

Factors Related to The Obstetric Complications in The Working Area of Halong Public Health Center Balangan District 2017

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Abstract

Around 80% of maternal mortality are due to increased complications of obstetrics. High obstetric complications in Balangan District 18.1% where in Halong Public Health Center is 41.89%. The research aim to analyze the factors related to obstetric complications in the working area of the Halong Public Health Center 2017. Research method using analytic observational with case control study design. The population of this study was 327 postpartum mothers in the Halong Public Health Center Working Area. Proportional random sampling that has been determined based on inclusion criteria with a total sample of cases 74 and 74 controls. Calorie energy deficiency (CED) ($p=0.80$), anemia ($p=0.038$), weight gain ($p=0.032$), age ($p=0.517$), parity ($p=1,000$), pregnancy spacing ($p=0.069$), antenatal care (ANC) ($p=0.014$), height ($p=0.743$) for obstetric complications. Multivariate analysis using multiple logistic regression showed anemia variables ($p=0.031$; Exp.B=2.704), weight gain ($p=0.033$; Exp.B=2.112), and ANC ($p=0.028$; Exp. B=3.132) to obstetric complications. There was no relationship of CED, age, parity, space of pregnancy, and height with obstetric complications and there was an relationship of anemia, weight gain, and ANC with obstetric complications in the working area of Halong Public Health Center in Balangan 2017.

Keywords: anemia, weight gain, ANC, obstetric complications

Introduction

The direct cause of MMR is related to complications during childbirth such as bleeding, hypertension, eclampsia, infection and prolonged parturition. Around 80% of maternal deaths are due to increased complications during pregnancy, childbirth and after childbirth.¹ The obstetric complications is present in about 20% of all pregnant women, but the cases of obstetric complications handled are still less than 10% of all pregnant women. As for the types of complications as a direct cause of maternal death are bleeding 42%, eclampsia 25%, infections 3%, old parturition 3% and

other pregnancy complications 27%. Based on data from the South Kalimantan Health Office profile in 2017, it was found that MMR in South Kalimantan was 103 per 100,000 live births (75 people). The second highest MMR in Balangan District was 175.97 per 100,000 live births (5 people). The number of obstetric complications in South Kalimantan Province in 2017 was 20.45%. One of the high obstetric complications is Balangan District in 2017 as many as 537 people (18.1%).² Based on the monitoring report of the local area (PWS) maternal and child health program in Balangan District in 2017, the highest obstetric complications at the Halong Public Health Center were 137 people (41.89%). Most of these obstetric complications occur during pregnancy (40.41%) and childbirth (55.48). While obstetric complications that occur in childbirth as much as 4.1%.³ One strategy to reduce maternal mortality is to prevent/reduce the possibility of pregnant women experiencing complications in pregnancy, childbirth and the puerperium. The complications of pregnancy and childbirth are direct factors causing maternal death. The

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indirect factors that cause maternal death and also affect the incidence of complications of pregnancy and childbirth are health status, namely nutritional status, infectious diseases, chronic diseases, heart disease, kidney disease, history of complications. Reproduction status, namely gestational age, number of births, marital status. Access to services is affordability of location, type and quality of service, affordability of information. Healthy behaviors are contraception, pregnancy check-up, childbirth assistance, uterine abortion behavior.

Materials and Method

This research is a quantitative study, with an analytical observational research design through a case control study. The case control study was carried out by identifying the case group (obstetric complications) and the control group (postpartum mothers with no complications), then retrospectively (backward tracking) investigated risk factors that might explain whether the case and control were exposed or not. Population was postpartum mother in Halong Public Health Center amounting to 327. The sampling technique is proportional al random sampling, the minimum number of samples was 74 cases and 74 controls.

Findings and Discussion

Table 1. Frequency Distribution and Risk Factors of Obstetric Complications at the Working Area of Halong Public Health Center 2017

Variable	Category	Frequency (person)	Percentage (N = 148)
CED	CED	18	12.20%
	No CED	130	87.80%
Anemia	Anemia	29	19.60%
	No anemia	119	80.40%
Weight gain	Risky < 9 kg	70	47.30%
	No risk \geq 9 kg	78	52.70%
Mother's age	Risky	26	17.60%
	No risk	122	82.40%
Parity	Risky	46	31.10%
	No risk	102	68.90%
Pregnancy spacing	Risky	33	22.30%
	No risk	115	77.70%
Antenatal Care (ANC)	Incomplete	24	16.20%
	Complete	124	83.80%
Mother's Height	Risky	10	6.80%
	No risk	138	93.20%

Table 2. Bivariate Analysis Results

Variable	Case		Control		OR	95% CI	P
	n	%	n	%			
CED							
CED	10	13.5	8	10.8			
No CED	64	86.5	66	89.2	-	-	0.801
Anemia							
Anemia	20	27	9	12.2			
No anemia	54	73	65	87.8	2,675	1,126-6,356	0.038
Weight Gain							
Risky < 9 kg	42	56.8	28	37.8			
No risk ≥ 9 kg	32	43.2	46	62.2	2,156	1,117-4,161	0.032
Mother's age							
Risky	15	20.3	11	14.9			
No risk	59	79.7	63	85.1	-	-	0.517
Parity							
Risky	23	31.1	23	31.1			
No risk	51	68.9	51	68.9	-	-	1
Pregnancy spacing							
Risky	18	24.3	15	20.3			
No risk	56	75.7	59	79.7	-	-	0.693
Antenatal Care							
Incomplete	18	24.3	6	8.1			
Complete	56	75.7	68	91.9	3,643	1,355-9,797	0.014
Mother's height							
Risky	6	8.1	4	5.4			
No risk	68	91.9	70	94.6	-	-	0743

Relationship of CED and Obstetric Complications

The results of the Chi-Square test, obtained $p=0.80$ ($p \geq 0.05$), which means there was no relationship between CED and obstetric complications. It could be due to the fact that based on the data available the most respondents were not CED (87.8 %) which was not a risk factor for pregnant women. In addition, the Halong Public Health Center has carried out nutrition interventions on CED pregnant women by providing supplementary food to pregnant women. Actions given to pregnant women with CED in general are adding more food portions than before pregnancy, resting more, as well as more adequate antenatal checks to monitor

adequate weight gain. The results of this study are in line with Aeni (2013) that there was no relationship of CED (LILA <23cm) with obstetric complications.⁴

Relationship between Anemia and Obstetric Complications

The results of the Chi-Square test, obtained $p=0.038$ ($p < 0.05$), which means there was a relationship between anemia with obstetric complications. Results OR=2.6; 95% CI=1.126-6.356 which means that mothers who have anemia have a risk of developing obstetric complications 2.6 times greater than mothers who do not have anemia.

A standardized and regular pregnancy check-up will be able to monitor maternal weight gain during pregnancy and anemic mothers will receive treatment and counseling regarding anemia management. The results of this study are strengthened by Edyanti and Indawati (2014) which shows that there was an anemic relationship ($p=0.0001$) to obstetric complications.⁵

Relationship between Weight Gain and Obstetric Complications

The results of the Chi-Square test, obtained $p=0.032$ ($p<0.05$), which means that there was a relationship between risky weight gain and obstetric complications. Results $OR=2.1$; $95\% CI= 1.11-4.16$ which means that women who experience risky weight gain have a risk of experiencing obstetric complications 2.1 times greater than those of mothers who gain weight.

During pregnancy, mothers will gain weight around 10-12 kg, where in the first trimester it is less than 1 kg, trimester II around 3 kg, and trimester III around 6 kg. A habit that is commonly practiced in Indonesia but is not beneficial one of which is limiting eating and drinking to prevent large babies. The habit that occurs is also the head of the family who is prioritized first to fulfill the new nutrition of his wife and children. The results of this study are in line with research conducted by Khoiriah et al (2015) which states there is a significant relationship between maternal weight gain with obstetric complications and Shiddiq's research (2014).

Relationship between Age and Obstetric Complications

The results of the Chi-Square test, obtained $p=0.517$ ($p\geq 0.05$), which means that there was no relationship between the age of mothers with obstetric complications. Age <20 years or >35 years is actually a risk factor for obstetric complications. However, many respondents (age <20 years or > 35 years) in this study were located near the sub-district (Halong village, Tabuan village) making it easier for health workers to detect pregnant women at risk and monitor their pregnancies. Access to health services is largely determined by the distance of the house from the health facility. The availability of health workers, especially midwives in the villages, is also available in every village who is ready at any time to help pregnant, childbirth and postpartum mothers. The results of this study are in line with the results of the study of Diana, et al (2012) which showed no relationship between the age of pregnant

women with the obstetric complications ($p =0.290$). In accordance with the results of the study Simarmata et al (2015) age was not associated with obstetric complications.⁶

Relationship between Parity and Obstetric Complications

The results of the Chi-Square test, obtained $p=1.0$ ($p\geq 0.05$), which means that there was no relationship between parity and obstetric complications. The proportion of the risky parity in the case and control groups was equal to 31.1%. It is in line with the study of Simarmata et al (2015), there was no relationship between maternal parity and obstetric complications ($p=1.0$). Likewise with the study of Astuti, et al (2017), there was no relationship between maternal parity and obstetric complications ($p=0.427$).⁷

Relationship between Antenatal Care and Obstetric Complications

The results of the Chi-Square test, obtained $p=0.014$ ($p<0.05$), which means that there was a relationship between incomplete antenatal care with obstetric complications. Results $OR=3.6$; $95\% CI=1.355-9.797$ which means that a mother who is pregnant with an incomplete antenatal care has a risk of obstetric complications 3.6 times greater than a mother who has a complete pregnancy check-up.

Antenatal care should start as early as possible, namely immediately after no longer menstruating. The goal is to keep pregnant women through pregnancy, childbirth and childbirth well and safely. The standard time for antenatal care is recommended to guarantee protection to pregnant women, in the form of early detection of risk factors, prevention and management of complications. The existence of antenatal checkups that is in accordance with the standards and is continually accompanied by good records can reduce the risk factors causing obstetric complications.

Research Sulistiyowati et al (2017) found that the causes of obstetric complications in the mother, in the form of poor antenatal care pose a risk of obstetric complications. Research Nurrizka et al (2018) found that the main problem of obstetric complications was the problem of poor maternal health access in most districts/cities in Eastern Indonesia. One of them is antenatal coverage, especially the fourth pregnancy visit (K4) which is low, the OR value of the variable coverage

of the fourth pregnancy visit (K4) is 1.682.^{8,9}

Relationship between Height and Obstetric Complications

The results of the Chi-Square test, obtained $p=0.743$ ($p \geq 0.05$), which means that there was no relationship between the height and obstetric complications. This study is in accordance with the research of Huda (2006) which showed no relationship between maternal height <145 cm with obstetric complications.¹⁰

Multivariate Analysis

Table 3. Final Models of Multivariate Logistic Regression

Risk Factors	B	Exp (B)	95% CI	Sig.
Antenatal Care	1.142	3.312	1.128-8.692	0.028
Anemia	0.995	2.704	1.094-6.685	0.031
Weight gain	0.748	2.112	1.062-4.200	0.033

The results showed that the risk factors for antenatal care were the most related variables for obstetric complications ($p=0.028$) compared to anemia and weight gain. Respondents with incomplete antenatal care, 3,312 times will have a risk of obstetric complications compared with respondents who have complete antenatal examinations. This is because the antenatal care greatly affect the maternal pregnancy, fetal development and emergencies that may occur. Pregnant women who have their pregnancies checked according to standards to ensure that they can get through the period of pregnancy, childbirth and childbirth properly so that the mother and baby are safe. Routine antenatal check-up according to the schedule that has been determined at least 4 times during pregnancy in accordance with the standards set by the Republic of Indonesia Ministry of Health, mothers can know the progress of their pregnancy conditions and can detect early complications that can occur during pregnancy.¹¹ Mothers who check their pregnancy routinely will have the opportunity to carry out examinations including laboratory services (Hb examination). Anemia of pregnant women can also be known and treated if it occurs. Every time a

pregnant woman checks her pregnancy, weight will be weighed. Weight gain will be monitored so that the mother will know the increase in body weight during pregnancy and know the benefits of weight gain during pregnancy and the risks that occur if an unsafe weight gain occurs.

Conclusion

There was no relationship of CED, age, parity, space of pregnancy, and height with obstetric complications. There was an relationship of anemia, weight gain, and ANC with obstetric complications. The antenatal care is the most related factor in the obstetric complications in the working area of Halong Public Health Center in Balangan 2017.

Ethical Clearance: Before conducting the data retrieval, the researchers conducted a decent test of ethics conducted at the Faculty of Medicine, Lambung Mangkurat University to determine that this study has met the feasibility. Information on an ethical test that the study is eligible to continue. The feasibility of the research was conducted to protect the human rights and security of research subjects.

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Conflict of Interest: The authors declare that they have no conflict interests.

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