The correlation between the quality of anc services and the incident of lbw in the public health center of Wates in Kulon Progo Regency

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Abstract

In the world of LBW occupies the first cause of infant mortality in the world in the early period of life. LBW accounts for 60% to 80% of all neonatal deaths. The global prevalence of LBW is 20 million per year or 15.5% of all babies born in the world (WHO, 2015). In Indonesia, according to The Inter-Census Population Surveys (SUPAS) 2015 IMR was 22.23 per 1,000 live births (Kemenkes RI, 2016). The Poor quality of antenatal care is one of the risk factors for LBW (Sistiarani, 2008). This study aims to determine the correlation between the quality of ANC services and the incidence of LBW in the Public Health Center of Wates Kulon Progo Regency. This study uses quantitative research with case control design and uses a retrospective approach. The populations of the study were mothers who had given birth to babies during the last two years (2016-2017). The sampling technique uses total sampling for control cases by using a ratio of 1: 1 for the case group of 40:40 samples. The study proves that the results of statistical tests show that there is a relationship between the quality of ANC services and the incidence of LBW with a p-value of 0.025 (OR=3.095, CI= 1.234-7.706).). There is a relationship between the quality of ANC services and the incidence of LBW. The inadequate or unqualified quality of ANC services increases the risk 3 times for the incident of LBW. It is expected to be able to monitor and import data on pregnant women using a mobile application.

Keywords: The Service Quality of AN;, Antenatal; LBW

INTRODUCTION

Infant Mortality Rate (IMR) is an important indicator in determining public health status. The world Infant Mortality Rate (IMR) is still relatively high at 37 per 1000 live births (WHO, 2015). IMR in the Association of Southeast Asian Nations (ASEAN) in 2015, Singapore 2 per 1000 KH, Brunei Darussalam 9 per 1000 KH, Malaysia 6 per 1000 KH, Thailand 11 per 1000 KH, Vietnam 17 per 1000 KH, Philippines 22 per 1000 KH, Indonesia 22 per 1000 KH (Word Bank, 2015).

According to the World Health Organization (WHO) report in 2015, neonatal mortality accounts for 45% of deaths under five years in 2015. The main causes of neonatal death in 2015 are complications of LBW birth 16%, complications related to intrapartum 11%, sepsis 7%, anomaly congenital 5%, pneumonia 3%, others 3%, tetanus 1%. LBW occupies the first cause of infant mortality in the world in the early period of life. LBW accounts for 60% to 80% of all neonatal deaths. The global prevalence of LBW is 20 million per year or 15.5% of all babies born in the world (WHO, 2015).

Infant Mortality Rate (IMR) in Indonesia, according to the 2015 inter-census population survey (SUPAS) of 22.23 per 1,000 live births. Similarly, the Under-Five Mortality Rate (AKABA) from SUPAS result in 2015 was 26.29 per 1,000 births (Kemenkes RI, 2016).

Low Birth Weight (LBW) is a baby born with a weight equal to or less than 2500 grams (WHO, 2014). Poor quality of antenatal care is one of the risk factors of LBW (Sistriani, 2008). Babies born with low birth weight (LBW) can be at high risk. Birth weight has an important role in subsequent child development, for this reason the condition of pregnant women is very important to be considered during an antenatal visit. Antenatal care can be used as an initial screening for the condition of the baby to be born. Babies can be born with the condition of babies born with high, normal or low weight.

Some studies show that inadequate visits and quality of ANC services increase the risk of low birth weight babies (LBW) (Fonseca. C.R.B, et al. 2014). According to the research result of Alam, Muhammad. R. et al, 2017 Inadequate / not qualified antenatal care is related to the incidence of LBW (Alam, Mahamud, Reshidul. et. al 2017). Meanwhile, according to the research result of Yaya, Sani. et al, 2017, pregnant women who were less than 4 times ANC visits had a 34% higher chance of giving birth to babies with low birth weight compared to pregnant women who visited at least 4 times (Yaya, Sanni et.al 2017). The results of research conducted by Ruindungan, Ribka Yulia, et al 2017, The good / quality of ANC checkup has a threefold chance toward the incident of normal birth weight (NBW) (Ruindungan, 2017).

Based on the Special Region of Yogyakarta (DIY) low birth weight data in 2016 from districts with the highest to lowest number of low birth weight cases: Kulon progo 7.47%, Gunung Kidul 6.68%, Yogyakarta 5, 47%, Sleman 4.84, and Bantul 3.66%. LBW figures in Kulon Progo Regency in 2014 were 7.11%, in 2015 6.95%, in 2016 7.47%, although in 2014 to 2015 there was a decrease in LBW rates, but in 2015 to 2016 there were an increase in the number of cases LBW that is from 6.95% to 7.47% (Dinkes DIY, 2016).

Data on babies born in Kulon Progo Regency in 2017 with low birth weight (LBW) of 332 / 6.69%. Low birth weight cases are found in all working areas of Puskesmas throughout Kulon Progo Regency with the number of LBW cases> 23 in the area of Wates, and Pengasih II; with the number of LBW cases between 23-19 in the area of Panjatan I, Kokap I and Nanggulan (Dinkes Kulon Progo 2017).

Based on the results of a preliminary study conducted in the Public Health Center of Wates, there were several instances of LBW that were not qualified in performing ANC services. So that the researcher is interested in conducting research on the Correlation between the Quality of ANC Service and the Incident of LBW in the Public Health Center of Wates in Kulon Progo Regency.

RESEARCH METHODS

This research is a quantitative research with Case control research design and uses a retrospective approach. The study was conducted for 3 months on February 27th to May 10th, 2018. Population of the study, research sample / participant / informant, and sampling technique. The populations of this study were all mothers who had given birth for the last two years (2016-2017) at the public health center of Wates in Kulon Progo Regency. This study uses two groups, the case group is the mother who gave birth to LBW babies and the control group is the mother who gave birth to a normal baby. The sample of this study is 1: 1 in the case group amounting to 40 taken in total sampling and the control group 40 taken randomly.

Data collection methods use secondary data, namely the cohort and medical records at the public health center of Wates in 2016-2017 using questionnaires.
Data analysis is univariate and bivariate analysis using Chi-Square test.This study was granted permission from the Aisyiyah University research ethics commission, as well as permission from the National Unity and Politics of Special Region of Yogyakarta (DIY) and Kulon Progo.

RESULTS AND DISCUSSION

Table 1. Frequency distribution of respondent characteristics

Characteristics	Group				n (total)	%
	Case		Control			
	F	%	f	%		
1 **Age**						
< 35 Years Old	32	80	27	67,5	59	73,
≥ 35 Years Old	8	20	13	32,5	21	26,2
2 **Education**						
Low Education	9	22,5	16	40	25	31,2
Higher Education	31	77,5	24	50	55	68,8
3 **Occupation**						
Working	15	37,5	10	25	25	31,2
Not Working	25	62,5	30	75	55	68,8
4 **Parity**						
< 3	8	20	26	65	34	42,5
≥ 3	32	80	14	35	46	57,5

In getting that, out of 80 mothers who became respondents in the Wates Public Health Center in Kulon Progo Regency most of their age was <35 years, amounting to 59 respondents with a percentage of 73.8% and age ≥ 35 years, amounting to 21 respondents with a percentage of 26.2%. For educational characteristics, the majority of respondents were higher education with a total of 55 respondents with a percentage of 68.8% and for low education there were 25 respondents with a percentage of 31.2%. For job characteristics, the majority of respondents work that is not working as many as 55 respondents with a percentage of 68.8% and for respondents who work amounted to 25 with a percentage of 31.2%. For the characteristics of parity, the majority of respondents with parity ≥ 3 were 46 with a percentage of 57.5% and respondents with parity <3 as many as 34 with 42.5% respondents.

Table 2. The Correlation between the quality of ANC with the incident of LBW

ANC Quality	LBW Criteria						OR	95% CI	p value
	LBW		Not LBW		Total				
	n	%	n	%	n	%			
Good Quality	15	37,5	26	65	41	51,2	3,095	1,243-7,706	0,025
Unqualified	25	62,5	14	35	39	48,8			
Total	40	100	40	100	80	100			

Based on Table 2 states that mothers who gave birth to LBW babies with unqualified of ANC services were 25 (62.5%) and mothers who gave birth to LBW babies with a good quality of ANC services were 15 (37.5). Whereas for the control case stated that the mother who gave birth to a non-LBW baby with unqualified ANC services was 14 (35%) and for those who gave birth to non-LBW babies with a good quality of ANC services were 26 (65%). From the total 80 respondents (100%) the value of significance in the results shows p-value 0.025 (OR = 3.095, CI = 1.234-7.706). This shows the correlation between the quality of ANC services and the incidence of LBW at the Public Health Center of Wates in Kulon Progo Regency in 2018.

In this study it was found that the quality of ANC was related to the incidence of low birth weight which was p-value 0.025 (OR = 3.095, CI = 1.234-7.706).). These results indicate that the inadequate quality of ANC services increases the risk 3 times for the incident of LBW.

Low birth weight babies (LBW) are babies at birth less than 2500 grams regardless of gestational period, can occur in term or preterm infants. LBW will be a global public health problem both short and long term(WHO, 2014 and Unicef, 2017. Antenatal Care affects the incidence of LBW. In general, 80-90% of pregnancies will be normal and only 10-12% of pregnancies are accompanied by complications or develop into pathologies. Pathological pregnancy does not occur suddenly because of pregnancy and its effect on organs is step by step and gradual. Early detection of symptoms and alarms during pregnancy is the best effort to prevent serious disorders of pregnancy or the safety of pregnant women (Manuaba et.al 2010 and Proverawati, 2010). Predisposing factors and the presence of comorbidities should also be recognized from the start so that maximum efforts can be made to prevent severe disruption to pregnancy and the safety of mothers and babies conceived (Prawirohardjo, 2010). According to the University of Rochester Medical Center (2014) and Shore (2009) prevention of LBW, it can be done with prenatal care which is a key factor in preventing preterm birth and low birth weight babies. At prenatal visits, maternal and fetal health can be examined. In its implementation pregnant women also get counseling such as nutrition, weight, and things to avoid (University of Rechester Medical Center, 2014). Maternal nutrition and body weight are associated with increasing fetal weight and weight of the baby at birth, so eating healthy foods and getting the right weight during pregnancy is very important. Mothers also have to avoid alcohol, cigarettes and illegal drugs, which can contribute to poor fetal growth, apart from other complications.

According to research conducted by Arunda, Malachi, et. al (2017) the prevention of LBW by means of an ANC visit is appropriate. The likelihood of the highest neonatal mortality was among neonates whose mothers did not attend ANC visits and mothers who lacked an appropriate quality ANC during pregnancy. About 38 percent of all neonatal deaths in Kenya are caused by a lack of antenatal care for pregnancy complications (Arunda, Malachi et.al (2017). The results of this study are

also in accordance with the results of research conducted by Vishnu Khana, et. al (2014). Pregnant women who do not attend antenatal care increase the likelihood of having LBW babies more than twice. Iron supplements, which are an integral part of antenatal care in Nepal, are also significantly associated with birth weight; mothers who did not consume iron supplements during their pregnancy were more likely to have LBW babies (Vhisnu Khana et.al. 2014). ANC visits are also carried out according to the gestation period. in Indonesia, the guidelines for conducting ANC examination are at least 4 times during the first pregnancy in the first trimester, 1 time in the second trimester and 2 times in the third trimester, this greatly affects the monitoring of the condition of pregnant women, as in the research conducted by Cetia Regina, et. al (2014) the results of the study showed that LBW was associated with the number of ANC visits adjusted for gestational age (Cetia Regina, et.al 2014).

CONCLUSION

Based on the results of the study the correlation between the quality of ANC services and the incidence of LBW in the Public Health Center of Wates in Kulon Progo Regency with significant statistical test results (Ha accepted, Ho rejected), p-value 0.025 (OR=3.095, CI=1.234-7.706). This result means that LBW and the inadequate quality of ANC services increase the risk 3 times for the incident of LBW. Thus, the quality of ANC services can affect the incidence of LBW. With the existence of quality ANC services can prevent the occurrence of LBW. Predisposing factors and the presence of comorbidities can be recognized early in pregnancy so that maximum efforts can be made to prevent severe interference with pregnancy and the safety of the mother and baby.

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