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Determinants Associated with Pregnancy Complications in Pregnant Women; (Case Study in Abepura, Jayapura City Health Center 2015)

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Abstract

According to the World Health Organization (WHO) in 2014, about 800 mothers die worldwide each day from complications related to pregnancy or childbirth. Each year approximately 20,000 women in Indonesia die from causes related to pregnancy and labor. The purpose of this study was to determine the incidence of pregnancy complications determinant in Abepura, Jayapura City Health Center in 2015. This study was an observational study design with "cross-sectional study", which is one type of the analytic study design. The sample in this study is the third trimester pregnant women who visited antenatal at health centers Abepura totaling 155 people using accidental sampling technique. All data in this study were collected through interviews using questionnaires. Analysis of the data in this study include univariate, bivariate (chi square) and multivariate (logistic regression). Chi-square test results demonstrated an association iron tablet intake (p = 0.022; RP = 2), maternal age (p = 0.018; RP = 2.6), parity (p = 0.03; RP = 1.9), a history of pregnancy complications (p = 0.0001; RP = 2.9), and a history of birth complications (p = 0.002; RP = 2.6) and the incidence of pregnancy complications.

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While the history of infectious disease has no relationship with the incidence of pregnancy complications (p = 0.214; RP = 1.4). Multivariate analysis showed that maternal age and previous pregnancy complications are dominant factors on the incidence of pregnancy complications.

***Keywords*:** Complications of pregnancy; maternal age; history of pregnancy complications.

1. Introduction

Childbirth should be a happy event, but it often turns into a tragedy is the death of either the mother or the baby is born. Actually, almost all of these deaths could be prevented. Because of this, his fifth goal of the Millennium Development Goals (MDG's) focused on maternal health is mainly aimed to reduce "maternal mortality". According to the World Health Organization [1], about 800 mothers die worldwide each day from complications related to pregnancy or childbirth. Each year approximately 20,000 women in Indonesia die from causes related to pregnancy and labor. Every pregnancy and childbirth have risk factors for each. About 90% of pregnancies and childbirth are normal and 10% were at risk of disruption. Some of the factors that could contribute to the high risk of complications during pregnancy and childbirth are among other medical and surgical history, history of obstetric, gynecological history, and age.

The incidence of pregnancy complications is a direct cause of maternal deaths. Pregnancy complications that often occur is bleeding, preeclampsia / eclampsia and infections. World Health Organization (WHO) defines maternal death is the death of a woman while pregnant or within 42 days of the end of the pregnancy, regardless of the duration and the pregnancy, from any cause related to or aggravated by pregnancy or its management, but not from the cause of the accident or incidental. The problem of maternal mortality is a complex issue because it involves a lot of things, namely health status, including the status of reproductive health and nutritional status of the mother before and during pregnancy. The incidence of obstetric complications are at about 20% of all pregnant women, but cases of obstetric complications are handled is still less than 10% of all pregnant women. Target handling cases of obstetric complications set for 2005 is at least 12% of all pregnant women (or 60% of the total cases of obstetric complications) [2].

In 2014, based on data Puskesms Abepura near Jayapura, of 1,039 pregnant women there are 179 pregnant women at high risk. This encourages health advocacy and health professionals to improve the health of pregnant women in this area. The high risk pregnant women in this area had occurred several years earlier, but still a few researchers / experts who conducted the study of the determinants (factors influencing) why these things happen. The purpose of this study was to determine the incidence of pregnancy complications determinant in Abepura, Jayapura City Health Center in 2015.

2. Materials and Methods

This study was an observational study design with "cross-sectional study" which is one type of study design that are analytic. The design was intended to study the dynamics, and the variation of the variables contained in this study, with variable free is (consumption tablet of iron (Fe), a history of complications of pregnancy, a history of birth complications, history of infectious disease, parity, and maternal age), while the dependent variable is

the incidence of pregnancy complications. The sample in this study is the third trimester pregnant women who visited antenatal at health centers Abepura. The number of samples in this study amounted to 155 people. The sampling technique used in this research is accidental sampling. All data in this study were collected through interviews using questionnaires. The data have been collected and subsequently processed and analyzed to answer the research objectives. Analysis of the data in this study include univariate, bivariate and multivariate analyzes. For the univariate analysis using table distribution, while the bivariate analysis using chi square test. Logistic regression analysis is used to explore where the most dominant factor in the multivariate analysis.

3. Results

3.1 Characteristics of Respondents

Table 1: Distribution of respondents by education level and occupation

Characteristics		**n (155)**	**%**
Education			
1.	Elementary school	9	5,81
2.	Junior high school	27	17,42
3.	Senior high school	85	54,84
4.	Higher education	34	21,94
Occupational			
1.	Household mother	111	71,61
2.	College student	12	7,74
3.	Private	19	12,26
4.	Civil servant	13	8,39

Table above shows that majority of respondents had a high school education level (54.84%) and only a small proportion who have primary education level (5.81%). From Table 1 also shows that most respondents had not worked and just as housewives (71.61%) and only 8.39% who work as civil servants. In this study there were also respondents who are still studying in the college level (student) of 7.74%.

3.2 Univariate Analysis

Results of univariate analysis can be seen from Table 2. The data show that there were 41 (26.5%) of respondents who experienced pregnancy complications.

The results also show that there are 58.1% of respondents who consume iron tablet is less than 90 tablets. Of the total respondents, almost the majority of which have a lifespan during pregnancy included in the at-risk age is as much as 76.8%.

Most women in this study had no history of infectious disease and only 45 (29%) of respondents who have a

history of infectious diseases. More than half of respondents (83%) were included in the group of low parity and only 25 respondents (161%) were included in the high parity. The above table also shows that most respondents do not have a history of complications, both previous pregnancy complications and previous childbirth complications.

Table 2: Distribution of respondents by the research variables

Variables	n (155)	%
1. Pregnancy complication		
a. Yes	41	26,5
b. Not	114	73,5
2. TTD consumption		
a. < 90 tablets	90	58,1
b. ≥ 90 tablets	65	41,9
3. Age		
a. Risk (<19 yr and >35 yr)	36	23,2
b. Not risk (19-35 yr)	119	76,8
4. Infection disease history		
a. Have history	45	29
b. Not have	110	71
5. Parity		
a. High parity	25	16,1
b. Low parity	130	83,0
6. Pregnancy complication history		
a. Have history	28	18,1
b. Have not history	127	81,9
7. Child birth complication history		
a. Have history	15	9,7
b. Have not history	140	90,3

3.3 Analysis Bivariat

Bivariate analysis results can be seen from the table above (Table 3). The table shows that there is a relationship between the consumption of iron tablet with pregnancy complications (p = 0.02), with the value of RP = 2.0, it means that mothers who ate not consume iron tablet is less than 90 tablet has a 2 times higher risk likely to have

pregnancy complications than those who consume iron tablet ≥ 90 tablets. The analysis also showed no correlation between age of pregnant women with pregnancy complications (p = 0.018). Values obtained RP = 2.6, which means that mothers have risky during pregnancy age (<19 years and> 35 years) were 2.6 times more likely to have complications in pregnancy compared to women with a safe reproduction age (19-35 years old). From Table 3 also indicated that there is a relationship between parity with pregnancy complications (p = 0.03). Values obtained RP = 1.9, which means that respondents with higher parity at risk of complications was 1.9 times greater than the low parity respondents. It is known that a history of pregnancy complications linked to pregnancy complications (p = 0.0001). Values obtained RP = 2.9 hi. This means that women who had a history of previous pregnancy complications 2.9 times more likely to experience complications than those who do not have a history. It is equal to the variable delivery complications of childbirth complications where there is a relationship prior to pregnancy complications (p = 0.02) and RP are obtained value is 2.6. This means that there is a history of maternal complications of childbirth had a 2.6 times greater risk for pregnancy complications than those who do not have a history. The only variables that have no relation with the dependent variable is the history of infectious disease. Where the values obtained p = 0.214. Because the value> 0.05 then Ho was accepted that concluded there was no correlation with the infectious disease history of pregnancy complications.

3.4 Multivariate Analysis

Seen from the above table that the significant variables in the final model of logistic regression was also a history of gestational age and previous pregnancy complications.

4. Discussion

Medical history or health of the mother who possessed very influential in the fetus during pregnancy. Some diseases of the mother during pregnancy such as heart disease, high blood pressure, asthma, seizures, to diabetes, will greatly affect the development of the fetus during pregnancy and childbirth. These diseases will potentially cause abnormal fetal growth, preterm, LBW (low birth weight), until death. Obstetric history can be called a history of birth complications. Some of the problems experienced during childbirth, and potentially cause complications include differences in Rh (rhesus) mother and fetus, Rh sensitive, have experienced severe bleeding, and premature labor. In addition, the problems associated with the placenta such as placenta previa (placenta covered the birth canal), or solustio plasentae (whole or partial placenta separated) that have also experienced will affect the delivery process and subsequent pregnancies. Based on the results of research conducted to find out the determinants of incidence of pregnancy complications in pregnant women known that age, consumption of iron tablet, parity, history of complications of pregnancy and childbirth complications history previously had a relationship with the incidence of pregnancy complications, while a history of infectious diseases do not have a relationship.

Parity is the number of births that have been passed by a good mother was born alive or stillborn, so birth with abortion included as part of the parity. Parity can affect infant mortality, since it relates to the recovery of the reproductive organs have not been in accepting the occurrence of pregnancy. If parity is smaller then the uterine muscle remains strong, pushing force has not decreased, the incidence of birth complications or prolonged labor

that can harm both mother and baby will be smaller. Every pregnancy will cause abnormalities in the uterus-disorder in this if repeated pregnancy may result in damage to the blood vessels of the uterine wall that also affect the circulation of nutrients to the fetus where the amount of nutrients will be reduced compared with previous pregnancies [3].

Table 3: Cross Tabulation Variables Research

Variables	**Pregnancy complication**		**P Value**	**RP (CI 95 %)**
	Ya (n=41)	Tidak (n = 114)		
1. TTD consumption				
a. < 90 tablets	30(44%)	60(56%)	0,022	2 (1,1-3,6)
b. ≥ 90 tablets	11(23,1%)	54(76,9)		
2. Age				
a. At risks (<19 yr and >35 yr)	15(41,7%)	21(58,3%)	0,018	2,6 (1,16-5,46)
b. Not risks (19-35 yr)	26(21,8%)	93(72,8%)		
3. Infection diseases history				
a. Have history	15(33,3%)	30(66,7%)	0,214	1,4 (0,83-2,4)
b. Not have	26(23,6%)	84(76,4%)		
4. Parity				
a. High parity	11(33,3%)	14(66,7%)	0,03	1,9 (1,10-3,28)
b. Low parity	30(16,9%)	100(83,1%)		
5. Pregnancy complication history				
a. Have	16(57,1%)	12(42,9%)	0,0001	2,9 (1,8-4,6)
b. Not have	25(19,7%)	102(80,3%)		
6. Delivery complication history				
a. Have	9(60%)	6(40%)	0,002	2,6 (1,6-4,3)
b. Not have	3222,9%)	108(77,1%)		

Tabel 4: Last Model of logistics Regression (Stepwise Method)

Variables	β	sig	Exp (B)	95% CI
Age (1)	0,943	0,028	2,567	1,11 – 5,958
Initial pregnancy complication (1)	1,697	0,000	5,456	2,25 – 12,231
Constanta	-1,66	0,000	0,190	

Several studies that have been done previously also showed similar results, as did [4]. Research conducted Edyanti shows that there is a relationship with the incidence of maternal gestational age pregnancy complication. Other studies also conducted by Ummah provides a similar hail. Research done by [5] showed that mothers were aged <20 years and> 35 years of contributing to the risk of neonatal mortality with the risk of maternal age <20 years was 2.18 times, while in women aged 35 years and over by 2 , 05 times. Research by [6] states that the level of under-five mortality rate is determined by the age factor of a mother during childbirth All pregnancies have an increased risk respectively, and such risks increasing maternal age older than 35 years and the mother's age less than 19 years. Maternal age and maternal health is crucial with regard to the condition of pregnancy, childbirth and postpartum and parenting and breastfeeding her baby. Mother aged less than 20 years is still immature and not ready, the physical and the social in the face of pregnancy, childbirth and in fostering a baby is born [7].

In addition, consumption of iron (Fe) also provide significant impact during pregnancy. The addition of proven iron can prevent a decrease in hemoglobin due to hemodilution. Without supplementation of iron stores in the body of the woman will expire at the end of pregnancy [8]. For pregnant women are encouraged to consume 30-60 mg of iron tablet daily [9] in order not to depletion of iron stores in the body, starting at the age of pregnancy 12 mg to 12 mg after childbirth. Research conducted Wabula showed that the consumption of iron tablet pregnancy-related complications. Iron (Fe) is an essential mineral for the body and the micro-most abundant mineral in the body. Iron needs of pregnant women will increase by 200-300%, which is used for the formation of the placenta, and red blood cells. The amount of iron is needed during pregnancy as much as 1,040 mg. A total of 300 mg of iron transferred to the fetus, with details for the formation of the placenta 50-75 mg, 450 mg for the addition of red blood cells, and 200 mg disappeared during childbirth. This amount may not be fulfilled from the diet. Therefore, iron supplements are very important, even in women who had good nutritional status.

Results of research on the Abepura health center is in line with previous studies conducted by [10. 11], namely that there is a relationship between the incidence of pregnancy complications prior to pregnancy complications. Women who have had complications in previous pregnancies time will face a high risk pregnancy and following childbirth. According to [12, 13, 14], mothers who experienced complications in previous pregnancies 14 times the risk of experiencing complications in subsequent pregnancies than women who did not experience complications in pregnancy first. Labor history in the past highly correlated with the results of subsequent pregnancy and childbirth. If the past history of poor labor officer must guard against the occurrence of complications in childbirth that will last. Poor labor history is marked by labor done by actions such as: vacuum extraction, forceps, and surgery Cesaria section, which with these actions add to the increase in maternal perineal injury, causing scarring.

Pregnancy and childbirth with a history of cesarean section, the presence of scar tissue in the perineum and vagina due to lacerations that never happened before, and sometimes after experiencing a labor traumatic accompanied by lacerations of the sphincter, causing the muscle has not fully recovered, the consequences will deter or hinder the progress of the next delivery. Scarring also causes perineum rigid and elastic, which would impede the second stage of labor and can increase the risk to the fetus, can also lead to extensive perineal tears

to level III [15].

5. Conclusion

Of the six independent variables studied, only five variables that have a relationship with the incidence of complications in pregnant women at health centers Abepura. These variables are: maternal age, parity, consumption of iron tablet, complication history of pregnancy and childbirth complications history. While the history of infectious diseases have no connection with pregnancy complications.

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