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The Relationship Between Age of Pregnant Women and Parity With the Incidence of Anemia in Third Semester Pregnant Women

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ABSTRACT
Objective: This research aims to determine the relationship between age of pregnant women and parity with anemia in third trimester pregnant women at Sidorejo Lor Health Center in 2019.
Methods: This is a quantitative research is conducted on third semester pregnant women in Sidorejo Lor Public Health Center with a case control design comparing case group which is third semester pregnant women with anemia and control group which is third semester pregnant women without anemia using statistic-analysis Chi-Square test and Odds Ratio test. Using simple random sampling technique from 36 cases and 36 control of 649 third semester pregnant women in 2019. **Results:** From 72 respondents, is found that the highest proportion of age is on non-risk group (20-35 years old) which is 58 (80,6%), and the highest proportion of parity is on primipara group (≤2 childbirth) which is 53 (73,6%). The bivariate analysis using the Chi-Square statistical test found a significant relationship between age (p = 0,037) and parity (p = 0,032) with the incidence of anemia in third trimester pregnant women. OR values for maternal age (4,8) and parity (3,9). **Conclusion:** There is a significant relationship between age of pregnant women and parity with the incidence of anemia. Public Health Center can improve health promotion programs for mothers approaching age and the number of parities at risk so that the incidence of anemia can be prevented in third trimester pregnant women.

Keywords: *anemia in pregnant women, parity, age*

1. INTRODUCTION

Child and maternal health is one of the indicators of Sustainable Development Goals or SDGs 2030, where the goal is to reduce global maternal mortality to 70/100.000 child birth and to prevent under-five mortality from preventable causes [1]. This can be interpreted that child and maternal health is still one of important health problems to achieve sustainable health development in the world.

Maternal mortality rate in 2017 estimated by World Health Organization or WHO is 211 per 100.000 child birth [2]. That number is still far from SDGs target and can be caused by numerous factors. Pregnant woman is categorized anemic when the hemoglobin level is <11,0 g/dl. Anemia in pregnancy is a condition where the plasma liquid is increased during the pregnancy that caused hemodilution that can be identified as anemia [4]. Global prevalence of anemia in 2016 is 40,08%, with the highest is in South East Asia region 48,15% [3].

In Indonesia, in 2018 the prevalence of anemia in pregnant women is 48,9%, with 84,6% occurring in 15-24 age group pregnant women and 49,5% occurring in rural area. 73,2% of the total case have received additional iron supplement [5]. In Central Java, there is an anemia countermeasure program for pregnant women during her maternity period. From total pregnant women with anemia in 2018, 92,05% has received iron supplement, with the highest coverage program is in Wonogiri Regency in 100%, and Salatiga has a 95,7% coverage [6]. In Sidorejo Lor Public Health Care, there are 133 anemia cases in 2019, with the highest prevalence is in third semester pregnant women which is 49 or 7,55% out of 649 third semester pregnant women[7].

Anemia during pregnancy is dangerous for the mother and the fetus. Anemia can cause some impact such as abortus, premature labor, disruption of fetal growth and development, susceptible to infections, antepartum hemorrhage, premature rupture of membranes, long labor and obstructed labor, uterine subinvolution during puerperium that can cause a post-partum hemorrhage, ease puerperium infections, and underproduction of breastmilk [8].

Anemia during pregnancy can be caused by numerous factors. The risk factors of anemia during pregnancy, includes age of the mother, maternity age, parity, profession, chronic energy deficiency status, education, knowledge, socio-economy status, and husband support [4],[9].

Therefore, research on factors associated with anemia especially parity and age in third semester pregnant women needs to be done, to help Public Health Center to improve programs to prevents anemia in third semester pregnant women.

2. METHOD

The research method that is used in this research is a quantitative method with a case control design. Variables in this research are anemia as a dependent variable, age and parity as independent variables. The sampling technique is a simple random sampling of 674 third semester pregnant women who visited the Sidorejo Lor Public Health Care in 2019, obtained 36 case and 36 control respondents. Univariate and bivariate analysis using Chi Square and Odds Ratio test. Population in this study is third pregnant women who visited the Public Health Care in 2019.

3. RESULTS

A. Univariate Analysis Age

The highest proportion from description of age of pregnant women is pregnant women with range age between 20-35 years old, which is 58 (80,6%) (Table 1). The highest proportion from description of parity of pregnant women is pregnant women parity primipara (≤2), which is 53 (73,6%) (Table 2). The univariate analysis result of age of third semester pregnant women in Public Health Care is as follows:

Table 1. The Description of Age of Third Semester Pregnant Women in Sidorejo Lor Public Health Care in 2019

Age	Frequency	Percentage
Risky (<20 or >35]	14	19,4%
Non-risky (20-35]	58	80,6%
Total	72	100%

Table 2. The Description of Parity of Third Semester Pregnant Women in Sidorejo Lor Public Health Care in 2019

Parity	Frequency	Percentage
Parity Multipara (>2)	19	26,4%
Parity Primipara (≤2)	53	73,6%
Total	72	100%

B. Bivariate Analysis Age

The result of analysis found that there is a significant relationship between age with the incidence of anemia in third semester pregnant women with the risk of third semester pregnant women with the age <20 or >35 years old have 4,8 times pregnant women with the age between 20- 35 years old.

The result of analysis found that there is a significant relationship between parity with the incidence of anemia in third semester pregnant women with the risk of third semester pregnant women with the parity multipara have 3,9 times higher risk to experience anemia than pregnant women with the parity primipara.

Table 3. Relationship Analysis between Age with The Incidence of Anemia in Sidorejo Lor Public Health Care in 2019

Age	Anemia in Third Semester Pregnant Women				*p-value*	OR
	Anemia		Non-Anemia			
Risky (<20 or >35)	11	30,6%	3	8,3%	0,037	4,840 (1,220 - 19,206)
Non-risk (20-35)	25	69,4%	33	91,7%		
Total	36	100%	36	100%		

Table 4. Relationship Analysis between Parity with The Incidence of Anemia in Sidorejo Lor Public Health Care in 2019

Parity	Anaemia in Third Semester Pregnant Woman				p-value	OR (95% CI)
	Anaemia		Non-Anaemia			
	N	%	N	%	0,032	3.945 (1,239-12,562)
Multipara	14	38,9	5	13,9		
Primipara	22	61,1	31	86,1		
Total	36	100	36	100		

4. DISCUSSIONS

Age

The result of bivariate analysis found a significant relationship between age of pregnant women with the incidence of anemia in third semester pregnant women with the OR value 4,8.

As compared to the study by Astriana, found a significant relationship between the age of pregnant women with anemia in pregnant women [10]. Other study of 64 pregnant women in Ampenan Public Health Care, found a significant relationship between age of pregnant women with the incidence of anemia in pregnant women [11].

In Public Health Care there are many programs for maternal health including Antenatal Care where the program includes writing down the age of the pregnant women, nutritional status, upper arm circumference that will determine whether a pregnant woman needs additional iron supplements. Based on the Public Health Care statement, one of the reasons of the occurrence of anemia in pregnant women with non-risk age is most likely because of irregularity of taking the iron supplement that given by the Public Health Care staffs after pregnant women diagnosed with anemia or had anemia symptoms. Pregnant women with age under 20 years old were assumed happened because pregnant women have the lack of understanding and knowledge about the risk of pregnancy at young age or have exposed to information about the ideal age of marriage or pregnancy but the social environment that supports marriage at young age. Pregnant women with the age above 35 years old is assumed had more opportunities to get more information about risky pregnancy through mainstream media, but from the statement received from Public Health Care staff, pregnant women with age above 35 years old can be caused by a history of abortion with the result of needing to wait to have another baby. From samples with the age above 35 in this research, there is one sample where pregnant woman has a history of abortion.

Public Health Care has an additional iron supplement program for pregnant women who diagnosed with anemia or anemia symptoms, there is also a Family Planning (KB) program for those who wants to plan their pregnancy.

Parity

Based on the result of therelationship analysis between parity with the incidence of anemia in third semester pregnant women, there is a significant relationship between parity with the incidence of anemia with OR value 3,9, meaning third semester pregnant women with multipara parity have 3,9 times higher risk to have anemia than third semester pregnant women with primipara parity.

A study done by Wahyu in 2015 also found a significant relationship between parity with the incidence of anemia in pregnant women. Based on a short interview with staff from Public Health Care, pregnant women from the parity group primipara have anemia can be caused by the irregularity of taking additional iron supplement. Some pregnant women from the sample group have an upper arm circumference under 23,5 cm that is assumed relating to nutrition intake, from primipara parity group there is one sample who has upper arm circumference 22,8 cm. While there are 14 pregnant women with multipara parity in case group, this happen because pregnant women with the parity approaching to primipara parity are not using contraception that can be useful to avoid short space between pregnancies. This can be cause of the lack of knowledge about the importance of contraception use to manage pregnancy space for those who plan on getting pregnant in the future, and the importance of contraception use for those who have children more than 2 [12].

As stated before, in Public Health Care there is a maternity class program which includes educations about the danger of pregnancy at risk, but unfortunately there is no specific program to prevent pregnancy in women with risky parity number or women who want to plan the pregnancy space outside of Family Planning program where the program is generalized for all couples of childbearing age who want to use contraception.

5. CONCLUSIONS

According to the result of this study, founded a significant relationship between age of pregnant women and parity of pregnant women with the incidence of anemia in third semester pregnant women in Sidorejo Lor Public Health Care. Public Health Care can improve the importance of taking additional iron supplement as advised for pregnant women who received the supplements especially for those with at-risk age, promotive programs for those.

Who are approaching age 35 years old through programs including maternity class, also, and the use of contraception for those with age under 20 years old or those who approach age 35 years old and for those who approach multipara parity to manage the pregnancy space. For future researches, is expected to use primary data as a main data and study important variables that cannot be studied in this research.

ETHICAL CLEARANCE

This research's ethical clearance has been approved by Esa Unggul University.

CONFLICT OF INTEREST

The authors stated there is no conflict of interest.

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