THE RELATIONSHIP BETWEEN THE NUTRITIONAL STATUS OF PREGNANT WOMEN AND STUNTING IN CHILDREN AGED 6-36 MONTHS AT THE BATUPUTIH HEALTH CENTER TTS REGENCY NTT PROVINCE

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DOI: https://doi.org/10.33508/jwmj.v5i2.3660

ABSTRACT

Introduction: Based on data from February 2021 at the Batuputih Health Center, TTS Regency, NTT Province, there were 23.6% of toddlers experiencing stunting, meaning that the incidence of stunting at the Batuputih Health Center is still high.
Purpose: To determine the relationship between the nutritional status of pregnant women and the incidence of stunting in children aged 6-36 months at Batuputih Health Center.
Methods: The research design used was cross-sectional. The study population was all children under five who were registered at Batuputih Health Center in February 2021 as many as 1423 people. The sample of children aged 6-36 months who met the criteria were 708 people and were selected using simple random sampling as many as 72 people were calculated using the Lameshow formula. The dependent variable is stunting and the independent variable is the nutritional status of pregnant women based on LiLA. The data was taken from medical records and then analyzed using the Coefficient Contingency correlation test.
Results: There were 29 (40.3%) pregnant women with SEZ and 43 (59.7%) pregnant women with normal nutritional status. There were 19 (26.4%) stunting toddlers and 53 (73.6%) normal toddlers. Pregnant women with SEZ who have stunting toddlers are 13 (18.1%) and 16 (22.2%) normal toddlers. Pregnant women with normal nutritional status who have stunting under five as many as 6 (8.3%) people and toddlers with normal nutritional status 37 (51.4%) people. Statistical test results obtained p of 0.004 ($p < 0.05$), r of 0.325.
Conclusion: There is a significant relationship between poor nutritional status of pregnant women and the incidence of stunting in toddlers aged 6-36 months ($p = 0.004$), the r value is 0.325.

Keywords: *Nutritional status of pregnant women, stunting*

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INTRODUCTION

The United Nations Children's Fund (UNICEF) and the World Health Organization (WHO) said that early childhood has three nutritional problems, namely wasting, obesity and stunting. Stunting reflects chronic malnutrition and can have long-term consequences. Stunting occurs because children do not get proper or proper nutrition at all stages of life.[1] Developmental delay refers to a situation in which a child's length or height does not match his age (<-2 Standard Deviation (SD) of WHO growth criteria).[2]

Global *stunting* is one of the nutritional problems faced by children around the world. In 2017 there were 22.2% of stunted children globally.[3,4] *Stunting* is a chronic nutritional problem caused by many factors.[2,5] Based on data on *stunting* prevalence from WHO, Indonesia is the country with the third largest prevalence in South-east Asia (SEAR). From 2005 to 2017, the average incidence of stunting in children under five in Indonesia was 36.4%. The stunting rate in Indonesia is higher than Bangladesh and Myanmar with a lower per capita income than Indonesia, which proves that the economic status of a country does not necessarily have an effect on the nutritional status of its people.[4]

A 2018 study in Indonesia showed that 30.8% of children under five were *stunted*. The prevalence rate exceeds 20%, so this figure is still higher than the health threshold problem. This shows that today's early childhood still has high nutritional problems.[6,7] In 2018, the province with the highest proportion of *stunting* in children aged 0-59 months was East Nusa Tenggara (NTT).[6]

The nutritional status of pregnant women is the cause of stunting in children under five. Pregnant women with problematic nutritional status can have an effect on the health, safety of the mother, fetus, and newborn baby.[8] The highest prevalence of Chronic Energy Deficiency (SEZ) risk in 2018 was in NTT, which was 36.8%.[9] Maternal nutrition is important for fetal growth, health, infant survival and long-term child development. During the period of conception to the first 6 months, the mother is the only source of nutrition for the fetus and developing baby; first while in utero and then during the first 6 months of life when exclusive breastfeeding is recommended. Malnutrition during pregnancy is a major factor in determining poor fetal growth and *stunting*.[10]

Based on data collection that has been carried out at the Batuputih Health Center, TTS Regency, NTT Province, there are 23.6% of children under five experiencing stunting which is considered high. Therefore, in this study the authors wanted to find out whether there is a relationship between the nutritional status of pregnant women and stunting in children under five in the Batuputih Health Center Work Area.

METHODS

This study uses an observational analysis design and quantitative data collection through cross sectional method. The sample used was 72 samples of toddlers aged 6-36 months who were selected using a probability sampling technique, namely the simple random sampling method. Inclusion criteria were toddlers aged 6-36 months who had complete growth medical record data and toddlers who had mothers with complete medical record data regarding LILA in third trimester ANC, and exclusions were toddlers who had a history of comorbid diseases, a history of giving complementary foods too early, toddlers of mothers who are pregnant with twins. The data were analyzed using the Coefficient Contingency correlation test.

RESULT

A. Measured variables

1. Pregnant Women Nutritional Status

Table 5.1 Frequency Distribution of the Nutritional Status of Pregnant Women in the Batuputih Health Center Working Area in 2021.

Variable	Category	f	%
Pregnant Women Nutritional Status	KEK	29	40,3
	Normal	43	59,7
Total		**72**	**100,0**

Table 5.1 shows that the majority of pregnant women have normal nutritional status, namely 43 (59.7%) people.

2. Stunting

Table 5.2 Distribution of Stunting Frequency in Batuputih Health Center Work Area in 2021.

Variable	Category	f	%
Stunting	*Stunting*	19	26,4
	Normal	53	73,6
Total		**72**	**100,0**

Table 5.2 shows that the majority of children under five have normal height as many as 53 (73.6%) people.

B. Maternal Nutritional Status Relationship with Stunting

The relationship between two variables, namely the nutritional status of pregnant women and stunting in toddlers aged 6-36 months can be seen in table 5.3.

Table 5.3 Analysis of the Relationship between the Nutritional Status of Pregnant Women and Stunting Toddlers Age 6-36 Months in the Batuputih Health Center Working Area in 2021.

Pregnant Women Nutritional Status	***Stunting***				**Total**		***Contingency Coefficient***	
	Stunting		Normal				*Value*	*Approximate significance*
	F	%	f	%	F	%	.325	.004
KEK	13	18,1	16	22,2	29	40,3		
Normal	6	8,3	37	51,4	43	59,7		
Total	19	26,4	53	73,6	72	100		

Table 5.3 shows that 29 (40.3%) mothers experienced SEZ. There were 13 (18.1%) mothers with SEZ nutritional status with stunting toddlers and 16 (22.2%) mothers with SEZ nutritional status who had normal toddlers. Meanwhile, mothers with normal nutritional status were 43 (59.7%). Mothers with stunting toddlers were 6 (8.3%) and 37 (51.4%) mothers who had normal children. From the results of the Coefficient Contingency correlation test, a p value of 0.004 was obtained, which means that there is a relationship between the nutritional status of pregnant women and stunting. The r value is 0.325, which means that there is a sufficient relationship between the nutritional status of pregnant women and *stunting*.

DISCUSSION

A. Interpretation and Discussion of Results

1. Maternal nutritional status during pregnancy

The results showed that the percentage of pregnant women with SEZ was included in the high category. The cause of SEZ pregnant women in NTT is that the time of pregnancy is too close, so they do not have the opportunity to repair their bodies. Mothers need enough energy to recover after giving birth. Mothers are still

breastfeeding and must meet their nutritional needs while breastfeeding. Breastfeeding mothers need extra calories every day in order to meet their nutritional needs and breast milk, so that if the mother becomes pregnant again, there will be problems related to the nutrition of the mother and the fetus in the womb.[11]

Other factors that can lead to SEZ are nutritional intake, physical activity, and socio-economic conditions, namely low education, pregnancy spacing is too close so that the nutritional intake of pregnant women is disrupted, gravida and work. Poor family support also affects the occurrence of SEZ in pregnant women, in addition to PHBS factors and ecological factors.[12]

2. *Stunting* in toddlers

The results showed that the percentage of stunting under five was included in the high category because it exceeded the health problem threshold that had been set, which was 20%. Factors that influence stunting include maternal education, parental income, nutritional knowledge, number of family members, feeding methods, environmental hygiene and clean living habits, parenting patterns, levels of energy and protein fulfillment.[13] There are various factors that cause stunting, one of which is the nutritional status of the mother during pregnancy, therefore during pregnancy the mother must prepare nutrition according to her needs.[14]

3. Relationship between nutritional status of pregnant women and stunting

Under-five stunting in mothers who have normal nutritional status is caused by other factors such as the low level of mother's education, as well as the mother's inability to absorb and understand important nutrients, resulting in the mother being unresponsive to the nutritional problems faced by the family and unable to take appropriate action. For example, the low knowledge of mothers regarding the importance of breastfeeding for toddlers so that mothers do not give exclusive breastfeeding. Poor nutritional intake and can lead to malnutrition, namely stunting if the need for breast milk is not met. Breast milk contains a lot of calcium and can be absorbed by the body so that it can maximize height growth and avoid the risk of stunting.[15] Normal toddlers from pregnant women with SEZ are caused by exclusive breastfeeding, complementary feeding, vitamin A.[16]

Based on the statistical test results of the Coefficient Contingency correlation test, it was obtained p of 0.004, which means that there is a relationship between the nutritional status of pregnant women and stunting. The correlation coefficient value is 0.325, which means that there is a sufficient correlation between the nutritional status of pregnant women and stunting. The results of the study are in line with the findings of Sukmawati (2018), namely "The Relationship of Maternal Nutritional Status During Pregnancy, LBW and Stunting". The results of the analysis between the nutritional status of pregnant women and stunting obtained a p value of 0.01, which means that there is a relationship between the nutritional status of pregnant women and stunting. The results of the study are in line with the findings of Alfarisi R (2019) entitled "The nutritional status of pregnant women can cause stunting in children". The results of the statistical test p of 0.005 which means there is a relationship between maternal nutrition and stunting. The results of the study are in line with the findings of Ruaida N (2018), entitled "Relationship of SEZ Status of Pregnant Women and LBW with stunting in toddlers". The results of the statistical test p of 0.00 which means that there is a relationship between SEZ of pregnant women and stunting. This research is also in line with the findings of Nurbaiti (2019), namely "The relationship between nutritional status and age of pregnant women with stunting in children".

Maternal nutrition during pregnancy is very important for the growth and development of the fetus. The majority, pregnant women who have good health

conditions and do not have nutritional disorders during pregnancy or during pregnancy, will give birth to larger and healthier babies than pregnant women who have nutritional disorders. The nutritional status of pregnant women with long-term energy deficiency at the end of pregnancy results in pregnant women not having sufficient nutritional reserves to meet the physiological needs of pregnancy needed for fetal growth, resulting in delayed fetal growth and development so that toddlers experience low birth weight associated with stunting. [15]

The first 1000 days between pregnancy and the age of two are an opportunity to do the right thing so that the growth of the fetus is not disrupted and can prevent the next link in the life chain, namely stunting.[17] Therefore, pregnant women need to eat more nutritious foods, such as tempeh and tofu rich in protein, eggs, milk, fish, vegetables, nuts and fruit in order to improve the nutritional status of the mother during pregnancy so that nutrition for the fetus is adequate, so as to reduce the risk of stunting under five. [14]

B. Research Limitations

This research has been tried very maximally, but there are still limitations to this research, namely:

1. Researchers have difficulty obtaining research permits because this research was conducted during a pandemic.
2. The research time was limited because the researcher encountered obstacles when obtaining a research permit.

CONCLUSION

Based on the results of the analysis and discussion in the previous chapter, it can be concluded that:

1. Most pregnant women at Batuputih Health Center have normal nutritional status, namely 43 (59.7%) people.
2. Most of the toddlers at Batuputih Health Center had normal TB/U as many as 53 (73.6) people.
3. There is a relationship between the nutritional status of pregnant women and stunting in toddlers aged 6-36 months at Batuputih Health Center. From the statistical test, the result of p is 0.004. The r value of 0.325 means that there is a sufficient correlation, which means that the nutrition of pregnant women has a sufficient relationship with *stunting*.

ACKNOWLEDGEMENT

The researcher would like to thank the dean of FKUKWMS who has given permission, supervisors and examiners who helped provide direction, the Batuputih Health Center who has given permission for the research and all parties who have supported and encouraged in completing this research.

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