

Relationship of Mother's Characteristics and Nutritional Status in Children in Indonesia

Jeviya Marsianah^{1,2*}, Rosihan Adhani³, Adi Nugroho⁴, Husaini², Bahrul Ilmi⁵

¹Universitas Islam Kalimantan Muhammad Arsyad Al Banjari Banjarmasin, South Kalimantan, Indonesia

²Master of Public Health Magister Program, Faculty of Medicine, Lambung Mangkurat University, South Kalimantan, Indonesia

³Faculty of Dentistry, Lambung Mangkurat University, South Kalimantan, Indonesia

⁴School of Public Health, Faculty of Medicine, Lambung Mangkurat University, South Kalimantan, Indonesia

⁵Poltekkes of Indonesian Health Ministry, South Kalimantan, Indonesia

Correspondence Email: sapatkaring22@gmail.com

ABSTRACT

Nutrition plays an important role in the human life cycle from in the womb to old age. The 2009 health law states that the main priority of efforts to improve nutrition in Indonesia is vulnerable groups, one of which is infants and toddlers. The results of the study used the Evidence Gap theory with the aim of analyzing the relationship between maternal characteristics and malnutrition status in children under five in Indonesia based on published studies from 2015-2020. The research method is meta-analysis with a cross sectional design. a total of six research articles (full text) published online in 2015-2020, using the meta-analysis calculator program Review Manager 5.4. The main results of the study were the age of mothers 20-35 years during pregnancy (85.4%), low education level of junior high school, not working parity of mothers with children > 1 (65.7%), and most of the number of children with no more than two children. (68.1%), most of the mother's birth spacing does not exist, and mother's knowledge is good. The conclusion from the six articles was that three articles were analyzed in the meta-analysis, namely maternal education $p = 0.002$ OR = 3.2, mother's occupation $p = 0.002$ OR = 2.70, and mother's knowledge $p = 0.0001$ OR = 4.98. That data mean that there was a relationship between significantly with the nutritional status of under-fives in Indonesia. Variables of mother's age, mother's parity, number of mother's children, and mother's birth spacing cannot be analyzed in the meta-analysis.

Keywords: Characteristics of mothers, nutritional status, children under five

INTRODUCTION

Nutrition plays an important role in the human life cycle from the womb to the elderly. The 2009 health law states that the main priority of efforts to improve nutrition in Indonesia is vulnerable groups, one of which is infants and toddlers. Malnutrition in infants and toddlers can cause growth and development disorders that continue if not treated early.¹ Based on Law Number 36 of 2009 concerning Health, it is stated that health includes physical, mental, spiritual and social health that allows everyone to live productively. One part of improving health status which is the responsibility of the government is through efforts to improve nutrition.²

Global evidence shows that wasting increases the risk of stunting in children, impaired cognitive development, and non-

communicable diseases in adulthood.^{3,4} Indonesia has the fourth highest level of acute malnutrition in the world, with around three million children under five experiencing wasting (thin), of which 1.4 million children are very thin.⁵

Based on the results of the Basic Health Research (Riskesdas) the prevalence of undernourished status tends to increase between 2010 by 17,9% to 2016 by 21%, but the main results of Riskesdas (2018) show a decrease in prevalence to 17,7% of children aged 0- 59 months are still experiencing nutritional problems in Indonesia. while in the National Medium Term Development Plan (RPJMN) it is targeted to decrease to 17%, malnutrition in children aged 0-59 months in (2019), which identifies that the 2015-2019 RPJMN target is likely to be achieved.

Compared to the results of Riskesdas in the current prevalence of stunting in children under two years of age 30,8% in 2018. This figure shows a decline in recent years and the target for reducing stunting under two years of age in 2019 has been met where this figure is close to the target in the RPJMN, which is 28% in 2019. The prevalence of stunting in children is 40% higher in rural areas compared to 31% in urban areas, and much higher in the group with the lowest wealth level compared to the richest quintile.⁵

Malnutrition occurs due to a combination of factors, namely deficiencies in access and quality of food, inadequate air, sanitation and health services and sub-optimal health nursing services. Nutrition improvement in general can be said to be less successful because there are still many large gaps between the goals and the expected results. The program implementation process, starting from the planning, organizing, and evaluation stages is still lacking. The results of the program are shown by outcome indicators, where the number of cases of malnutrition in 2018 is still high compared to 2019, showing that the implementation of the community nutrition improvement program with the aim of reducing cases of malnutrition has not been successful because the expected goals have not been achieved..⁵

The National Policy in an effort to improve community nutrition as stated in Law Number 36 Year 2009 concerning health has mandated that every development activity must be based on health insight. Furthermore, in accelerating nutrition improvement, the government has issued Presidential Regulation number 42 of 2013 concerning the National Movement for the Acceleration of Nutrition Improvement which focuses on the First 1,000 Days of Life. As well as as a basis for decision makers for policy formulation, program planning, determining actions and implementing interventions as well as evaluating nutrition program management.⁶

There are several factors that affect nutrition, growth and development of children under five, namely internal and external factors. Internal factors include health and nutritional intake of pregnant women during pre-natal (fetal period) and nutritional intake of children under five during post-natal (after birth). As for external factors between family, environment and government.⁷ Factors that greatly affect the nutritional status of toddlers, namely, mother's knowledge about the fulfillment of toddler nutrition, family income, and exclusive breastfeeding ASI.⁸

Based on the search results of a systematic review and analysis of the

relationship between maternal characteristics and malnutrition status in children under five in Indonesia. Many researchers found that existing research results gave different results by using a theoretical description (Evidence Gap) so that there was a "gap" that would become the development or novelty of the research results to be carried out. So it is necessary to do a systematic review and then proceed with quantitative analysis in meta-analysis. Therefore, it is necessary to do a literature summary that aims to identify the relationship between maternal characteristics and malnutrition status in children under five in Indonesia. This will provide the basic data needed to plan strategies to address nutritional problems in Indonesia, hopefully this research can be investigated further in the future related to the relationship between maternal characteristics and malnutrition status in children under five in Indonesia.

METHOD

The type of research used is a systematic review and meta-analysis, which is a systematic study accompanied by statistical techniques to calculate several research results (combining two or more research results) regarding the relationship between maternal characteristics and under-five nutritional status in order to obtain new quantitative data. The purpose of a systematic review is to provide a careful summary of all major research available in response to research questions.¹⁰

The research protocol in meta-analysis can use the concept of Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA). Search using google scholar and Garuda databases. The articles used are research articles (full text) published online from 2015-2020 in the Google Scholar and Garuda databases. The statistical test used is Effect Measure Odd Ratio by using the statistical application Review Manager 5.4.

RESULT AND DISCUSSION

In a meta-analysis of the characteristics of mothers with under-five nutritional status in Indonesia, there are six (6) articles that have been screened and in accordance with the research inclusion criteria, the research method uses cross sectional sampling with purposive sampling, random sampling, and proportional cluster sampling. And the research locations taken are limited to the territory of Indonesia, namely in the regions (Central Java, Pekanbaru, Riau, West Java, Yogyakarta, and South Kalimantan). Quasi-experimental design studies were assessed for quality using the JBI

Critical Appraisal Checklist for Quasi-Experimental Studies instrument.

Meta-Analysis of the Relationship of Maternal Age with Undernutrition Status in Toddlers in Indonesia

Based on the mother's age variable in the study of Rahma et al¹⁹ (2020) that this study explains the age of the mother during pregnancy has a p value of 0.029, meaning that there is a relationship between maternal age and the nutritional status of children under five. The OR CI value (95%) 3,927 (1,157-13,1334) indicates that mothers aged less than 20 years or more 35 years (age at risk) have a 3,927 times greater chance of having children under five with poor and poor nutritional status compared to mothers aged 20-35 years (no risk). Meanwhile, according to Hanim Busyra's research¹² (2020) can't be analyzed about mother's age.

Based on the results of the study obtained from the mother's age variable, that from all the articles included there were no articles that analyzed the characteristics of the age of mothers with malnutrition status in toddlers in Indonesia.

Based on research conducted by Labada¹³ (2016) that there is no significant relationship between age and the nutritional status of children under five. In line with Sri Rahayu's research¹⁴ (2013) and Arif¹⁵ (2006) that there is no significant relationship between maternal age and the nutritional status of children under five. Based on UNICEF's opinion (2002) in Arif research¹⁵ (2006), that delaying the first pregnancy until the age of 20 will ensure a safer pregnancy and birth and reduce the risk of low birth weight babies. According to research of Agesti Labada¹³ (2016) and Pravana et al (2017), in line with Rahma's research et al¹¹ (2021) that the age of the mother at delivery < 20 years or > 35 years has a 3,21 times risk for toddlers who experience acute nutritional status compared to poor nutritional status.

Meta-Analyzes Relationship of Mother's Education with Nutritional Status in Children in Indonesia

Data analyzes of mother's education with nutritional status in children shows in Figure 1.

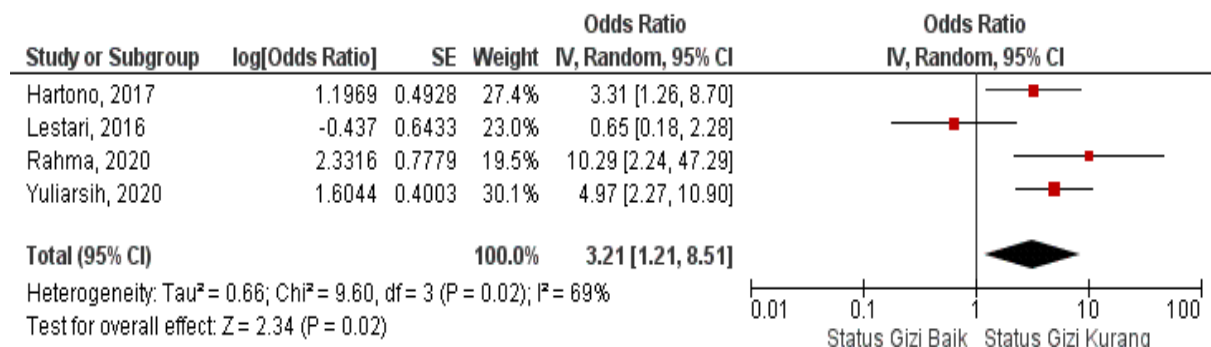


Figure 1. Forest Plot of Mother's Education with Nutritional Status in Children in Indonesia

Based on Figure 1 above, the analysis of the effect size in the form of a diamond is 3.21 (95% CI 1.21 – 8.51) with test of overall effect 0 : Z = 2.34 p = 0.02 and I² = 69%. From these results, it was found that there was a relationship between the variables of maternal education and the nutritional status of under-fives in Indonesia, this was evidenced by the p value < 0,05, namely p = 0,02 so that the analysis results showed that the variation between studies was heterogeneity with a value of I² = 69% this indicates that each of these studies has a different sample size or is not homogeneous because this shows that the heterogeneity value is quite high. Therefore, the model used to calculate the combined effect in maternal education is the random effect model.

Based on Figure 1, it can be seen that the variation between studies in the relationship

between the variables of maternal education and the nutritional status of under-fives in Indonesia is homogeneous with p heterogeneity (p = 0,02) and I² = 69% with test of overall effect 0 : Z = 2.34 p Value = 0,02. Based on the results of the analysis, there is a significant relationship between the mother's education variable and the nutritional status of under-fives in Indonesia with a p value of <0,05, which is 0.02 with a pooled OR of 3,21. It can be concluded that mothers who lack education have a 3,21 times risk of experiencing poor nutritional status compared to good nutritional status. So the model used to calculate the combined effect of maternal education is a random effect model because the p value in the heterogeneous test is 69%, this indicates that each of these studies has a different sample size or is not homogeneous because this

indicates that the heterogeneity value is quite high. While the funnel plot uses a symmetrical population or does not indicate a fairly small published bias as evidenced by the balanced number of left and right side plots, and the distance between the plots is slightly far, this is found in the territory of Indonesia in the Grobogan district, Central Java, Kulon Progo Yogyakarta, Central Java district. Cirebon, West Java, and the new city of South Kalimantan.

This research is in line with Jannah's research (2014) which states that there is a significant relationship between the mother's education level and the nutritional status of children under five at the Bangunsari Semin, Gunung Kidul Posyandu in 2014. These results are in accordance with the research of Khasanah (2018) and Dessie et al (2019) which stated that there is an effect of mother's education level with nutritional status in

children, is not in line with research by Pravana et al (2017) which states that there is no relationship between education level and nutritional status in toddlers. A mother has an important role in maintaining the health and growth of children. This can be shown by the fact that children of mothers who have a higher educational background will have the opportunity to live and grow better and easily receive wider insights about nutrition. Children with mothers with low education have a higher mortality rate than children with mothers with higher education.¹⁶

Meta-Analysis of the Relationship between Mother's Employment and Undernutrition Status in Toddlers in Indonesia

Data analyzes of maternal occupational with nutritional status in children shows in Figure 2.

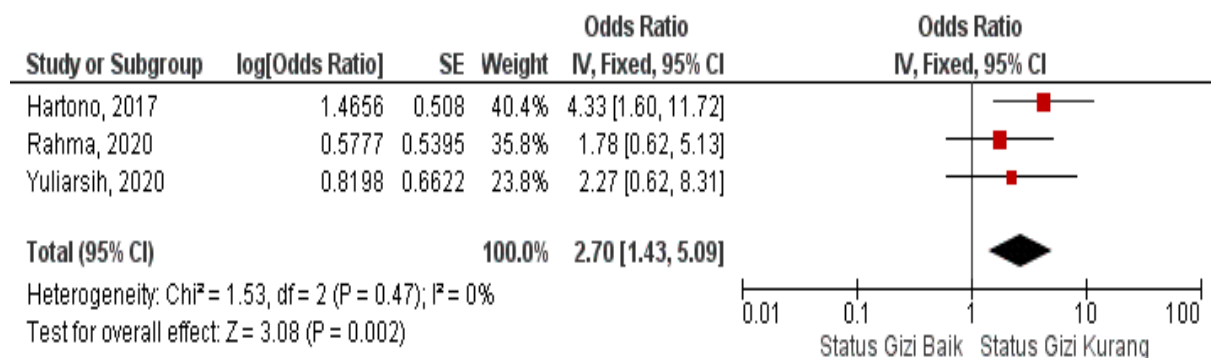


Figure 2. Forest Plot Graph of Maternal Occupational Variables with Poor Nutritional Status in Toddlers in Indonesia

Based on Figure 2 above, the analysis of the effect size in the form of a diamond is 2.70 (95% CI 1.43 – 5.09) with test of overall effect 0 : Z = 3.08 p = 0.002 dan I² = 0%. From these results, it was found that there was a relationship between the mother's occupation variable and the nutritional status of under-fives in Indonesia, this was evidenced by the p value <0.05, namely p = 0.002. so the results of the analysis show that the variation between studies is heterogeneity with a value of I² = 0%, this indicates that each of these studies has a different sample size or is not homogeneous because it shows that the heterogeneity value is very low. Therefore, the model used to calculate the combined effect for maternal employment is the fixed effect model.

Based on Figure 2, it can be seen that the variation between studies in the relationship between the variables of mother's work and malnutrition status in under-fives in Indonesia is homogeneous with p heterogeneity (p = 0,47) and I² = 0% with test of overall effect 0 : Z =

3.08 p Value = 0,002. Based on the results of the analysis, there is a significant relationship between the variables of mother's work and the nutritional status of under-fives in Indonesia with a p value of <0.05, which is 0,002 with a pooled OR of 2,70. It can be concluded that the work of mothers who are less likely to have a 2,70 times risk of experiencing poor nutritional status compared to good nutritional status. In line with the research of Nurun Ayati Khasanah¹⁷ (2018) that there is a relationship between the mother's occupation and the nutritional status of under-five children So the model used to calculate the combined effect for maternal employment is the fixed effect model because the p value in the heterogeneous test is 0%, this indicates that each of these studies has a different sample size or is not homogeneous because it shows that the heterogeneity value is very low. As for the funnel plot using a population that is symmetrical or does not indicate a fairly small published bias as evidenced by the unbalanced

number of plots on the left and right sides, and the distance between the plots is not far, this is found in the territory of Indonesia, namely in the Grobogan district, Central Java, Cirebon district. West Java, as well as in the new city of South Kalimantan.

This study is in line with Khotimah (2015) and Khasanah (2018) that there is a significant relationship between mother's work and the incidence of malnutrition in toddlers and is not in line with research by Eshete et al., (2017) which states that there is no relationship between mother's work and nutritional status in children. toddler. In line with the theory of Oddo et al, (2018) that there is a possibility of a smaller increase in income for mothers and more active work related to informal work can increase normal weight or in some cases, underweight. At the same time, formally employed women in this sample have higher household incomes. We might expect that in the household, income meets the overall need especially for food, thus making energy-dense foods easily accessible and accessible in the environment so that the child is adequately nourished.¹⁸

Meta-Analysis of the Relationship between Maternal Parity and Undernutrition Status in Toddlers in Indonesia

Judging from the mother's parity variable, only Hanim Busyra¹² (2020) research examined maternal parity but only explained about the frequency value of the respondent's characteristics, so it could not be analyzed further.

Based on the results of the study obtained from the maternal parity variable, that from all the articles included, there were no articles that analyzed the characteristics of the maternal parity variable with poor nutritional status in children under five in Indonesia.

Based on research by Larasati, (2019) and Novitasari, (2014) and Abhishek Singh et al, (2017) stated that there is an effect of maternal parity on the nutritional status of toddlers.¹⁹ This is in line with the opinion of Sjahmien Moehji, (1992) that children with a higher parity order such as the fifth child and so on are more likely to suffer from nutritional disorders than the first, second, and third children. Dangers that may pose a risk to a child arise in the event of another birth, while the previous child still needs breast milk, so that the mother's attention turns to the newborn child.²⁰

Meta-Analysis of Relationship between Number of Children and Undernutrition Status in Toddlers in Indonesia

Based on Rahma's research which explains the number of mother's children, the p-value of 0.593 means that there is no relationship between the number of mother's children and the nutritional status of toddlers. Value of OR CI (95%) 1.424 (0.510-3.981) while in the study (Muharry, 2017) only explained about the frequency value of the respondent's characteristics, so it could not be compared between articles.¹¹

Based on the results of the study obtained from the variable number of mother's children that from all included articles there is no article that analyzes the characteristics of the variable number of mothers' children with malnutrition status in toddlers in Indonesia.

Based on the research of Gandini et al²¹ (2016) states that there is a relationship between the number of children and the incidence of malnutrition or undernutrition in children under five. Meanwhile, according to Karundeng's research, (2015) that there are still found the number of children <3 years of age with poor nutritional status, this shows that there are still other factors that affect the nutritional status of toddlers. Meanwhile, Devi's research (2010) found that the factors that influence nutritional status are the age of the child, number of family members, mother's age, education level, occupation and duration of breastfeeding. In this study, the underlying factor was that there was no relationship between the number of children and the nutritional status of toddlers, namely, mothers who already had several children already had experience in caring for children, this statement is in line with Sari's research²² (2014) the number of children associated with the mother's experience in caring for her child in meeting the nutritional needs of her child where mothers who have had children before are more aware of how to care because of their previous child care.²³

Meta-Analysis of the Relationship between Birth Distance and Undernutrition Status in Toddlers in Indonesia

Based on the birth spacing, from all the articles included, there is no article that analyzes the characteristics of the birth spacing of mothers with poor nutritional status in children under five in Indonesia.

Based on the research results obtained from the mother's birth spacing variable, that from all the included articles there is no article that analyzes the characteristics of the mother's birth spacing with poor nutritional status in toddlers in Indonesia.

Birth spacing is the time in years between the last birth and the current birth.²⁴

Birth spacing that is too close will affect the nutritional status in the family due to difficulties in taking care of children and not creating a calm atmosphere at home.²⁵ Based on the results of Karundeng's research²³ (2015) that there is a relationship between birth spacing and the nutritional status of children under five. Where it was found that birth spacing <3 years had good nutritional status, while 3 years had poor nutritional status. This shows that there are other factors that influence the nutritional status of children under five. This study is in line with Nurjana and Septiani, (2013) and according to research by Abhishek Singh et al

that the results further reveal that for the same birth order, if the birth spacing is longer the chances of underweight are lower. This finding agrees with previous research, which showed that the impact of birth spacing on children's nutritional status was stronger than birth order.¹⁹

Meta-Analysis of the Relationship of Mother's Knowledge with Malnutrition Status in Toddlers in Indonesia

Data analyzes of knowledge of mothers with nutritional status in children shows in Figure 3.

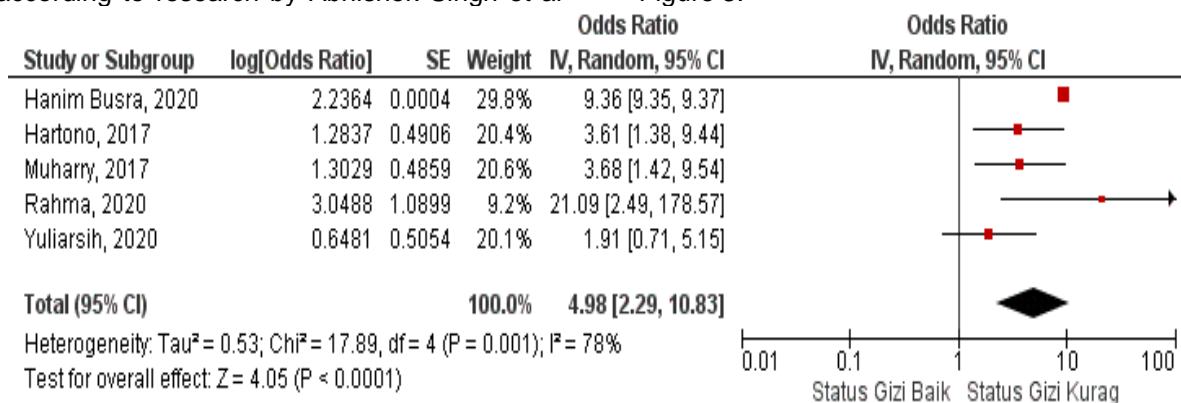


Figure 3. Graph of Forest Plot Variable Knowledge of Mothers with Malnutrition Status in Toddlers in Indonesia

Based on Figure 3 above, the analysis of the effect size in the form of a diamond is 4,98 (95% CI 2,29 – 10,83) with test of overall effect 0 : Z = 4,05 p ≤ 0,0001 dan I² = 78%. From these results, it was found that there was a relationship between the mother's knowledge variable and the nutritional status of under-fives in Indonesia, this was evidenced by the p value < 0,05, namely p = 0,001. so the results of the analysis show that the variation between studies is heterogeneity with a value of I² = 78% this indicates that each of these studies has a different sample size or is not homogeneous because it shows that the heterogeneity value is very high, therefore the model used to calculate the combined effect for knowledge mother is a random effect model.

Based on Figure 3, it can be seen that the variation between studies in the relationship between the variable knowledge of mothers and the nutritional status of under-fives in Indonesia is homogeneous with p heterogeneity (p = 0,001) and I² = 78% with test of overall effect 0 : Z = 55591 p value ≤ 0,0001. Based on the results of the analysis, there is a significant relationship between the mother's knowledge variable and the nutritional status of under-fives in Indonesia with a p value of <0,05, which is 0,00001 with a pooled OR of 4,98. It can be concluded that knowledge with poor nutritional

status has a risk of 4.98 times to experience poor nutritional status compared to good nutritional status. So the model used to calculate the combined effect for maternal knowledge is a random effect model because the p value in the heterogeneous test is 78%, this indicates that each of these studies has a different sample size or is not homogeneous because it shows that the heterogeneity value is very high. While the funnel plot uses an asymmetrical population or indicates a fairly large published bias as evidenced by the unbalanced number of plots on the left and right sides, and the distance between the plots is not far, this is found in the territory of Indonesia, namely in the Grobogan district, Central Java, Sidomulyo Pekanbaru, Riau, Cirebon Regency, West Java, as well as the New City of South Kalimantan.

This study is in line with the research of Khotimah (2015) and Purba et al, (2020) that there is a significant relationship between mother's knowledge and the incidence of malnutrition in toddlers. This result is also in accordance with Khasanah's research¹⁷ (2018) and Appoh et al (2005) that there is an influence of mother's knowledge with poor nutritional status in children. This is in accordance with the theory of Suharjo (2003), namely nutritional knowledge is influenced by

several factors, in addition to education that has been undertaken, social environmental factors and the frequency of contact with mass media also affect nutritional knowledge, one of the causes of nutritional disorders is lack of nutritional knowledge or ability to apply information. Meanwhile, according to the research by Mapesa et al, (2020) explaining that children who are malnourished in hospitals show that many participants are aware of the importance of intervention strategies in prevention and reduction of malnutrition. Apart from this high indication there was a statistically significant difference ($p < 0.05$) between knowledge about the causes and signs of malnutrition and education level that there was a significant relationship with signs of malnutrition in toddlers.²⁷

Nutrition improvement is a joint effort between the government and the community through increased participation and awareness of stakeholders in a planned and coordinated manner to accelerate the improvement of priority community nutrition in the First 1,000 Days of Life. The current National Food and Nutrition Action Plan (RAN-PG) emphasizes that improvement in nutritional status will result from specific nutrition interventions and sensitive nutrition programs that involve many sectors and are focused on the First 1,000 Days of Life. And this program will be adapted to the Indonesian context which will be proposed to deal with the dual burden of nutrition problems which includes several programs that will be implemented throughout the life cycle. There are several interventions that can have an impact on reducing the double burden of nutrition problems but require government regulations to be enforced. The interventions are Specific Nutrition Intervention (directly) and Sensitive Nutrition Program (indirectly).

The obstacle in implementing the policy program of the First 1,000 Days of Life in handling nutritional status or stunting in Indonesia in general is the low achievement of consumption of iodized salt, flour fortification, and oil fortification. This is due to the lack of attention from the central or regional government, which is caused, among other things, by the weak enforcement of local regulations governing the production and distribution of iodized salt. For example, the obligation to install iodized salt labels on each package is not complied with. So far, the program for the acceleration of the First 1,000 Days of Life has been implemented by the health side, but in its implementation there are still various shortcomings and weaknesses such as lack of socialization from the health

side and lack of public interest in participating in the program.

CONCLUSION

The value of the effect size of the relationship between maternal characteristics and malnutrition status in children under five in Indonesia is the relationship between the characteristics of the mother's education variable and the nutritional status of under-fives in Indonesia has an estimated effect size of 3,21 (95% CI 1.21-8.51) so using data analysis of random effects model. The relationship between the characteristics of the mother's work variable and the nutritional status of under-five children in Indonesia has an estimated effect size of 2,70 (95% CI 1.43-5.09) so using fixed effect model data analysis. The relationship between the characteristics of the mother's knowledge variable and the nutritional status of under-fives in Indonesia has an estimated effect size of 4,98 (95% CI 2.29-10.83) so using data analysis of random effects model. The characteristic relationship of the variables of maternal age, maternal parity, number of mother's children, mother's birth spacing could not be identified because the data were incomplete so it could not be studied.

REFERENCES

1. Sukoco NEW, Joko P, Maria HH. Relationship Between Nutritional Status of Children Under Five with Parents Who Work. *Buletin Penelitian Sistem Kesehatan* 2015; 18(4): 387–97.
2. Kemenkes. *Penanggulangan Masalah Gizi Bagi Anak Akibat Penyakit*, 2019.
3. Lelijveld dkk. 'Chronic Disease Outcome After Acute Malnutrition in Melawian Children (ChroSAM): a cohort study', *Lancet Glob Health*, 2016.
4. Grantham-McGregor dkk. 'The Long-term Follow-up Severely Malnourished Children who Participated in an Intervention Program 1994; 65: 428–439.
5. Kementerian Kesehatan Republik Indonesia. *Riset Kesehatan Dasar*; 2018.
6. Kemenkes R. *Bangsa Sehat Berprestasi Melalui Percepatan Perbaikan Gizi pada 1000 Hari Pertama Kehidupan*, Kemkes.go.id; 2021.
7. Rusilanti, Dahlia M YY. *Gizi dan Kesehatan Anak Prasekolah*. Bandung: PT Remaja Rosdakarya; 2015.
8. Marimbi. *Tumbuh Kembang Anak Balita*. Jakarta: Bina Pustaka; 2010.
9. Sastroasmoro S. *Dasar-dasar Metodologi Penelitian Klinis*. Jakarta: Sagung Seto; 2011.
10. Clarke J. *What is a systematic review?*

- Evidence Based Nursing 2011; 14(3): p. 64. doi: <https://doi.org/10.1136/ebn.2011.0049>.
11. Rahma RYD, Farohatus S, Nur H. Karakteristik Ibu dan status gizi balita menurut BB/U di Desa Tambakan Kecamatan Gubug kabupaten grobogan tahun 2019. *Journal of Nutrition College* 2021; 9(1): 12-19.
 12. Busyra H. Faktor yang Mempengaruhi Status Gizi Balita di Wilayah Kerja Puskesmas Sidomulyo Kota Pekanbaru', *JOMIS* 2020; 4(1): 15-24.
 13. Labada A, Ismanto A, Kundre R. Hubungan Karakteristik Ibu dengan Status Gizi Balita yang Berkunjung di Puskesmas Bahu Manado. *eJournal Keperawatan (eKp)* 2016;4(1):1-8.
 14. Sri R. Hubungan antara Beberapa Karakteristik Ibu dengan Status Gizi Anak Balita Studi Kasus Pada Anak Balita Umur 2-3 Tahun Di Desa Sukerjo Kabupaten Klaten [skripsi]. Semarang: Universitas Diponegoro; 2013.
 15. Himawan AW. Hubungan Antara Karakteristik Ibu dengan Status Gizi Balita di Kelurahan Sekaran Kecamatan Gunungpati Semarang [skripsi]. Semarang: Universitas Negeri Semarang; 2006.
 16. Jannah M, Maesaroh S. Hubungan Tingkat Pendidikan Ibu dengan Status Gizi Balita di Posyandu Bangunsari Semin Gunung Kidul Tahun 2014. *Jurnal Kebidanan Indonesia*. 2015; 6(1): 42-52.
 17. Khasanah NA, Sulistyawati W. Karakteristik Ibu dengan Kejadian Gizi Kurang pada Balita 6-24 Bulan di Kecamatan Selat, Kapuas Tahun 2016. *Strada Jurnal Ilmiah Kesehatan*. 2018; 7(1): 1-8.
 18. Oddo VM, Surkan PJ, Hurley KM, Lowery C, Ponce SD, Jones-Smith JC. Pathways of the association between maternal employment and weight status among women and children: Qualitative findings from Guatemala', *Matern Child Nutr*. 2018; 14(1):e12455.
 19. Singh A, Arokiasamy, Pradhan J, Jain K, Patel SK. Sibling and Family-Level Clustering of Underweight Children in Northern India', *J Biosoc Sci*. 2017; 49(3): 348–363.
 20. Larasati MD. Status gizi balita bgm berdasarkan karakteristik ibu di wilayah kerja Kecamatan Sawah Besar tahun 2018. *Jurnal JKFT: Universitas Muhammadiyah Tangerang*. 2019; 4(1): 77-89.
 21. Gandini ALA, Kalsum U, Sutrisno. Faktor-Faktor yang Mempengaruhi Kejadian Malnutrisi pada Balita. *Mahakam Nursing Journal* 2016; 1(2): 90–8.
 22. Sari R. Pengaruh Pengetahuan Kesehatan Responden Terhadap Perilaku Seksual Remaja [thesis]. Medan: Universitas Sumatera Utara; 2016.
 23. Karundeng LR, Ismanto AY, Kundre R. Hubungan Jarak Kelahiran dan Jumlah Anak dengan Status Gizi Balita di Puskesmas Kao Kecamatan Kao Kabupaten Halmahera Utara. *Jurnal Keperawatan (e-Kep)*. 2015; 3(1): 1-9.
 24. Fajarina C. Faktor-faktor yang Berhubungan dengan Berat Badan Bayi Baru Lahir di Rumah Sakit Umum Daerah Sigli Kabupaten Pidie; 2012.
 25. Lutviana EBI. Prevalensi dan Determinan Kejadian Gizi Kurang pada Balita; 2010.
 26. Khotimah H, Kuswandi K. Hubungan Karakteristik Ibu dengan Status Gizi Balita di Desa Sumur Bandung Kecamatan Cikulur Kabupaten Lebak tahun 2013. *Jurnal Obstretika Scientia*. 2014; 2(1): 146-162.
 27. Mapesa J, Meme Joyce, Muthmia O. Effect of community-based nutrition on infant nutrition and associated health practices in Narok, Kenya. *African Health Sciences*. 2020; 20(2): 724–34.