RELATIONSHIP ANC FREQUENCY OF VISITS DURING PREGNANCY WITH NEONATAL MORTALITY

Noor Latifah A.

Abstract

This research discusses the pregnant mothers which makes a visit ANC during pregnancy with the incidence of neonatal death.Neonatal death is a health issue that still a major concern in the world.Neonatal death can be caused by various factors, both in terms of maternal factors, infant factors and health services factors. Frequency of visits ANC is part of health services which is deterrent occurrence of neonatal death if pregnant mothers are advised to follow all the antenatal care, ie a visit ANC ≥ 4 times during the three trimesters of pregnancy.This research uses cross-sectional design using multiple logistic regression analysis.This research indicate that the cause of neonatal death is the frequency of visits ANC, parity, pregnancy complications, birth weight infants, early neonatal examination.There is interaction between the frequency of visits ANC with birth weight infants that mother who did not make a visit ANC or <4 times during her pregnancy and having babies with birth weight ≥ 2500 gram had 2,6 times greater chance for the occurrence of neonatal death compared with mothers who did visit ANC ≥ 4 times during her pregnancy.This is due to neonatal mortality in infants with birth weight ≥ 2500 gram mostly infants with birth weight > 4000 gram who are at high risk for the occurrence of neonatal death,so expect to do further research on neonatal mortality to infant weight> 4000 gram.And related to the frequency of visits ANC, expected from the government to make policies more firmly on the obligations of pregnant women for pregnancy check at least 4 times in the third trimester during pregnancy.

Keywords :ANC, antenatal, birth weigth, neonatal, mortality, neonatal mortality

INTRODUCTION

Child mortality is still an important issue in the world, especially in countries that are or less developed, such as child mortality and infant mortality. Infant Mortality in Indonesia was ranked 4th among the member countries of ASEAN (Depkes& UI, 2006). Therefore, Indonesia has set a target for the Infant Mortality Rate is 32 of 1.000 live births and the Infant Mortality Rate (IMR) is 23 of 1.000 live births (Bappenas, 2010).

Infant Mortality Rate (IMR) was reduced sharply from 68 of 1.000 live births (IDHS 1990's) to 34 of 1.000 live births (IDHS 2007). However, when compared to 2002-2003, reducing infant mortality is still relatively small.

One of infant mortality rate that still need attention is the Neonatal mortality rate, especially during the first week of birth. Based on data from Demographic and Health Survey 2007, the neonatal mortality rate ranges from 19 of 1.000 live births, the rate is still relatively small when compared to the year 2002-2003 which is 20 of 1.000 live births. Based on data Riskesdas 2007, obtained 55,8% of infant deaths occur in the neonatal period and 78,5% occurred in the age of 0-6 days.

Neonatal death associated with the health status of the mother during pregnancy, the mother and family knowledge about the importance of prenatal care and the role of medical personnel as well as the availability of health facilities.

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Maternal factors largely determine the safety of the fetus during the mother in the womb until the baby was born. Factors that affect the safety of mothers baby among others such as age, parity, education, labor conditions, and references, the quality of the ANC obtained the mother during pregnancy as well as childbirth helper (Soeparmanto, 1998).

Health care can affect child survival, including antenatal care, childbirth, postpartum, and the care of babies born, childbirth and referral. Antenatal care is an effort by health care professionals for the mother during pregnancy, which is implemented according to defined service standards.

Factors Medical has an important role on the incidence of perinatal death and neonatal including the age of the mother during pregnancy are too young (<20 years old) or too old (> 35 years old), the number of children is too much (more than 4 children) and spacing pregnancies less than 2 years. Complications of pregnancy, childbirth and post-partum is the direct cause of maternal mortality, perinatal and neonatal such as vaginal bleeding (third trimester of pregnancy, childbirth and postpartum), infection, pre-eclampsia, obstructed labor and complications due to birth trauma (Depkes, 2003).

The direct causes of neonatal deaths, the majority caused by infections (pneumonia, diarrhea and tetanus) by 36% and premature birth (28%). While the indirect causes of neonatal mortality are low birth weight (LBW).

Based on several studies as stated by Ronoatmodjo (1996), Sukamti (2011) and Noviani (2011) states that one of the factors that influence the occurrence of neonatal mortality is health care during pregnancy (antenatal care). Syafruddin and Hamida (2009) states that in order to prevent the occurrence of neonatal mortality is required early detection of high risk in order to be given the necessary services. Therefore, in this study, the researchers wanted to know the relationship between frequency of antenatal care visits during pregnancy and the incidence of neonatal mortality.

METHODOLOGY

The study design used is cross sectional, which is a design study measuring the presenter factors and outcomes at a time. Examination Relations Research ANC During Pregnancy with Genesis Neonatal Mortality was conducted in May - June 2012. The study population was all infants born alive of women of reproductive age (15-49 years) who never married and never given birth.

The samples used were live-born infants who are born (aged 0-28 days) which is the last child (including a child and not stillborn, and are not twins) of all live births of women of childbearing age who are married and have given birth. So we get the number of samples in this study were 16.308 births among 16 178 infant died aged ≥ 28 days and 130 infants died at the age ≥ 28 days.

This study uses secondary data from SDKI. Data collection SDKI sourced from a sample of women aged 15-49 have been married and have given birth.

The stage of processing the data in this study consisted of data editing, coding the data, the data cleaning and analysis of data. Analysis of the data used in this research is the analysis of univariate, bivariate and multivariate analysis.

Univariate analysis is used to get an idea of the frequency distribution of the independent variables and the dependent variable, so it can be variations of each variable. Bivariate analysis using chi-square to determine the relationship between the independent variables and the dependent variable. Multivariate analysis using logistic regression to determine the relationship of more than one independent variables and the dependent variable to see where the most dominant of several independent variables on the dependent variable. Multivariate analysis consists of several stages of selection bivariate interaction test and test confounding.

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RESULT

Table 1.Distribution Frequency of Neonatal Mortality, Frequency of Visits ANC, Age Mother, Parity, Mother education level, economic status, Complications of Pregnancy, Sex Toys, Infant Birth Weight, Points of Delivery, Inspection and Auxiliary Neonatal Early Childbirth

Variable	n	%
Neonatal Mortality		
No neonatal death	16.178	99,20
Neonatal death	130	0,80
Frequency of ANC		
≥ 4 time (fulfilled)	11.754	72,08
< 4 time/ never (not fulfilled)	4.554	27,92
Age of Mother		
< 20 years old	1.234	7,57
20 – 35 years old	12.875	78,95
> 35 years old	2.199	13,48
Paritas		
1 – 2 time	9.750	59,79
≥ 3 time	6.558	40,21
Education of Mother		
University	1.277	7,83
Senior High School	4.261	26,13
Junior High School	3.680	22,57
Primary School/not schooling	7.090	43,48
Economy Status		
Economic level is very high	2.688	16,48
High economic level	2.778	17,03
Moderate economic level	2.890	17,72
Low economic level	3.304	20,26
Economic level is very low	4.648	28,50
Complications of Pregnancy		
Never	14.774	90,59
yes, once complicatios	1.534	9,41
Sex of Baby		
Female	7.760	47,58
Male	8.548	52,42
Birth Weight		
≥ 2500 gram	15.579	95,53
< 2500 gram (BLW)	729	4,47
Place of Delivery		
Helath facilities	6.322	38,77
Non-health facilities	9.986	61,23

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Early Neonatal Examination		
Yes	12.695	77,85
No	3.613	22,15
Birth Attendants		
Medical personnel	4.232	25,95
Non-medical personnel	12.076	74,05
Total	16.308	100,00

Based on research results in table 1 can be viewed the incidence of neonatal mortality at 130 neonatal deaths from 16 308 live births or neonatal mortality rate 8 of 1,000 live births. Neonatal mortality rate is obtained based on the last child, an only child, was not born to die and not twins.

In this study showed that the frequency of antenatal care visits during pregnancy had a significant relationship with the occurrence of neonatal mortality. In addition, acquired other factors cause neonatal mortality among which parity, pregnancy complications, birth weight infants, and early neonatal examination. Frequency mother ANC visit (K4) during pregnancy is obtained by 72,08%. This figure is still carried the standard expected at about 90%.

Tabel 2 Distribution of Respondents by Frequency of Visit ANC, Age of Mother, Parity, Mother's Education Level, Economic Status, Complications of Pregnancy, Sex of the Baby, Birth Weight Infants, Place of Delivery, Early Neonatal Examination, Birth Attendants with Neonatal Mortality

	Non Neonatal Mortality		Neonatal Mortality		P-Value	OR	CI 95%
	N = 16.178	%	N = 130	%			
Frequencyof ANC							
≥ 4 time (fulfilled)	11.679	99,5	75	0,5		1	
< 4 time/ never (not fulfilled)	4.499	98,9	55	1,1	0,003	2,4	1,4 – 4,3
Age of Mother							
< 20 years old	1.222	99,6	12	0,4	0,538	0,8	0,4 – 1,7
20 – 35 years old	12.783	99,4	92	0,6		1	
> 35 years old	2.173	98,8	26	1,2	0,042	2,1	1,0 – 4,2
Paritas							
1 – 2 time	9.684	99,6	66	0,4		1	
≥ 3 time	6.494	98,9	64	1,1	0,001	2,6	1,5 – 4,5
Mother's Eduacation Level							
University	1.268	99,4	9	0,6		1	
Senior High School	4.234	99,6	27	0,4	0,662	0,8	0,3 – 2,2
Junior High School	3.648	99,3	32	0,7	0,556	1,3	0,5 – 3,5

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Primary School/Not schooling	7.028	99,3	62	0,7	0,631	1,2	0,5 – 3,1
Economics Status							
Economic level is very high	2.671	99,2	17	0,8		1	
High economic level	2.759	99,5	19	0,5	0,537	0,7	0,2 – 2,1
Moderate economic level	2.864	99,4	26	0,6	0,651	0,8	0,3 – 2,1
Low economis level	3.281	99,6	23	0,4	0,132	0,5	0,2 – 1,2
Economic level is very low	4.603	99,1	45	0,9	0,772	1,1	0,5 – 2,6
Complication of Pregnancy							
Never	14.670	99,4	104	0,6		1	
Yes	1.508	98,7	26	1,3	0,018	2,3	1,2 – 4,6
Sex of Baby							
Female	7.705	99,4	55	0,6		1	
Male	8.473	99,4	75	0,6	0,901	1	0,6 – 1,8
Birth Weight							
$\geq$ 2500 gram (normal)	15.474	99,5	105	0,5		1	
< 2500 gram (BLW)	704	97,3	25	2,7	0,000	5,2	2,6 – 10,3
Place of Delivery							
Health facilities	6.274	99,4	48	0,6		1	
Non health facilities	9.904	99,3	82	0,7	0,734	1,1	0,6 – 1,9
Early Neonatal Examination							
Yes	12.604	99,5	91	0,5		1	
No	3.574	98,9	39	1,1	0,010	2,2	1,2 – 4
Birth Attendants							
Medical personnel	4.191	99,5	41	0,5		1	
Non medical personnel	11.987	99,3	89	0,7	0,481	1,2	0,7 – 2,2

There is a significant correlation between ANC visits during pregnancy and the incidence of neonatal mortality. The proportion of neonatal deaths are caused by mother did not visit ANC or <4 times during pregnancy 1,1% higher compared with mothers who ANC visits $\geq$ 4 times (0,5%).

The frequency of antenatal care visits during pregnancy have interaction with the baby's birth weight to neonatal mortality. Mothers who did not visit ANC or <4 times during pregnancy and having a baby with birth weight $\geq$ 2500 gram had a 2,6 times higher riskof experiencing neonatal mortality compared to mothers who visit ANC $\geq$ 4 times during pregnancy. This result was obtained because the baby who died at the age of neonatal group birth weight $\geq$ 2500 gram most have a birth

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weight> 4000 gram. Manuaba (2000) and Nelson (1985) in the literature mentions that the baby has a birth weight> 4000 gram have a higher risk for neonatal death.

Mothers who did not visit ANC or<4 times and have babies with birth weight <2500 gram have the opportunity to experience neonatal mortality 0,4 times lower when compared with mothers who visit ANC ≥ 4 times. These results are obtained due to the frequency of visits ANC trimester I, II and III occurred fluctuated, whereas in the second trimester has been increased to 80,1% and a decline back in the third trimester (K4) amounted to 73,5%.

Frequency of parity against women of childbearing age (15-49 years), most of the mothers who had experienced ≥ 3 times the delivery of 40,21%. While the proportion of women whose infants experiencing neonatal mortality, 1,1% had experienced childbirth ≥ 3 times compared with women who have experienced childbirth 1-2 times (0,4%). There is a significant correlation between the number of births ever experienced by the mother to the incidence of neonatal mortality. Women who have had labor ≥ 3 times had 2,4 times higher odds of neonatal death compared with women who have experienced childbirth 1-2 times.

The results of the frequency distribution in this study, illustrated that most mothers never experience complications during pregnancy (90,59%) and those who have experienced pregnancy complications 9,41%. The proportion of neonatal deaths are caused by women who have experienced pregnancy complications by 1,3% when compared with mothers who have never experienced pregnancy complications (0,6%).

There is a significant correlation between the incidence of pregnancy complications with neonatal mortality. Mothers who have a history of complications during pregnancy have an opportunity as much as 2,3 times higher for neonatal death compared with women who had never experienced in neonatal mortality.

Most babies born had birth weight ≥ 2500 gram is equal to 95,53%. The proportion of neonatal deaths were caused by the baby having a low birth weight (LBW) by 2,7% compared with birth weight ≥ 2500 gram.

Birth weight had a significant relationship with the occurrence of neonatal mortality. In addition, there is an interaction between birth weight infants with the frequency of visits ANC against neonatal death.

Mothers who have babies with birth weight < 2500 gram and ANC visit ≥ 4 times during pregnancy had 8,6 times higher chance of experiencing neonatal mortality compared to mothers who had babies with birth weight ≥ 2500 gram. This might be because the mother just a visit, but do not follow the advice or instructions of antenatal care workers, resulting in the birth of prematurity that causes birth weight < 2500 gram although mother ANC visit ≥ 4 times for three trimesters.

Mothers who have babies with birth weight <2500 gram and no ANC visit or <4 times during pregnancy has a chance of 1,2 times higher chance of developing neonatal mortality compared to mothers who had babies with birth weight ≥ 2,500 gram. This can be due to a decline in ANC visits in the third trimester of 6.6% from the second trimester. So the detection of conditions such as the baby's weight babies in the womb during the third trimester undetectable because the mother did not visit ANC. These results prove that mothers who had babies with birth weight <2500 gram and no ANC visit or <4 times during pregnancy have the opportunity to experience neonatal mortality.

The frequency distribution of infants receiving early neonatal examination is 77,85% and infants who did not receive early neonatal examination amounted to 22,15%. The proportion of neonatal deaths caused by babies who did not receive early neonatal examination by 1,1% compared to infants who received early neonatal examination (0,5%).

There is a significant relationship between early neonatal examination with the incidence of neonatal death. Mothers who do not carry out checks on the early neonatal infant / newborn baby does not get the primary care physician has the opportunity to experience the neonatal death by 1,59 times higher compared to women who undergo early neonatal examination on the baby / newborn who get early neonatal examination.

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CONCLUSION

The frequency of antenatal care visits during pregnancy, maternal age (≥ 35 years), parity, history of pregnancy complications, examination of early neonatal and infant birth weight had a significant relationship with the occurrence of neonatal mortality.

Mothers who did not visit ANC or <4 times during pregnancy and having a baby with birth weight ≥ 2500 gram had 2,6 times higher odds of experiencing neonatal mortality compared to mothers who visit ANC ≥ 4 times during pregnancy.

Mothers who did not visit ANC or <4 times and have babies with birth weight <2500 gram have the opportunity to experience neonatal mortality by 0,4 times lower when compared with mothers who visit ANC ≥ 4 times.

Mothers who have experienced childbirth ≥ 3 times had 2,4 times higher odds of neonatal death compared with women who have experienced childbirth 1-2 times.

The occurrence of neonatal mortality in mothers who have a history of pregnancy complications had 2,3 times higher odds compared to mothers who never had pregnancy complications. This proves that the mother has a history of complications during pregnancy, has an important role for the occurrence of neonatal death.

Mothers who have babies with birth weight < 2500 gram and ANC visit ≥ 4 times during pregnancy had 8,6 times higher odds compared with mothers who had babies with birth weight ≥ 2500 gram. Opportunities to experience neonatal mortality in mothers who had babies with birth weight <2500 gram and no ANC visit or <4 times during pregnancy by 1,2 times higher compared with mothers who had babies with birth weight ≥ 2500 gram.

Babies who do not get early neonatal examination after birth, had 1,59 times the chance of neonatal death compared with infants who did not receive early neonatal examination after birth.

To overcome these problems required policies and seriousness of the government related to antenatal care. This policy can be a liability in pregnant women to ANC visit at least 4 times for three trimesters of pregnancy.

Conduct further research is required to include the type of antenatal care, so expect this advanced research could provide more adequate picture of the relationship between antenatal care with neonatal mortality. In addition, the need for further studies to determine the relationship between the baby having a birth weight> 4000 gram with the incidence of neonatal death, it is because newborns whose weight> 4000 gram at high risk with the incidence of neonatal mortality.

REFRENCES

Depkes, & UI, F. (2006). Materi Ajar Upaya Penurunan Kematian Ibu dan Bayi Baru Lahir. Jakarta.

Depkes. (2003). Rencana Strategis Nasional Making Pregnancy Safer (MPS) di Indonesia 2001-2010. Jakarta: Depkes Direktorat Binkesga.

Manuaba, I. B. (2000). Kapita Selekta Penatalaksanaan Rutin Obstetri Ginekologi dan KB. Jakarta: Penerbit Buku Kedokteran EGC.

Nelson, Behrman, Kliegman, & Arvin. (1985). Ilmu Kesehatan Anak. Jakarta: Penerbit Buku Kedokteran EGC.

Noviani. (2011). Hubungan Berat Bayi Lahir Rendah (BBLR) dengan Kejadian Kematian Neonatal Dini di Indonesia Tahun 2010 (Analisis Data Riskesdas 2010). Tesis Fakultas Kesehatan Masyarakat, Program Pascasarjana Universitas Indonesia.

Ronoatmodjo, S. (1996). Faktor Risiko Kematian Neonatal di Kec. Keruak NTB 1992-1993. Disertasi FKMUI.

Soeparmanto. (1998). Faktor-faktor yang Mempengaruhi Perilaku Perawatan Kehamilan (Antenatal Care) Ibu Hamil. Majalah Kesehatan Masyarakat Indonesia, Tahun xxvi No.5, 17-20.

Sukamti, S. (2011). Pengaruh Pelayanan Kesehatan Terhadap Kematian Neonatal Anak Terakhir di Indonesia Analisis Data Riskesdas 2010. Tesis Fakultas Kesehatan Masyarakat, Program Pascasarjana Universitas Indonesia.

Syafruddin, & Hamidah. (2009). Kebidanan Komunitas. Jakarta: Penerbit Buku Kedokteran EGC.