

Nutritional status of pregnant women and its impact on child stunting incidence in Indonesia: Literature review

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Abstract

The aim of this research is to determine the relationship between the nutritional status of pregnant women and the incidence of stunting in children in Indonesia based on a review of several related studies. The research method used is a literature review by searching for research articles related to the topic of stunting and nutrition of pregnant women in Indonesia in the last 10 years from online databases. Relevant articles were collected and analyzed systematically. Several studies show that pregnant women with poor nutritional intake and status are at risk of giving birth to babies with stunting and low birth weight. Other factors such as diet, personal hygiene and infections also influence the nutritional status of pregnant women. Poor nutritional status of pregnant women contributes significantly to the risk of stunting in children. Optimizing the nutrition of pregnant women through supplementation, education and increasing access to nutritious food is important as an effort to prevent stunting from an early age.

Keywords: Nutrition; Pregnant Women; Stunting; Toddler; BMI

1. Introduction

Stunting or short stature is a chronic nutritional problem caused by a lack of nutritional intake for a long time, especially in the first 1000 days of life (HPK). In Indonesia, the prevalence of stunting in 2018 reached 30.8% (9). One important factor that contributes to stunting is the mother's nutritional status during pregnancy. Poor maternal nutritional status before and during pregnancy risks giving birth to babies with low birth weight (LBW) (10). This then has an impact on the baby's postnatal growth which can cause stunting. In Indonesia, the prevalence of underweight pregnant women (BMI <18.5 kg/m²) is still quite high, namely 13.6% based on Riskesdas 2018 (6). Apart from that, the prevalence of short pregnant women (height <145 cm) is still high, namely 29.9% (11). This condition indicates that the nutritional status of pregnant women in Indonesia is still low, which needs serious attention. The low nutritional status of pregnant women in Indonesia is partly caused by poor consumption patterns. Most pregnant women have intakes of protein, iron, zinc, vitamin A and folic acid that do not meet the recommended nutritional adequacy levels (13). This has an impact on fetal growth disorders in the womb which triggers the risk of giving birth to a stunted baby. Apart from consumption patterns, another factor that causes nutritional problems in pregnant women is infection (5). Pregnant women who suffer from chronic infections tend to experience impaired absorption of nutrients needed for fetal growth. Apart from that, pregnant women who are often sick also tend to have a decreased appetite which has an impact on nutritional intake. Therefore, infection management and complete immunization in pregnant women are also important to prevent stunting. Efforts to improve the nutritional status of pregnant women in Indonesia need to prioritize 1000 HPK by providing specific nutritional supplementation, nutritional education, and stimulation of growth and development from the time the fetus is in the womb. The government has implemented a nutritional supplementation program for pregnant women and regional specific nutritional interventions through posyandu. However, program achievements

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still need to be improved considering that the coverage of pregnant women who receive new blood supplement tablets is around 80.9% (4).

2. Material and methods

This research method is a literature review by searching for research articles related to the nutritional status of pregnant women and its impact on child stunting in Indonesia. The literature used comes from research journals, nutrition survey reports, health statistics, and other scientific publications relevant to the topic of stunting and nutrition of pregnant women in Indonesia in the last 10 years (2013-2023). Literature searches will be carried out on online journal databases such as Google Scholar, PubMed, and Garuda Dikti. Search keywords include stunting, nutrition for pregnant women, nutritional status, supplementation, and others. The literature that has been collected will be analyzed systematically to determine research findings related to the nutritional status of pregnant women and child stunting in Indonesia. The main findings will be synthesized and form the basis for the conclusions of this literature review.

3. Results and discussion

The following are articles that have been collected and analyzed:

Table 1 List of Articles

No.	Author	Research title	Method	Result
1.	Sukawati et al	Mother's nutritional status during pregnancy, birth weight of babies with stunting in toddler	This research uses a simple random sampling technique with a cross sectional research design.	Based on the research results, as many as 28.4% of pregnant women experienced a lack of energy and 14.7% of babies were born with low birth weight (LBW) and stunting status. Based on statistical results, it shows that there is a relationship between pregnant women who lack nutrition and stunting, (16)
2.	Evy Noorhasanah & Nor Isna Tauhidah	The relationship of mother's parenting patterns with the incident of stunting in children aged 12-59 months	This research is a correlational analytical type research with a cross sectional approach	Based on the research results, it was found that 55.7% of respondents with poor parenting patterns had short and very short children (8).
3.	Ernawati et al	The influence of pregnant women's protein intake and the body length of born babies on the incident of stunting in children aged 12 months in bogor district	This research uses longitudinal research methods with research subjects of 262 pregnant women 12-16 weeks who have participated in recruitment until the child is born.	Based on the results of univariate, bivariate analysis with Kaplan meler and multivariate analysis with COX regression, babies born to mothers who consumed less than average protein in the second trimester had a risk of 1.6 times. Meanwhile, babies born less than 48 cm have a 5.9 times risk of stunting compared to babies born more than 48 cm tall. In this case, protein intake and nutritional status at birth influence the incidence of stunting (3).
4.	Gaspersz et al	The relationship of consumption pattern factors, history of infectious diseases, and personal hygiene with the nutritional status of pregnant women in the stunting locus area of the north middle east district	This research used an analytical observational research type with a cross sectional approach with a research sample of 45 pregnant women.	Based on the research results, it shows that factors related to the nutritional status of pregnant women are consumption patterns of pregnant women and personal hygiene, while factors that are not related are history of infectious diseases (5).

5	Alfarizi et al	The nutritional status of pregnant women can cause stunting in toddlers	This research used a cross sectional research design with a research sample of 237 mothers who had brought KIA books to Mataram Lir Village and their children in 2019.	Based on the results of univariate analysis, it was found that the majority of mothers had normal nutritional status, around 64.1%, and the majority of toddlers did not experience stunting, around 59.5%. This shows that there is a relationship between maternal nutritional status during pregnancy and the incidence of stunting in toddlers aged 6-59 months, (1).
6	Salamung et al	Factors relating to stunting prevention behaviors during pregnant women in the working area of the bondowoso district health center	The research method used was cross sectional with the research sample being 74 pregnant women in the first trimester.	Based on the results of data analysis, it was found that there was no relationship between stunting prevention behavior and age, education and income, (12)

Based on various articles that have been studied, it was found that the nutritional status of pregnant women has a significant effect on the risk of stunting in children. This is in line with the theory of the First 1000 Days of Life (HPK), where the mother's nutrition before and during pregnancy greatly determines the quality of the baby's growth after birth (13). Sukawati et al's research found that 28.4% of pregnant women experienced a lack of energy which had an impact on 14.7% of the incidence of LBW and stunting. This is supported by research by Ernawati et al which shows that maternal protein intake is correlated with the baby's birth length and the risk of stunting at 12 months. So, optimizing the nutrition of pregnant women can significantly prevent stunting. Apart from nutritional intake, Noorhasanah & Taufik's research also shows that maternal parenting patterns are related to child stunting. Good mother-child interaction can stimulate children's growth. In line with Bronfenbrenner's ecological theory, children's interactions with their immediate environment are very influential on their development (7). According to Gaspersz, pregnant women's consumption patterns and personal hygiene factors are related to their nutritional status. Meanwhile, Green's theory states that behavioral and environmental factors greatly influence a person's health status. With a good diet and personal hygiene, it is hoped that pregnant women can maintain optimal nutritional status. Alfarizi et al's research is in line with several other studies which show a relationship between the nutritional status of pregnant women and child stunting (10). Malnutrition in the fetus can inhibit the growth of the brain and other body organs which continues into infancy. So efforts to optimize the nutrition of pregnant women are very important so that babies avoid the risk of stunting in the future. According to Salamung et al, sociodemographic factors of pregnant women such as age, education and income are not directly related to stunting prevention behavior. However, according to UNICEF, these three factors can influence indirectly through access to information and nutrition services for pregnant women (2). Efforts to optimize the nutrition of pregnant women can be made through blood supplementation tablets and education on a balanced diet rich in protein, vitamins and minerals (Simbolan, 2018). Apart from that, it is also important to detect and intervene in underweight and short pregnant women so that the fetus grows optimally in the womb (1). The strategy to prevent stunting through pregnant women in Indonesia needs to increase the coverage and effectiveness of programs such as providing additional food (PMT) to pregnant women, classes for pregnant women, and pregnancy checks at posyandu. Regular monitoring and evaluation is also needed to ensure program implementation runs well. To break the chain of stunting from an early age, multi-sector cooperation is urgently needed, such as integration of nutrition programs for pregnant women across the health, education, social and village government sectors. Apart from that, optimizing the role of village cadres and midwives is also important to improve nutritional education and counseling for pregnant women at the grassroots level. On the other hand, efforts to improve the economy and access to nutritious food for poor urban and rural families are also needed. The availability and affordability of nutritious food plays an important role in realizing balanced consumption patterns for pregnant women from various socio-economic layers. The development of supporting innovations such as local-based additional food formulations for pregnant women, digital applications for monitoring pregnant women's nutrition, and interactive nutrition education innovations can also support efforts to optimize the 1000 HPK intervention in preventing stunting.

4. Conclusion

Poor nutritional status of pregnant women is closely related to the risk of giving birth to stunted and low birth weight (LBW) babies. Several studies show that pregnant women with poor nutritional intake have a higher risk of giving birth to stunted babies than pregnant women with good nutritional status. Low nutritional intake of pregnant women,

especially protein, iron and folic acid, contributes to impaired fetal growth that continues into infancy. Apart from nutritional intake, other factors that influence the nutritional status of pregnant women are consumption patterns, personal hygiene and infections suffered by pregnant women. The behavior and living environment of pregnant women is very important to pay attention to.

Compliance with ethical standards

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Disclosure of conflict of interest

No conflict of interest to be disclosed.

References

- [1] Alfarisi, R., Nurmalasari, Y., Nabilla, S., Dokter, P. P., Kedokteran, F., & Malahayati, U. (2019). The nutritional status of pregnant women can cause stunting in toddlers. *Malahayati Midwifery Journal*, 5(3), 271-278.
- [2] Ekayanthi, N. W. D., & Suryani, P. (2019). Nutritional education for pregnant women prevents stunting in the pregnant women's class. *Journal of Health*, 10(3), 312-319.
- [3] Ernawati, F., Rosamalina, Y., & Permanasari, Y. (2013). Effect of the Pregnant Women's Protein Intake and Their Baby Length at Birth to the Incidence of Stunting Among Children. *The Journal of Nutrition and Food Research*, 36(1), 1-11.
- [4] Fitriana, F., & Pramardika, D. D. (2019). Evaluation of the blood supplement tablet program for young women. *Indonesian Health Promotion Publication Media (MPPKI)*, 2(3), 200-207.
- [5] Gaspersz, E., Picauly, I., & Sinaga, M. (2020). The relationship between consumption pattern factors, history of infectious diseases, and personal hygiene with the nutritional status of pregnant women in the stunting locus area, North Central East Regency. *Journal of Food Nutrition and Health*, 9(2), 1081-1090.
- [6] Kesuma, P. Z., Kurniati, A. M., Purnamasari, S., Husin, S., Yusnita, H., Sari, P. M., ... & Martadiansyah, A. (2022). Nutrition education and preparation for breastfeeding among groups of pregnant women assisted by the Taman Bacaan Community Health Center. *Journal of Community Service: Humanity and Medicine*, 3(3), 202-214.
- [7] Na'imah, T. (2012). Character education (a study of developmental ecological theory).
- [8] Noorhasanah, E., & Tauhidah, N. I. (2021). The relationship between maternal parenting patterns and the incidence of stunting in children aged 12-59 months. *Journal of Pediatric Nursing*, 4(1), 37-42.
- [9] Rahayu, H. K., Kandarina, B. I., & Wahab, A. (2020). Antenatal care visit frequency of short stature mother as risk factor of stunting among children aged 6-23 months in Indonesia (IFLS 5 Study Analysis). *Indonesian Journal of Nutrition and Dietetics*, 7(3), 107-113.
- [10] Ruaida, N., & Soumokil, O. (2018). The relationship between the KEK status of pregnant women and LBW with the incidence of stunting among toddlers at the Tawiri health center, Ambon city. *Integrated Health Journal*, 9(2), 1-7.
- [11] Sari, D. F., & Oktacia, R. (2018). Description of risk factors for stunting in toddlers in the Nangalo Health Center working area, Padang City. *Lighthouse Health Journal*, 1(1).
- [12] Salamung, N., Haryanto, J., & Sustini, F. (2019). Factors related to stunting prevention behavior when pregnant women in the Bondowoso District Health Center Work Area. *Journal of Health Research " Forikes Voice"*, 10(4), 264-269.
- [13] Septyasih, A. R. N., Widajanti, L., & Nugraheni, S. A. (2016). Relationship between intake of iron, folic acid, vitamin B12 and vitamin C with hemoglobin levels of students at SMP Negeri 2 Tawangharjo, Grobogan Regency. *Journal of Public Health*, 4(4), 521-528.
- [14] Siagian, D. S. (2022). The Effect of Counseling Using Leaflet Media on Mothers' Knowledge About 1000 HPK (First Day of Life) in Rokan Hilir. *Midwifery Journal*, 2(2), 49-53.
- [15] Simbolon, D. (2018). *Nutrition Education Module for Prevention and Management of Chronic Energy Deficiency (KEK) and Anemia in Pregnant Women*. Deepublish.
- [16] Sukmawati, S., Hendrayati, H., Chaerunnimah, C., & Nurhumaira, N. (2018). Maternal nutritional status during pregnancy, birth weight of babies with stunting in toddlers aged 06-36 months at the Bontoa Community Health Center. *Food Nutrition Media*, 25(1), 18-20