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Relationship of Parity, Nutritional Status, Gestational Age with Hemoglobin Levels of Pregnant Women at Sukajadi Health Center in 2020

[1]Fariza Ayang Viamita,[2]Sendy Pratiwi Ramadhani,[3]Helni Anggraini

[1]Mahasiswi Program Studi Sarjana Kebidanan Fakultas Kebidanan dan Keperawatan, Universitas Kader Bangsa Palembang, Indonesia

[2,3]Fakultas Kebidanan dan Keperawatan,Universitas Kader Bangsa Palembang, Indonesia

A R T I C L E I N F O

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ABSTRACT

The World Health Organization (WHO), in 2016 reported that the prevalence of anemia in pregnant women in the world was around 40.1 percent. Based on the 2018 Riskesdas, the incidence of anemia in pregnant women in Indonesia is still high, at 48.9 percent of pregnant women who experience anemia. In 2013 the number of pregnant women who experienced anemia was 37.1 percent and increased in 2018 to 48.9 percent. This study was conducted to determine the relationship between parity, nutritional status, and gestational age with hemoglobin levels of pregnant women simultaneously at the Sukajadi Public Health Center in 2020. The results obtained were that there was a significant relationship between parityaand hemoglobin levels of pregnant women at the Sukajadi Public Health Center in 2020 with p value 0.001 and OR 4.672, for the relationship between nutritional status and hemoglobin levels of pregnant women at the Sukajadi Public Health Center in 2020 there is also a significant relationship with p value 0.000 and OR 56,667. And for the relationship between gestational age and hemoglobin levels of pregnant women at the Sukajadi Public Health Center in 2020 there is also a significant relationship with a p value of 0.005 and an OR of 3.661.

E-mail:

farizaayang200297@gmail.com
sandy.pratiwi.01@gmail.com
helnianggraini589@gmail.com

1. Introduction

Maternal Mortality Rate (MMR) is the main indicator of public health status and has been designated as one of the goals of the Sustainable Development Goals (SDGs) agreed by the international community by targeting an MMR of 70 per 100,000 live births in 2030. According to the World Health Organization (WHO) MMR is still is very high, about 830 women die from complications related to pregnancy or childbirth worldwide every day, and about 303,000 women die during and after pregnancy and childbirth. MMR in developing countries reaches 239/100,000 live births while in developed countries it is 12/100,000 live births [1].

The achievement of reducing the number of maternal deaths in local South Sumatra is specifically calculated by the number per person not per 100,000 live births so that it cannot be directly compared with the national achievement. The number of maternal deaths in South Sumatra province in 2014 was 155 people, rose to 164 deaths in 2015, decreased to 142 people in 2016 and fell again to 107 people in 2017 and rose to 119 people in 2018 [2].

Number of DeathsThe highest number of mothers giving birth in 2018 occurred in Banyuasin district as many as 15 people, Musi Banyuasin district as many as 13 people and Musi Rawas district as many as 12 people. The biggest causes of maternal mortality in South Sumatra are Bleeding and Hypertension [3].

The prevalence of anemia in pregnant women in the world is around 40.1 percent. This percentage has increased from 39.8 percent in 2015 and 39.6 percent in 2014. Indonesia is a lower middle class country with a prevalence of anemia as high as 48.9% in pregnant women. Manikam (2021) The Indonesian government aims to prevent anemia in young and pregnant women by giving iron pills [4]. In pregnant women, iron deficiency can cause anemia, decreased birth weight and reduced gestational age. Iron deficiency can also have a negative impact, including fatigue, impaired physical performance and decreased work productivity, as well as having an impact on social activities [5].

The impact of anemia varies from very mild complaints to the occurrence of disturbances in the continuity of pregnancy (abortion, immature or premature parturition), disorders of the delivery process (inertia, atony, prolonged labor, atonic bleeding), disorders during the puerperium (sub involution of the uterus) and disorders of the uterus. fetus (dysmaturity abortion, microsomy, low birth weight, perinatal death) [6].

According to Hutabarat's research in 2021, it was found that pregnant women with first parity and high parity (more than three) have a risk of anemia, this depends on the fulfillment of Fe tablets during pregnancy and foods containing iron that the mother consumes during pregnancy [7]. Based on the results obtained, it shows that of the 30 respondents most of them experienced mild anemia as many as 20 respondents (66.7 percent), moderate anemia as many as 9 respondents (30 percent) and severe anemia as many as 1 respondent (3.3 percent), and there is a parity relationship with anemia in pregnant women with p value = 0.003 [8].

According to Putri's research in 2020, it was found that pregnant women who have high parity have an opportunity to experience anemia incidence of 7.8 times compared to pregnant women who have low parity. From the results of the Chi-Square test, a p value of 0.030 < (0.05) was obtained, this indicates that there is a relationship between maternal parity and the incidence of anemia in pregnant women [9].

According to Fatkhiyah's research in 2018 said that the more often a woman experiences pregnancy and childbirth, the more iron is lost in the body of pregnant women, the higher the incidence of anemia in pregnant women. This is because gestational age can affect the occurrence of anemia. In pregnant women who are in the third trimester, the volume of blood in a woman's body will increase by 35 percent, this is equivalent to 450 mg of iron to produce red blood cells, with a p value of 0.001 OR 2.13 – 5.52 [10].

According to Susilawati's research, there is a relationship between the nutritional status of pregnant women and the incidence of anemia, this can be due to the lack of consumption of foods that contain a lot of low iron, it could also be due to economic factors, infection or consumption of foods or drinks that inhibit iron absorption. . And the results of his research can be concluded that there is a relationship between nutritional status and the incidence of anemia in pregnant women at Bambang Lipuro Health Center with (OR = 5; 95% CI = 1.51 to 16.56; p value = 0.018) [11].

Based on the above phenomenon, researchers are interested in conducting research to determine the relationship between parity, nutritional status, gestational age and hemoglobin levels of pregnant women at Sukajadi Health Center in 2020.

2. Methods

This study uses an analytical survey research using a cross sectional research design, the study was conducted on August 2020, the sample of this study was pregnant women at the Sukajadi Health Center Palembang, the number of samples in this study was 91 people..

3. Results and Discussion

3.1 Result

a. Univariate Analysis

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TABLE 1
FREQUENCY DISTRIBUTION OF RESPONDENTS ACCORDING TO HEMOGLOBIN LEVELS IN PREGNANT WOMEN AT T HE SUKAJADI HEALTH CENTER IN 2020

Hemoglobin Levels in Pregnant Women	f	%
Anemia	55	60.4
No Anemia	36	39.6
Total	**91**	**100**

Based on table 1 above, it can be seen that of the 91 respondents studied, there were 55 respondents (60.4%) who experienced anemia, and 36 respondents who experienced no anemia (26.4%).

TABLE 2
FREQUENCY DISTRIBUTION OF RESPONDENTS BY PARITY TO PREGNANT WOMEN AT SUKAJADI HEALTH CENTER IN 2020

Parity	f	%
High Parity	48	52.7
Low Parity	43	47.3
Total	**91**	**100**

Based on table 2. above, it can be seen that of the 91 respondents studied, 48 people (52.7%) had high parity who gave birth more than 2 times, and 43 respondents (47.3%) experienced low parity.) who gave birth less than 2 times.

TABLE 3
FREQUENCY DISTRIBUTION OF RESPONDENTS BY PARITY TO PREGNANT WOMEN AT SUKAJADI HEALTH CENTER IN 2020

Nutritional status	f	%
Not good (LILA<23.5 cm)	35	38.5
Good (LILA 23.5 cm)	56	61.5
Amount	**91**	**100**

Based on table 3. above, it can be seen that of the 91 respondents studied, 35 respondents (38.5%), and 56 respondents (61.5%).

TABLE 4
DISTRIBUTION OF RESPONDENTS BY GESTATIONAL AGE IN PREGNANT WOMEN AT SUKAJADI HEALTH CENTER IN 2020

Gestational Age	f	%
first trimester	57	62.6
II and III trimesters	34	37.4
Amount	**91**	**100**

Based on table 5.4. above, it can be seen that of the 91 respondents studied, 57 people (62.6%), whose gestational age was in the first trimester were 34 people (37.4%).

b. Bivariate Analysis

TABLE 5
THE RELATIONSHIP BETWEEN PARITY AND HEMOGLOBIN LEVELS OF PREGNANT WOMEN IN THE WORK AREA OF THE HEALTH CENTER IN 2020

No	parity	Hemoglobin levels				Tbrain		*p Valu*	OR
		Anemia		No Anemia					
		f	%	f	%	f	%		
1.	High Parity	37	29.0	11	19.0	48	100	0.001	4,672
2.	Low Parity	18	26.0	25	17.0	43	100		
	Tbrain	55	-	36	-	*91*	100		

Based on table 5.5 above, it can be seen that 91 respondents with high parity who experienced anemia were 37 respondents (29.0%) and those who were not anemic were 11 respondents (19.0%) and 18 respondents who had low parity experienced anemia. (26.0%). while those who are not anemic are 25 respondents (17.0%). The results of the chi-square test obtained a p value of 0.001 < = 0.05, this means that there is no significant relationship between Parity and Hemoglobin

Levels in Pregnant Women at the Sukajadi Health Center in 2020. The hypothesis that there is a relationship between Parity and Hemoglobin Levels in Pregnant Women is proven to be statistically significant. statistics. The odds ratio value is 4.672, meaning that pregnant women with high parity have a 4.672 times greater chance of developing anemia.

TABLE 6
RELATIONSHIP OF RESPONDENTS NUTRITIONAL STATUS WITH HEMOGLOBIN LEVELS OF PREGNANT WOMEN AT SUKAJADI HEALTH CENTER IN 2020

No	Nutritional status	Hemoglobin levels				Tbrain		*p*-Value	OR
		Anemia		No Anemia					
		f	%	F	%	f	%		
1.	Not good	34	21.2	21	33.8	55	100	0.000	56,667
2.	Well	1	13.8	35	22.2	36	100		
	Tbrain	35	-	56	-	*77*	100		

In table 6 it can be seen that 91 respondents with good nutritional status who experienced anemia as many as 34 respondents (21.2%) and 21 respondents who were not anemic (33.8%) while respondents with good nutritional status who experienced anemia were 1 respondent (13.8). %) and 35 respondents (22.2%). The results of the chi-square test obtained a p value of 0.005 < = 0.000 this means that there is a significant relationship between Nutritional Status and Hemoglobin Levels in pregnant women, thus the hypothesis that there is a relationship between nutritional status and Hemoglobin Levels in pregnant women is statistically proven. The odds ratio value is 56,667, meaning that pregnant women who experience poor nutritional status have a 56 chance.

TABLE 7
THE RELATIONSHIP BETWEEN PARITY AND THE CHOICE OF IUD CONTRACEPTION IN LUBUK BATANG LAMA VILLAGE, LUBUK BATANG UPTD WORKING AREA OF PUSKESMAS LUBUK BATANG

No.	Gestational Age	Hemoglobin levels				Total		P Value	OR
		Anemia		No Anemia					
		f	%	f	%	f	%		
1.	first trimester	41	34.5	14	20.5	55	100	0.005	3,661
2.	II & III Trimester	16	22.5	20	13.5	36	100		
	Total	**57**		**34**		**91**	**100**		

Based on table 7 above, it can be seen that 91 respondents in the 1st trimester of pregnancy were 41 respondents (34.5%) and those who were not anemic were 14 respondents (20.5%) while respondents who experienced pregnancy age II and III who had anemia were 16 respondents (22.5%).) and 34 respondents who did not experience anemia (13.5%). The results of the chi-square test obtained a p value of 0.005 < = 0.05, this means that there is a significant relationship between Gestational Age and Hemoglobin Levels in pregnant women, thus the hypothesis that there is a relationship between Gestational Age and Hemoglobin Levels of pregnant women is statistically proven.

3.2 Discussion

1. The Relationship of Parity with Hemoglobin Levels in Pregnant Women

The results of the research on univariate analysis can be seen that of the 91 respondents studied, 26 respondents (28.6%) had high parity who gave birth more than 2 times and 65 respondents (71.4) had a lower percentage. %) who gave birth less than 2 times. The results of the bivariate analysis can be seen that of the 91 respondents with high parity who experienced anemia as many as 37 respondents (29.0%) and 11 respondents (19.0%) who were not anemic. While the respondents who experienced low parity were 18 respondents (26.0%) who had anemia while the respondents who were not anemic were 25 respondents (17.0%). The results of the chi-square test obtained a p value of 0.001 < = 0. 05 this means that there is no significant relationship between Nutritional Status and Hemoglobin Levels in Pregnant Women, thus the hypothesis that there is no relationship between nutritional status and Hemoglobin Levels in pregnant women is statistically

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proven. The odds ratio value obtained is 4.672, meaning that pregnant women who experience high parity have 4,672 times the chance of developing anemia compared to pregnant women who experience low parity to experience anemia.

The results of this study are in line with the theory (Tarwoto and Wasnidar, 2016) that one of the factors that influence anemia is the number of children or the frequency of childbirth. And the results of this study are also in line with the results of research conducted by Sukaesih in 2016 on pregnant women at the Babatoman Health Center which showed that there was a significant relationship between parity and the incidence of anemia with a value of 0.001.

According to the researcher's assumption, mothers who give birth more than three times are at risk of experiencing bleeding complications which can be influenced by anemia during pregnancy and the risk of recurrent bleeding in subsequent pregnancies due to decreased hemoglobin levels.

2. Relationship between Nutritional Status and Hemoglobin Levels of Pregnant Women

This research was conducted on pregnant women at the Sukajadi Public Health Center in 2020 which was divided into two categories, namely Poor Nutritional Status (if LILA is less than 23.5) and Good Nutritional Status (if LILA 23.5cm). The results of the research on univariate analysis can be seen that of the 91 respondents studied, 35 respondents (38.5%), who had poor nutrition status, while 56 respondents (61.5%).

The results of the bivariate analysis showed that 91 respondents who had poor nutritional status were 34 respondents (21.2%) who had anemia while 1 respondent who did not have anemia (13.8%). Meanwhile, 21 respondents (33.8%) who experienced good nutritional status had anemia while those who did not experience anemia were 35 (22.2%).

The results of the chi-square test obtained a p value of 0.00 < = 0.05, this means that there is a significant relationship between nutritional status and hemoglobin levels in pregnant women, thus the hypothesis that there is a relationship between nutritional status and hemoglobin levels in pregnant women is statistically proven. The odds ratio value obtained is 56,667 meaning that pregnant women who experience poor nutritional status have 56,667 times the chance of developing anemia compared to pregnant women who experience good nutritional status for anemia.

The nutritional status of pregnant women greatly affects hb levels, if mothers with poor nutritional status are at risk of developing anemia, while mothers with good nutritional status are not at risk of anemia. If a person has a low nutritional status (lack of carbohydrates and protein) it is likely to reduce Hb levels and increase the risk of anemia in pregnancy.

3. Relationship of Gestational Age with Hemoglobin Level

This research was conducted on pregnant women at the Sukajadi Health Center in 2020 which was divided into two categories, namely Trimester I (if gestational age from 1-12 weeks), and Trimester II and III (if gestational age from 12-36 weeks). The results of the research on Univariate analysis can be seen that of the 91 respondents studied, 57 people (62.5%), whose gestational age was in the first trimester (62.5%), while pregnant women in the second and third trimesters were 34 (37.4%). The results of the Bivariate analysis showed that 41 respondents (34.5%) were 91 respondents in the 1st trimester of pregnancy who had anemia, while 16 respondents (22.5%) did not have anemia. Meanwhile, 14 respondents (20.

The results of the chi-square test obtained a p value of 0.005 < = 0.05, this means that there is a significant relationship between gestational age and hemoglobin levels in pregnant women, thus the hypothesis that there is a relationship between gestational age and hemoglobin levels in pregnant women is statistically proven. The odds ratio value obtained is 3,661 meaning that pregnant women whose gestational age is in the 1st trimester have a 1,397 chance of developing anemia compared to pregnant women whose gestational age is in the second and third trimesters of experiencing anemia.

4. Conclusion

There is a meaningful relationship between parity, nutritional status and age with hemoglobin levels of pregnant women at the Sukajadi Health Center in 2020

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