, Bunaken District, Manado City. Based on the results of statistical analysis, it was found that there was no relationship between worms and nutritional status based on BW/TB ($p=1,000$). This is because there are still many factors that influence children's nutritional status. Such as socio-economics, maternal nutritional behavior, maternal knowledge about nutrition, children's eating patterns, and family income.

Meanwhile, research results from Erni Kurniawati (12) show that there is a relationship between the level of maternal knowledge about nutrition and the nutritional status of toddlers. Based on the Chi Square test, $p=0.001$ ($p<0.05$). Lack of nutritional knowledge results in reduced ability to apply information in daily life and is one of the causes of nutritional disorders.

4. Conclusion

1. From the research, it can be concluded that mothers' knowledge about worm infections is 6 mothers with good knowledge (12.8%), 18 mothers with sufficient knowledge (38.3%), and 23 mothers with poor knowledge (48.9%).
2. The nutritional status of children under five is more, namely 10 people (21.3%), the nutrition of children under five is good, namely 16 people (34.0%), the nutrition of children under five is less, namely 17 people (36.2%) and the nutrition of children under five is poor, namely 4 people (8.5%).





3. There is a significant relationship between maternal knowledge about worm infections and the nutritional status of toddlers in the Kassi Kassi Health Center working area ($p = 0.000$).

5. Compliance with ethical standards

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Disclosure of conflict of interest

This research collaboration is a positive thing for all researchers so that conflicts, problems and others are absolutely no problem for all writers.

Statement of informed consent

Every action we take as authors is a mutual agreement or consent.

References

- Andri Irawan 2001. The Relationship between Mother's Knowledge Level and Prevention of Worm Worms in Toddlers in Tanjung Karang Pusat District, Bandar Lampung
- Aswitami, NGAP, Udayani, NPMY, Sulistianingsih, A., Fitria, F., Pramana, C., Mutia, C., & Supinganto, A. (2022). The effect of pregnancy massage on pregnant mother's anxiety before labor. *International Journal of Health Sciences*, 6(S1), 845–856. <https://doi.org/10.53730/ijhs.v6nS1.4830>
- Anung, S. 2017, Results of the 2017 Nutritional Status Monitoring (PSG).
- Afiat, M., Pariati, P., & Alimuddin, H. (2022). The Effect of Giving Formula Milk on Caries in Preschool Children. *Barongko: Journal of Health Sciences*, 1(1), 35–40. <https://doi.org/10.59585/bajik.v1i1.37>
- Balawati, YF et al. 2004. Introduction to Food and Nutrition. Jakarta: Self-Help Spreader.
- Erni, Kurniawati. 2011. The Relationship between Mothers' Level of Knowledge About Nutrition and the Nutritional Status of Toddlers in Baledono Village, Purworejo District, Purworejo Regency, 2011. *Journal of Health Communication*, 3 (2): 22-31.
- Hehy, GA, Anita B., Rudolf, BP 2013. The relationship between worms and nutritional status in elementary school children in Bunaken Village, Bunaken District, Manado City in 2013. Faculty of Public Health, Sam Ratulangi University, Manado





- Wachidanijah. 2002. Knowledge, Attitudes and Behavior of Children and the Home Environment
- Elisa Pahlevi, A. 2012. Determinants of Nutritional Status in Elementary School Students. *Journal of Public Health*, 7(2), 122–126.
- Fredy Saputra, MK, Adam, AM, Anto, S., Yusufik, Y., Werdyaningsih, E., & Sari, AM (2022). Factors Associated with Learning Difficulties in Elementary School Children. Barongko: *Journal of Health Sciences*, 1(1), 50–52. <https://doi.org/10.59585/bajik.v1i1.40>
- Masdarwati, M., Kadir, E., Serli, S., Ruben, SD, Pannyiwi, R., & Rante, A. (2023). Counseling about Complementary Foods for Breast Milk and the Nutritional Status of Toddlers. *Social Friends: Journal of Community Service*, 1(2), 40–42. <https://doi.org/10.59585/sosisabdimas.v1i2.28>
- Notoadmodjo, Soekidjo. 2003. *Public Health Science*. Jakarta : Rineka Cipta
- Hikmawati, Z, Yasnani, & Rahim AS 2016, The Effect of Counseling with Nutrition Puzzle Promotion Media on Balanced Nutrition Behavior in Class V Students at SD Negeri 06 Poasia, Kendari City 2016. *Journal of Public Health*.
- Purnomo, J Gunawan, Magdalena, et al. 2005. *Atlas of Medical Helminthology*. Jakarta: Gramedia Pustaka Utama.
- Rifdah, Ifdah. 2007. The Relationship between Environmental Sanitation Conditions and Personal Hygiene with the Incidence of Worm Worms in Public Elementary School Students in Cibinong District, Bogor Regency in 2007.
- Rosdiana, R., Djunaedi, D., & Aditia, D. (2023). Parents' Knowledge of Elementary School Children Regarding Persistent Health Cases. Barongko: *Journal of Health Sciences*, 1(3), 122–128. <https://doi.org/10.59585/bajik.v1i3.109>
- Sukirman. 2001. History of Nutrition Science in the Book *Nutrition Science and its Applications*. Jakarta: Nuha Medika.
- Stephenson, L. S., Latham, M. C., & Ottesen, E. A. 2001. Global malnutrition. *Parasitology*, 121: 5-22.
- Susanti, R., Imran, A., Briliannita, A., Akbar, A., Yermi, Y., B, M., Pannyiwi, R., & Rasyid, D. (2023). Counseling on Clean and Healthy Living Behavior in Minasatene District, Pangkajene Islands Regency. *Social Friends: Journal of Community Service*, 1(3), 92–98. <https://doi.org/10.59585/sosisabdimas.v1i3.70>
- Suminar, S., Bare Telan, A., M Dukabain, O., Suluh, DG, Vanchapo, AR, Agustina, A., & Aulia Rahmat, R. (2023). Implementation and Utilization of Family Latrines in Allu Hamlet, Minasa Baji Village, Bantimurung Sub-district, Maros Regency. *International Journal of Health Sciences*, 1(2), 93–101. <https://doi.org/10.59585/ijhs.v1i2.58>
- Ulasaswini, AA, Haris, M., Hidayat, T., Yusriyanto, Y., Syafri, M., Mustari, S., & Hermawan, A. (2023). The effectiveness of clean water filtration on the water quality





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of dug wells in Patingalloang Village, Ujung Tanah District, Makassar City, PT Pertamina Patra Niaga IT Makassar Corporate Social Responsibility Program 2023. Barongko: Journal of Health Sciences, 1(3), 228–242. <https://doi.org/10.59585/bajik.v1i3.147>

Widiyono 2004, Authority and Responsibility, Ghalia Indonesia, Bogor

Wibowo, J. 2008. The relationship between Soil Transmitted Helminths Infection and Learning Achievement of Primary School Children 03 Pringapus, Semarang Regency, Central Java. UNDIP Faculty of Medicine Thesis. Semarang.

Yuslinda, Y., nurhaedah, N., Nurekawati, N., Ahmad, A., Masita, S., & Rahmat, RA (2022). Mother's Knowledge About the Kangaroo Method at BPM Lestari Gowa, Gowa Regency. Barongko: Journal of Health Sciences, 1(1), 29–34. <https://doi.org/10.59585/bajik.v1i1.19>

