

The Relationship Between Pregnant Women's Knowledge About Anemia and Stunting

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ABSTRACT

This research aims to investigate the association between pregnant women's knowledge regarding anemia and the prevalence of stunting among toddlers in Mandailing Natal district, where stunting rates exceed the provincial average of 25.8% in North Sumatra Province. Utilizing an analytical survey method with a cross-sectional approach, the study population consisted of 40 pregnant women attending the Longat Community Health Center, with total sampling employed as the sampling technique. Data collection involved the use of questionnaires, and analysis was conducted using the chi-square test with a significance level set at $p < 0.05$. The analysis revealed that a majority of pregnant women possessed adequate knowledge regarding anemia and stunting, comprising 21 individuals (52.5%). Statistical tests further indicated a significant relationship between pregnant women's knowledge concerning anemia and the incidence of stunting, particularly based on factors such as age ($p = 0.046$), education ($p = 0.001$), economic status ($p = 0.013$), information sources ($p = 0.013$), and parity ($p = 0.030$). It is recommended that healthcare professionals engage in outreach and counseling initiatives to enhance pregnant women's awareness regarding the repercussions of anemia on both fetal and maternal health.

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INTRODUCTION

Anemia is a huge public health problem in the world, especially for women of childbearing age (WUS). Pregnancy anemia is very risky for the baby to be born and will cause stunting in toddlers. This is because the nutritional intake obtained is insufficient (Anisia & Ayu, 2018). Anemia in pregnant women can occur due to insufficient nutritional intake. Pregnant women with poor nutritional status will more easily feel weak, tired, lethargic, and have reduced appetite so that the required nutritional intake is not met. The high rate of malnutrition in pregnant women has contributed to the high rate of stunting in Indonesia (Wahyuningsih, 2016).

Stunting in children under five is an indicator of nutritional status that can provide an overview of the overall disturbance of socio-economic conditions in the past. Stunting that occurs during childhood is a risk factor for increased mortality, low cognitive abilities and motor development, and unbalanced body functions. The incidence of stunting is related to various factors, including family environment (education, employment, data collection, parenting patterns, eating patterns and number of household members), nutritional factors (exclusive breastfeeding and duration of breastfeeding), genetic factors, infectious diseases, and the incidence of LBW (Low Birth Weight) (Wahdah & Juffrie, 2016). There are 5 development targets in the health sector in the 2020-2024 National Medium Term Development Plan (RPJMN), one of the main targets is to reduce the incidence of children under five years (toddlers) Stunting (low/short

height) of 30.8% (2018) to 19% in 2024 (Ministry of National Development Planning, 2019). The risk of stunting is 7x that can occur in pregnant women who experience malnutrition or malnutrition (Widyaningrum & Romadhona, 2018). Pregnant women experiencing anemia will be at risk of experiencing intrauterine growth retardation (IUGR) or stunted fetal growth, and babies born will be at risk of experiencing Low Birth Weight (LBW) (Irayani, 2016).

According to the results of the Indonesian Nutrition Status Study (SSGI) of the Ministry of Health (Kemenkes), the prevalence of toddlers experiencing stunting in Indonesia was 24.4% in 2021. Thus, almost 1/4 of toddlers in the country experienced stunting last year. However, this percentage has decreased compared to previous years. In 2020, the prevalence of stunting in Indonesia is predicted to still be 26.92% (MINISTRY OF HEALTH, 2022). Optimal health status must be prepared for a woman before marriage. Then continue when the woman is pregnant, and while breastfeeding. This long period is a very critical period for the growth and development process of toddlers. This period is the first 1000 days of life which is called the "window of opportunity" and the most sensitive period for toddlers. Childhood is the foundation for growth and development in the next stage, if during this period there are nutritional problems then the consequences that arise can be permanent or irreversible (Saputra & Nurriszka, 2016).

METHODS

Research Techniques

This study used an analytical survey method with a cross-sectional approach to explore the relationship between pregnant women's knowledge of anemia and the incidence of stunting. The sampling technique used was Random Sampling so that a sample of 40 people was obtained. The research location was at the Longat Health Center, West Panyabungan District, Mandailing Natal Regency. The research was conducted from September to December 2022.

The instrument used for data collection was a questionnaire specifically designed to assess the knowledge of pregnant women about anemia and the incidence of stunting. The data collected were then analyzed using the chi-square test with a significance level of $p < 0.05$ to determine whether there was a significant relationship between pregnant women's knowledge of anemia and the incidence of stunting.

RESULTS AND DISCUSSION

Discussion of results

Univariate Analysis Results

There were 40 pregnant women in this study. Characteristics in the study include age, occupation, education, parity, source of information, anxiety level which can be explained in the following table:

Table 1. Frequency Distribution of Respondents by Age at Longat Community Health Center in 2023

No	Age	n	%
1	≤ 20 Years	6	15.0
2	21 – 35 Years	27	67.5
3	>35 Years	7	17.5
	Amount	40	100

Based on table 1. above, it can be seen that the majority of respondents were aged 21-35 years, namely 27 people (67.5%) and the minority of respondents were > 35 years old, 7 people (17.5%).

Table 2. Frequency Distribution of Respondents by Education at Longat Community Health Center in 2023

No	Education	n	%
1	elementary school	3	7.5
2	JUNIOR HIGH SCHOOL	12	30.0
3	SENIOR HIGH SCHOOL	18	45.0
4	College	7	17.5
	Amount	40	100

Based on table 2. above, it can be seen that the majority of respondents had high school education, namely 18 people (45.0%) and the minority of respondents had elementary school education, namely 3 people (7.5%).

Table 3. Frequency Distribution of Respondents based on Information Sources at Longat Community Health Center in 2023

No.	Resources	n	%
1	Print media	8	20.0
2	Social media	20	50.0
3	Medical personnel	12	30.0
	Amount	40	100

Based on table 3. above, it can be seen that the majority of respondents source information mostly from social media, namely 20 people (50.0%) and the minority of respondents source information from print media, namely 8 people (20.0%).

Table 4. Distribution Frequency Respondent based on Parity at Longat Community Health Center in 2023

No.	Parity	n	%
1	Primipara	15	37.5
2	Scundipara	16	40.0
3	Multiparous	9	22.5
	Amount	40	100

Based on table 4. above, it can be seen that the majority of respondents have scundiparous parity, namely 16 people (40.0%) and the minority of respondents have multiparous parity, namely 9 people (22.5%).

Table 5. Frequency Distribution of Respondents by Income at Longat Community Health Center in 2023

No.	Income	n	%
1	On	9	22.5
2	Intermediate	16	40.0
3	Lower	15	37.5
	Amount	40	100

Based on table 5. above, it can be seen that the majority of respondents are in the middle economy, namely 16 people (40.0%) and the minority of respondents are in the upper economy, namely 9 people (22.5%).

Table 6. Frequency Distribution of Respondents based on Knowledge at Longat Community Health Center in 2023

No.	Knowledge	n	%
1	Good	7	17.5
2	Enough	21	52.5
3	Not enough	12	30.0
	Amount	40	100

Based on table 6. above, it can be seen that the majority of respondents have at most sufficient knowledge, namely 21 people (52.5%) and the minority of respondents have good knowledge, namely 7 people (17.5%).

Bivariate Analysis

To test the relationship between independent variables which include age, education, employment, economy, information sources, parity with the dependent variable, namely pregnant women's knowledge about anemia and the incidence of stunting, using bivariate analysis using the chi-square test with $\alpha=0.05$ which is described as follows:

Table 7. Results of Analysis of the Relationship between Pregnant Women's Knowledge about Anemia and the incidence of Stunting Based on Age

Mother's Age	Mother's Knowledge						Total		<i>p-value</i>
	Good		Enough		Not enough				
	f	%	f	%	f	%	f	%	
<20 years	0	0.0	2	5.0	4	10.0	6	15.0	0.046
20-35 years	6	15.0	17	42.5	4	10.0	27	67.5	
>35 years	1	2.5	2	5.0	4	10.0	7	17.5	
Total	7	17.5	21	52.5	12	30.0	40	100	

The results of the analysis of the relationship between pregnant women's knowledge about anemia and the incidence of stunting based on age showed that of the 27 pregnant women aged 21–35 years, the majority had sufficient knowledge about anemia and stunting, 17 people (42.5%). Furthermore, respondents aged < 20 years and > 35 years of minority had less knowledge as many as 4 people (10.0%). The results of the chi-square statistical test prove that there is a significant relationship between knowledge pregnant women regarding anemia with the incidence of stunting based on age p value = 0.046 ($p < 0.05$)

Table 8. Results of Analysis of the Relationship between Pregnant Women's Knowledge about Anemia and the incidence of Stunting based on education

Education	Mother's Knowledge						Total		<i>p-value</i>
	Good		Enough		Not enough				
	f	%	f	%	f	%	f	%	
elementary school	0	0.0	1	2.5	2	5.0	3	7.5	0.001
JUNIOR HIGH SCHOOL	0	0.0	4	10.0	8	20.0	12	30.0	
SENIOR HIGH	3	7.5	13	32.5	2	5.0	18	45.0	

SCHOOL								
Go.High	4	10.0	3	7.5	0	0.0	7	17.5
Total	7	17.5	21	52.5	12	30.0	40	100

The results of the analysis of the relationship between pregnant women's knowledge about anemia and the incidence of stunting based on education showed that the majority of 18 pregnant women with high school education had sufficient knowledge, 13 (32.5%). Furthermore, the minority of respondents with tertiary education mostly had good knowledge, amounting to 4 people (10.0%). The results of the chi-square statistical test prove that there is a significant relationship between pregnant women's knowledge about anemia and the incidence of stunting based on education with the p value =0.001 ($p<0.05$).

Table 9. Results of Analysis of the Relationship between Pregnant Women's Knowledge about Anemia and the incidence of Stunting based on education

Education	Mother's Knowledge						Total		<i>p-value</i>
	Good		Enough		Not enough				
	f	%	f	%	f	%	f	%	
elementary school	0	0.0	1	2.5	2	5.0	3	7.5	0.001
JUNIOR HIGH SCHOOL	0	0.0	4	10.0	8	20.0	12	30.0	
SENIOR HIGH SCHOOL	3	7.5	13	32.5	2	5.0	18	45.0	
Go.High	4	10.0	3	7.5	0	0.0	7	17.5	
Total	7	17.5	21	52.5	12	30.0	40	100	

The results of the analysis of the relationship between pregnant women's knowledge about anemia and the incidence of stunting based on education showed that the majority of 18 pregnant women with high school education had sufficient knowledge, 13 (32.5%). Furthermore, the minority of respondents with tertiary education mostly had good knowledge, amounting to 4 people (10.0%). The results of the chi-square statistical test prove that there is a significant relationship between pregnant women's knowledge about anemia and the incidence of stunting based on education with p value=0.001 ($p<0.05$).

Table 10. Results of Analysis of the Relationship between Pregnant Women's Knowledge about Anemia and the incidence of Stunting Based on Economics

Income	Mother's Knowledge						Total		<i>p-value</i>
	Good		Enough		Not enough				
	f	%	f	%	f	%	F	%	
On	3	7.5	4	10.0	2	5.0	9	22.5	0.013
Intermediate	3	7.5	12	30.0	1	2.5	16	40.0	
Lower	1	2.5	5	12.5	9	22.5	15	37.5	
Total	7	17.5	21	52.5	12	30.0	40	100	

The results of the analysis of the relationship between pregnant women's knowledge about anemia and the incidence of stunting based on economics showed that the majority of 16 pregnant women who were in the middle economy had sufficient knowledge (30.0%). Meanwhile, the majority of the minority of respondents who have an economic background and above have sufficient knowledge, namely 4 people (10.0%). The results of the chi-square statistical test prove that there is a significant relationship between pregnant

women's knowledge about anemia and the incidence of stunting based on economics with p value = 0.013 (p <0.05).

Table 11. Results of Analysis of the Relationship between Pregnant Women's Knowledge about Anemia and the incidence of Stunting Based on Information Source

Resources	Mother's Knowledge						Total		<i>p-value</i>
	Good		Enough		Not enough				
	f	%	f	%	f	%	f	%	
Print media	0	0.0	5	12.5	3	7.5	8	20.0	0.013
Social media	1	2.5	12	30.0	7	17.5	20	50.0	
Medical personnel	6	15.0	4	10.0	2	5.0	12	30.0	
Total	7	17.5	21	52.5	12	30.0	40	100	

The results of the analysis of the relationship between pregnant women's knowledge about anemia and the incidence of stunting based on information sources showed that the majority of 20 pregnant women obtained information from social media, most of whom had sufficient knowledge, 12 people (30.0%). Furthermore, the majority of the minority of respondents who obtained information from medical personnel still had good knowledge, namely 4 people (10.0%). The results of the chi-square statistical test prove that there is a significant relationship between pregnant women's knowledge about anemia and the incidence of stunting based on the source of information with a p value = 0.013 (p<0.05).

Table 12. Results of Analysis of the Relationship between Pregnant Women's Knowledge about Anemia and the incidence of Stunting Based on Parity

Parity	Mother's Knowledge						Total		<i>p-value</i>
	Good		Enough		Not enough				
	f	%	f	%	f	%	f	%	
Primipara	1	2.5	6	15.0	8	20.0	15	37.5	0.030
Scundipara	3	7.5	12	30.0	1	2.5	16	40.0	
Multiparous	3	7.5	3	7.5	3	7.5	9	22.5	
Total	7	17.5	21	52.5	12	30.0	40	100	

The results of the analysis of the relationship between pregnant women's knowledge about anemia and the incidence of stunting based on parity showed that of the 16 pregnant women with scundiparous parity, the majority had sufficient knowledge, 12 (30.0%). Furthermore, the minority of multiparous parity respondents had less knowledge, as many as 3 people (7.5%). The results of the chi-square statistical test prove that there is a significant relationship between pregnant women's knowledge about anemia and the incidence of stunting based on parity with p value = 0.030 (p <0.05).

The results of the univariate analysis on the maternal age variable showed that the most respondents were 21-35 years old, namely 27 people (67.5%) and the least respondents were <20 years old, 6 people (15.0%). Women at this age are considered ideal for pregnancy and childbirth because at this age women's physical condition is in prime condition. If age is related to pregnant women's knowledge about anemia, the older they get, the more experience they have, the more information they obtain, and the more they know the importance of maintaining health during pregnancy by carrying out routine antenatal care checks. The results of the univariate analysis on the Education variable showed that the majority of respondents had a high school education, namely 18 people (45.0%) and the least number of respondents had an elementary school education, namely 3 people (7.5%). Based on the results of univariate analysis, it was found that the most respondents were in the middle economy, namely 16 people (40.0%) and the fewest respondents were in the upper economy, namely 9 people (22.5%). The results of the analysis of the

relationship between pregnant women's knowledge about anemia and the incidence of stunting based on economics showed that the majority of 16 pregnant women who were in the middle economy had sufficient knowledge (30.0%). Furthermore, the majority of respondents who have a lower economic background have less knowledge, 9 people (22.5%) while the majority of respondents who have an economic background and above have sufficient knowledge, 4 people (10.0%). The results of the chi-square statistical test prove that there is a significant relationship between pregnant women's knowledge about anemia and the incidence of stunting based on economics with $p\text{ value}=0.013$ ($p<0.05$). The results of the univariate analysis on the source of information variable revealed that the most respondents sourced information from social media, namely 20 people (50.0%) and the least number of respondents sourced information from print media, namely 8 people (20.0%).

The results of the analysis of the relationship between pregnant women's knowledge about anemia and the incidence of stunting based on information sources showed that of the 20 pregnant women who obtained information from social media, most of them had sufficient knowledge, 12 people (30.0%). Furthermore, the majority of respondents who obtained information from medical personnel still have it 6 people (15.0%) had good knowledge and the majority of respondents who obtained information from print media had sufficient knowledge, 5 people (12.5%).

The results of the chi-square statistical test prove that there is a significant relationship between pregnant women's knowledge about anemia and the incidence of stunting based on the source of information with a $p\text{ value} = 0.013$ ($p<0.05$). The results of the univariate analysis on the parity variable showed that the most respondents were scundiparous, namely 16 people (40.0%) and the fewest respondents had multiparous parity, namely 9 people (22.5%). The results of the analysis of the relationship between pregnant women's knowledge about anemia and the incidence of stunting based on parity showed that most of the 16 pregnant women with scundiparous parity had sufficient knowledge, 12 (30.0%). Furthermore, most of the primiparous parity respondents had less knowledge, 8 people (20.0%)

CONCLUSION

The majority of pregnant women's knowledge about anemia and stunting at the Longat Community Health Center, West Panyabungan District, Mandailing Natal Regency in 2023 had sufficient knowledge, namely 21 people (52.5%) The results of the analysis of the relationship between pregnant women's knowledge about anemia and the incidence of stunting based on age showed that from 27 The majority of pregnant women aged 21–35 years have sufficient knowledge about anemia and stunting as many as 17 people (42.5%). The results of the chi-square statistical test prove that there is a significant relationship between pregnant women's knowledge about anemia and the incidence of stunting based on age ($p=0.046$). The results of the analysis of the relationship between pregnant women's knowledge about anemia and the incidence of stunting based on education showed that of the 18 pregnant women with high school education, the majority had sufficient knowledge, 13 (32.5%). The results of the chi-square statistical test prove that there is a significant relationship between pregnant women's knowledge about anemia and the incidence of stunting based on education ($p=0.001$)

The results of the analysis of the relationship between pregnant women's knowledge about anemia and the incidence of stunting based on economics showed that the majority of 16 pregnant women who were in the middle economy had sufficient knowledge (30.0%). The results of the chi-square statistical test prove that there is a significant relationship between pregnant women's knowledge about anemia and the incidence of stunting based on economics ($p=0.013$). The results of the analysis of the relationship between pregnant women's knowledge about anemia and the incidence of stunting based on information sources showed that of the 20 pregnant women who obtained information from social media, most of them had sufficient knowledge, 12 people (30.0%). The results of the chi-square statistical test prove that there is a significant relationship between pregnant women's knowledge about anemia and the incidence of stunting based on the source of information ($p=0.013$).

The results of the analysis of the relationship between pregnant women's knowledge about anemia and the incidence of stunting based on parity showed that of the 16 pregnant women with scundiparous

parity, the majority had sufficient knowledge, 12 (30.0%). The results of the chi-square statistical test prove that there is a significant relationship between pregnant women's knowledge about anemia and the incidence of stunting based on parity ($p=0.030$).

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