RESEARCH ARTICLE OPEN ACCESS

Available at http://jurnal.utu.ac.id/jns/article/view/6960

Level of Education and Parity of Pregnant Women with Anemia Incidence in Coastal Health Center Tarakan City, North Kalimantan

[1]Andi Yuniarsy Hartika, [2]Gusni Fitri, [3]Armina
[1]Universitas Borneo Tarakan, Indonesia, yuniarsyhartika@borneo.ac.id
[2]Universitas Borneo Tarakan, Indonesia, gusnifitri@borneo.ac.id
[3]Universitas Borneo Tarakan, Indonesia, yuniarsyhartika@borneo.ac.id
Coresponding author : Andi Yuniarsy Hartika, email : yuniarsyhartika@borneo.ac.id

ABSTRACT

The prevalence of anemia for pregnant women in the coastal area of Tarakan City is the highest in 2021, namely 53.5%, which is far above the national target of 45%. This study aimed to determine the relationship between education level and parity of pregnant women with the incidence of anemia in the coastal area of Tarakan City in 2021. The type of research used was analytic observational with a cross-sectional research design. The population is all pregnant women in the third trimester at the Pantai Amal Community Health Center in 2021. The sample size for this study was 97 pregnant women with a random sampling technique. Data was collected using medical record data at the Amal Beach Health Center in 2021 and then analyzed using Chi-Square with p = 0.05. The analysis of the relationship between education level and the incidence of anemia in pregnant women at the community health center in the coastal area of Tarakan City showed a significant relationship (p=0.005). The relationship between parity and the incidence of anemia in pregnant women also showed a significant relationship where as many as 39 mothers (40.2%) with parity were at risk of developing anemia. There is a significant relationship between education level and parity with the incidence of anemia in pregnant women at Amal Beach Health Center. Therefore, developing a program to prevent anemia in pregnant women at the Amal Beach Health Center is essential by considering the significant risk factors associated with anemia.

ARTICLE INFORMATION

Submitted: 16/01/2023
Revised: 03/04/2023
Accepted: 04/04/2023
Published Online: 01/05/2023

Keywords:
Anemia
Coastal
Level of Education
Parity
Pregnant Woman

How to cite this article: Hartika, A. Y., Fitri, G., & Armina. (2023). Level of Education and Parity of Pregnant Women with Anemia Incidence in Coastal Health Center Tarakan City, North Kalimantan. *Journal of Nutrition Science, 4*(1), 1-5. doi:10.35308/jns.v3i2.7495

Introduction

Iron deficiency is one issue requiring nutrition that has received attention and is a concern for Indonesians of all ages. Anemia in the pregnant woman will have an influence on the fetus's growth and development, as well as potentially raising pregnancy and birthing problems, potentially resulting in the death of both mother and son (Haider et al., 2013).

According to Riskesdas 2018, 48.9% of pregnant mothers developed anemia (Kementerian Kesehatan RI, 2018). This means that around 5 out of 10 pregnant women in Indonesia suffer from anemia. Coverage of anemia in pregnant women in Indonesia was 48.9% in 2019 (Kementerian Kesehatan Republik Indonesia, 2020), with North Kalimantan Province accounting for 20.39%, Tarakan City accounting for 18.23%, and Pantai Amal Health Center accounting for 7.48%. (Dinkes Provinsi Kalimantan Utara, 2019). Tarakan's anemia rate will drop by 16.08%. However, in Tarakan City's coastline area, the Amal Beach Community Health Center climbed to 41.74% in 2020 and will grow to 53.5% in 2021.

Anemia in the pregnant mother is caused by the fact that the pregnancy is repeated in such a short period that the backup material iron actual mother has not yet recovered and has ultimately been drained for the requirement created fetus next. The more frequently a woman experiences pregnancy and delivery, the more iron she will lose and become anemia (Irianto, 2014). According to the findings of a study done by May Munah end (Munah, 2021), the frequency of anemia in expectant mothers in the Work Area Public health center Biha Regency coast shows a link with parity mothers. Furthermore, Ermawati (2019) found that maternal education has a strong link with anemia.

Furthermore, parity attracts special attention since it is one of the leading factors occurrences of anemia in pregnancy due to the mother giving birth more than twice or too often, a highly influential condition body mother in physical or inner (Nair & MK, 2017). Adawiyah (2020) discovered a significant association between parity and the prevalence of anemia in the mother's pregnancy at The Samarinda Trauma Center Health Center.

Based on a description of the features of the same region, that is, in the area coast, research is

needed to determine the level of education and parity among mothers pregnant with anemia at the Coastal Community Health Center in Tarakan City, North Kalimantan.

Method

This research uses the type of analytic observational research. This study observed the level of education, parity and anemia in pregnant women in the coastal health centre area of Tarakan city, namely Amal Beach Health Center. The design of this research is cross-sectional.

The population in the research includes all expectant mothers in their third trimester at the Pantai Amal Health Center from January to December 2021. Based on the formula, a total of 97 pregnant moms were selected. The retrieval technique uses random method sampling, which is the methodology for determining sample research drawn in a manner random use table number or number random (random number).

The inclusion criteria are mother pregnant women with complete data on the record medical Amal Coast Health Center mothers data pregnant regarding their level of education and parity from January to December 2021.

The exclusion criteria are:

1. They are suffering with HIV/AIDS, malaria, Tubercolosis, chronic kidney disease, digestive infections, tachaemia, sickle cell anemia, and helminthiasis whose data is available in the medical record.
2. Pregnant women who have experienced late pregnancy bleeding (bleeding starting from the 20th week until delivery)
3. Distance of pregnancy is less than 2 years.

An instrument will be used to examine this in the form of medical record data at Pantai Amal Health Center in 2021. To analyze the association between the level of education and parity with the incidence of anemia among pregnant women using the *Chi-Square* test.

Results

Table 1. Characteristics of Pregnant Woman at The Pantai Amal Health Centre in Tarakan City

Characteristics	n	%
Age (years)		
<20	9	5.2
20-35	77	69
>35	11	25.8
Mother's Occupation		
Housewife	52	53.6
Labor	45	46.4
Total	97	100

Table 1 shows the distribution age of mothers pregnant at work at Pantai Amal Health Center, with the total most significant in the group aged 20-35 years which is 69% and the least in the group aged <20 years which is as much as 5.2% (5 people).

Characteristics respondents based on mother's occupation could see that most of the pregnant women work as housewife are about 53.6% (52 people), and the rest is work as labor about 46.4% (45 people).

Table 2. Distribution Respondents Based on Level of Education, Parity, and Incidence of Anemia in Pregnant Women at the Pantai Amal Health Centre in Tarakan City

Variable	n	%
Level of Education		
Low	68	70.1
High	29	29.9
Parity		
Risky	51	52.6
No Risky	46	47.4
Anemia Incidence		
Anemia	63	64.9
No Anemia	34	35.1
Total	97	100

Table 2 can be seen that the level of education of most pregnant women is low namely 70.1% (68 people), and those with high education are 29.9% (29 people). The Parity of pregnant women is mostly at risk, namely 52.6% (51 people) and those who are not at risk are 47.4% (46 people). The incidence of anemia in pregnant woman mostly experienced anemia, namely as many as 64.9% of (63 people) while 35.1% did not experence anemia.

Table 3. Level of Education Association with Incidence of Anemia the Pantai Amal Health Centre in Tarakan City

Level of education	Anemia Incidence				Total	
	Yes		No			
	n	%	n	%	n	%
Low	57	58,8	11	11,3	68	70,1
High	6	6,1	13	23,8	29	29,9
Total	63	64,9	34	35,1	97	100

Table 3 above show that mothers of partially anemia pregnant women have an own significant level of low education, that is, 58.8% or as many as 57 people. Meanwhile, pregnant women who do not have anemia of proportion most significant, namely the mother pregnant with a higher education level, is as much as 23.8% (13 people). Statistical test results among level of education with the incidence of maternal anemia pregnant at the Pantai Amal Community Health Center show a significant relationship ($p < 0.05$).

Table 4. Parity Association with Incidence of Anemia the Pantai Amal Health Centre in Tarakan City

Parity	Anemia Incidence				Total	
	Yes		No			
	n	%	n	%	n	%
Risk	39	40.2	12	12.4	51	52.6
No Risk	24	24.7	22	22.7	46	47.4
Total	63	64.9	34	35,1	97	100

Table 4 above shows that mother partially anemia pregnant women have a significant risk parity of 40.2% or as many as 39 people. Meanwhile, mothers who do not have anemia of proportion most significant, namely the mother parity pregnant no risk is as much as 22.7% (22 people). Statistical test results among parity with the incidence of maternal anemia pregnant at the Pantai Amal Community Health Center show a significant relationship ($p < 0.05$).

Discussion

The results of the analysis of the educational level of pregnant women at the Pantai Amal Health Center in 2021 are primarily low; namely, 78.4% (76 people) and those with higher education 21.6% (21 people). The distribution of pregnant women based on their level of education in the Pantai Amal Community Health Centers shows that most have shared knowledge about nutrition and health. Knowledge is a crucial domain of how a person's actions are formed. Knowledge is formed from a person's educational level. Education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have spiritual strength, self-control, and intelligence (Notoatmodjo, 2008). A mother's education level dramatically influences how a person acts and looks for causes and solutions in his life. Highly educated people will usually act more rationally. Therefore, educated people will more readily accept new ideas. Likewise, highly educated mothers will have their pregnancies checked regularly to maintain the health condition of themselves and the child in their womb.

Table distribution of parity mothers were partly pregnant at the Pantai Amal Health Center in 2021 mostly risky, namely 52.6% (51 people) and those who did not look at risky 47.4% (46 people). Some results studies show parity factors are urgent in determining the fate of the mother and fetus during pregnancy or give birth. The body's own risk of becoming anemia during pregnancy if pregnant with more than one child.

The incidence of anemia in pregnant women in the Pantai Amal Health Center work area was mostly anemia, namely 64.9% (63 people), while 35.1% did not experience anemia. The incidence of anemia is relatively high in the Pantai Amal Health Center area, possibly caused by the low knowledge of pregnant women regarding the importance of nutrition and health. A person's educational level determines their ability to make rational decisions. In addition, receiving new information or knowledge is easier for someone with a high education level. Thus, highly educated pregnant women will gain good knowledge about anemia and how to prevent anemia.

The analysis using the Chi-Square test shows a significant relationship between education level and the incidence of anemia in pregnant women at the Pantai Amal Health Center in 2021 with a p-value <0.05. The education of pregnant women is majority of the education that pregnant women take is from elementary to junior high school. This results in the lack of knowledge of pregnant women, they only know a small part about nutrition, so it is not optimally applied to their daily lives. This is in line with the research of Astutui & Ertiana (2018) that the factor that influences anemia status is a low level of education. Pregnant women who know and understand the consequences of anemia and how to prevent it will have positive behavoiurs and actions to avoid the impacts and risks of anemia during pregnancy.

Likewise, in Astriana's study (2017), it was shown that 39 pregnant women at the Watampone Blue Health Center showed that the prevalence of mild anemia was lower in mothers who had a low education level of only 25% compared to mothers who had a higher educational level reaching 75%, while the prevalence The incidence of anemia is moderately higher in mothers who have a low education level reaching 90.3% compared to mothers who have a high education level of only 9.7%.

Research conducted by Apriyani (2016) showed results that were in line with Edison's, where there was a relationship between the educational level of pregnant women and the incidence of anemia. Likewise, the study (Putri Wulandini.S, 2018), conducted on pregnant women at the RI Karya Wanita Pekanbaru Health Center, obtained from 14 respondents with low education who had anemia as much as 78.6% while those who were not anemia were 21.4%. Of the 16 respondents with higher education, 31.2% experienced anemia, while 68.8% did not have anemia. After analyzing the relationship between the two variables, it was concluded that there was a significant relationship.

Bencaiova et al. (2012) explained that a mother's education is one of the determining factors of nutritional status and maternal, infant and child mortality. In rural and urban areas, there is a tendency for anemia among mothers with <junior high school education (high) to be higher than the proportion of anemia in mothers with >high school education (low).

According to David Card (2015), education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have self-control, personality, intelligence, and skills needed by themselves, society, nation, and state. The higher the level of education, the easier it is to accept the concept of healthy living independently, creatively, and sustainably. A person's level of education influences the ability to receive nutritional information. The higher the level of education, the easier it is for someone to receive nutritional information. The level of education also influences how a person acts and looks for causes and solutions in his life.

The statistical test results show that parity is related to the incidence of anemia in pregnant women in the Pantai Amal Health Center working area in 2021. As many as 40.2% of the parity category is at risk, namely the frequency of births > 2 experiencing anemia where this proportion is the most significant compared to the parity category with no risk. Parity is of particular concern because it is one of the factors that dominate the occurrence of anemia in pregnancy. After all, the condition of the mother who gives birth more than two times or too often dramatically affects the condition of the mother's body (Al-Farsy, 2011). The mother's physical condition still requires more iron, both for the growth of the condition of the mother herself and the fetus she contains (shah, 2020). If experience pregnancy and childbirth too often cause iron that has not been formed optimally in the body.

Several studies have shown a significant relationship between parity and anemia in pregnant women. Research by Mardha et al. (2019) on pregnant women at the Hj. Dermawati Nasution Tembung, with a sample of 35 people, showed a significant relationship between parity and the incidence of anemia. Willy Astriana (2017) also stated that his research hypothesis was proven, namely parity with the incidence of anemia in pregnant women at the Tanjung Agung Health Centre has a significant relationship. Respondents with parity are at greater risk of experiencing anemia in pregnant women than respondents with parity who are not at risk. According to Willy, parity is one of the essential factors that influence the incidence of anemia. However, Anggreni's research (2020) states that by primigravida pregnant women, namely women who are pregnant for the first time, 44.6% experience anemia compared to multigravida mothers who are pregnant more than once 12.8%.

Parity is the status of women in childbirth, seen from the aspect of numbers (Novianti, 2019). This definition can explain that parity is related to the incidence of anemia. The greater the parity value, the greater the risk of infant death. When giving birth to their first and second children, the condition mothers still get good obstetric care, while mothers at high parity will receive less good obstetric care due to unplanned pregnancies.

In addition, parity is of particular concern because it is one factor that dominates the occurrence of anemia in pregnancy. After all, the condition of mothers who give birth more than two times or too often dramatically affects the condition of the mother's body both physically and mentally (Nair & MK, 2017). A statistically significant relationship was found between parity and the incidence of anemia in pregnant women at the Samarinda Trauma Center Health Center (Adawiyah & Wijayanti, 2020).

Iron reserves will decrease during pregnancy, the higher the frequency of pregnancies, the more a mother experiences iron loss, so it is necessary to pay attention to the frequency of pregnancies and the spacing of pregnancies (Bai et al., 2002). This is intended to restore iron reserves to normal levels on the condition that during this grace period, the mother is in good health and food quality (Bai et al., 2002).

This study has limitations that can be taken into consideration for further research. These limitations are the instrument used is secondary data, namely the medical record data of the Pantai Amal Health Center, so the anemia measuring instrument used by the Pantai Amal Health Center is assumed to have been calibrate and the possibility of the staff of the Pantai Amal Health Center made a writing error.

Conclusion

There is a significant relationship between education level and the incidence of anemia for pregnant women at the Amal Beach Health Center in 2021 and a significant relationship between parity and the incidence of anemia for pregnant women at the Coastal Health Center, Tarakan City, North Kalimantan.

Acknowledgement

Thanks are to the University of Borneo Tarakan and also to the Research and Community Service Institute to the Community (LP2M) of the University of Borneo Tarakan, who helped with the research.

Author Contribution and Competing Interest

AYH and Armina initate the ideas, collecting and analysis the data and GF write the script.

References

Adawiyah, R., & Wijayanti, T. (2020). Hubungan Paritas Dengan Kejadian Anemia Pada Ibu Hamil Di Puskesmas Trauma Center Samarinda Tahun 2020.

Al-Farsi, Y. M., Brooks, D. R., Werler, M. M., Cabral, H. J., Al-Shafei, M. A., & Wallenburg, H. C. (2011). Effect of high parity on occurrence of anemia in pregnancy: a cohort study. BMC pregnancy and childbirth, 11(1), 1-7.

Anggreni, D. (2020). Hubungan Paritas Dengan Kejadan Anemia Pada Ibu Hamil Trimester 1 Dan 3 Di Puskesmas Gayaman Kabupaten Mojokerto Tahun 2018. Hospital Majapahit (Jurnal Ilmiah Kesehatan Politeknik Kesehatan Majapahit Mojokerto), 12(1), 1–8.

Apriyani, R. N. (2016). Pengetahuan Ibu Hamil Tentang Anemia Dalam Kehamilan Di Puskesmas Lepo-Lepo Kota Kendari Tahun 2016. Poltekkes Kemenkes Kendari.

Astriana, W. (2017). Kejadian Anemia Pada Ibu Hamil Ditinjau Dari Paritas Dan Usia. Jurnal Ilmu Kesehatan, Aisyah, 2, 124.

Astutui, R. Y., & Ertiana, D. (2018). Anemia Dalam Kehamilan. Pustaka Abadi.

Bai, J., Wong, F. W. S., Bauman, A., & Mohsin, M. (2002). Parity And Pregnancy Outcomes. American Journal Of Obstetrics And Gynecology, 186(2), 274–278.

Bencaiova, G., Burkhardt, T., & Breymann, C. (2012). Anemia--Prevalence And Risk Factors In Pregnancy. European Journal Of Internal Medicine, 23(6), 529–533.

Dinkes Provinsi Kalimantan Utara. (2019). Profil Dinas Kesehatan Provinsi Kalimantan Utara Tahun 2019.

Ermawati. (2019). Hubungan Tingkat Pendidikan Dengan Kejadian Anemia Pada Ibu Hamil. Journal Jkft, 4(2).

Haider, B. A., Olofin, I., Wang, M., Spiegelman, D., Ezzati, M., & Fawzi, W. W. (2013). Anaemia, Prenatal Iron Use, And Risk Of Adverse Pregnancy Outcomes: Systematic Review And Meta-Analysis. Bmj, 346(7916).

Irianto. (2014). Gizi Seimbang Dalam Kesehatan Reproduksi. Alfabeta.

Kementerian Kesehatan Republik Indonesia. (2020). Profil Kesehatan.

Kementerian Kesehatan Ri. (2019). Laporan Nasional Riskesdas 2018. Https://Labmandat.Litbang.Kemkes.Go.Id/Images/Download/Laporan/Rkd/2018/Laporan_Nasional_Rkd2018_Final.Pdf

Mardha, M. S., Syafitri, E., & Panjaitan, I. S. (2019). Hubungan Umur Dan Paritas Ibu Hamil Dengan Anemia Di Rumah Bersalin Hj. Dermawati Nasution Tembung. Window Of Health : Jurnal Kesehatan, 307–314.

Munah, A. (2021). Faktor-Faktor Yang Berhubungan Dengan Kejadian Anemia Pada Ibu Hamil. Welness And Healthy Magazine, 3(1), 109–115.

Nair, & Mk, C. (2017). Association Between Maternal Anemia And Pregnancy Outcomes: A Cohort Study In Assam, India. Bmc Public Health, 226(1).

Novianti, E. (2019). Hubungan Paritas Terhadap Status Gizi Pada Ibu Hamil Di Puskesmas Kecamatan Cakung Jakarta Timur.

Putri Wulandini .S, T. T. (2018). Hubungan Pengetahuan Ibu Hamil Tentang Anemia Dengan Kepatuhan Mengkonsumsi Tablet Fe Di Wilayah Puskesmas Ri Karya Wanita Pekanbaru Tahun 2017. Jurnal Martenity And Neonatal, 6(2), 300–300.

Shah, T., Warsi, J., & Laghari, Z. (2020). Anemia and its association with parity. The Professional Medical Journal, 27(05), 968-972.

*****