

# Analysis of Individual Factors on Mother's Behavior in the First Neonatal Visit (KN1) in 8 Provinces in Indonesia

<sup>1</sup>Triseu Setianingsih\*

<sup>1</sup>Institut Medika drg. Suherman (IMDS), Jl. Raya Industri Pasirgombong Jababeka, Cikarang Bekasi Jawa Barat Indonesia

Corresponding Author. Email: triseu.pantyarso@imds.ac.id

## ABSTRACT

Most of the neonatal deaths that occur after 6-48 hours postpartum can be prevented with appropriate newborn care and started immediately after delivery through adequate and standardized first neonatal visits (KN1) (WHO, 2012). However, the KN1 coverage in Indonesia is still not in accordance with the expected target. This study aims to analyze the factors that influence the behavior of mothers in conducting the First Neonatal Visit (KN1) in 8 provinces in Indonesia. This research is a quantitative study with cross sectional method. The sample used in this study were 1014 infant mothers in 8 provinces in Indonesia. Data analysis was performed through univariate, bivariate, and multivariate analysis with the Logistic Regression Test. The statistical test results showed that of the 6 variables studied, there were 3 variables that had a P value <0.05, namely Childbirth Assistance (P. Value = 0.000, OR = 3.270 with CI 2.272 - 4.705), Place of delivery (P. Value = 0.000, OR = 1.799 with CI = 1.384 - 2.338) and pregnancy counseling (P. value = 0.001, OR = 1.625 with CI = 1.222 - 2.162). The final model equation formed is:  $KN1 \text{ logit} = -1,300 + 1,100 * \text{birth attendant} + 0.304 * \text{pregnancy counseling} + 0.073 * \text{maternal education}$ . The conclusions in this study were: The most dominant factor was birth attendant with OR = 3.005 at 95% CI (2.075 - 4.353). Mothers who give birth in health workers 3,005 have a greater chance of having the first neonatal visit (KN1) after controlling for the variables of pregnancy counseling and education. It is hoped that all people and health workers to optimize the role of midwives in assisting childbirth and efforts for pregnant women to get quality pregnancy counseling in which it is directed and motivated to continue to carry out neonatal examinations, especially during the 6-48 hours after birth.

**Keywords:** First neonatal visit (KN1), birth attendant, place of delivery, satisfaction with health services, Complete pregnancy check-up, pregnancy counseling, Mother's Education

## 1. INTRODUCTION

The First Neonatal Visit is important because the neonatal period is a critical period where the incidence of morbidity and mortality occurs in the neonatal period, especially in the first 6-48 hours. Most of the neonatal deaths occurred in this period, 25-45% in the first 24 hours and more than 50% in the first 48 hours (WHO, 2012). Most of the neonatal deaths that occur after 48 hours postpartum can be prevented with proper newborn care starting immediately after delivery (WHO, 2012). This can be pursued through adequate and standardized First Visit Neonatal services.

From Riskesdas data, 2013 the achievement of neonatal visit indicators in the first 6-48 hours (KN1) was still below the expected target, and there was even a decrease in the KN1 achievement from Riskesdas 2010, namely 71.4% to 71.3% in Riskesdas 2013. Even those who did not attend neonatal visits increased quite high from 20.8% of Riskesdas in 2010 to 21.5% in Riskesdas in 2013.

But there was an increase neonatal Visits (KN1) in Riskesdas 2018 to 81.4% (Riskesdas, 2018).

Apart from the problem of access to KN1 which is still low, the implementation of quality KN1 is still not in accordance with the expected target. If these services are fully implemented according to standards, then neonatal health problems can be immediately identified and handled so that the risk of neonatal death can be reduced. However, in reality, quality health services are still not implemented properly, therefore the existing data in the facility based still needs to be balanced and verified with existing data in the community based to assess whether quality services have been fully implemented according to standards or not.

Based on the background description that has been submitted, the research problems that can be formulated are:

1. The decline in neonatal mortality rates in Indonesia has been slow, from 20 per 1,000 live births in the 2007 IDHS to 19 per 1,000 live births in the 2012 IDHS (2012 IDHS), of the total infant mortality, 55.8% occurred in

the neonatal period and around 78 , 5% occurred at the age of 0-6 days (Risksedas 2012)

- The causes of neonatal mortality can actually be reduced by efforts to standardize neonatal health services through the first neonatal visit (KN1), however, based on several research results, both access and quality have not been achieved according to target.

This study aims to analyze the influence of maternal factors which include birth attendants, place of delivery, satisfaction with health services, complete pregnancy examinations, pregnancy counseling and education on maternal behavior in conducting the first neonatal visit (KN1) in 8 provinces in Indonesia.

**2. METHOD**

This type of research is a quantitative study with a cross sectional design. The number of samples was 1014 infant mothers with the sampling technique carried out by multistage sampling techniques, namely the sampling technique carried out in stages, starting from determining the province, selecting the district, selecting the health center, selecting the village and selecting the sample of mother babies. Samples taken From the 33 existing Provinces, 8 were selected which were considered to represent these conditions, that is : East Nusa Tenggara,

South Sumatra, West Kalimantan, Southeast Sulawesi, North Maluku, East Java and Banten. Technique of data

analysis was performed through univariate analysis, bivariate analysis with Chi Square test and multivariate analysis with Logistic Regression Test.

**3. RESULT**

**1. Description of Mother Behavior in the First Neonatal Visit (KN1)**

From the research results, it was found that there were more mothers who did not make the first neonatal visit (KN1) as many as 532 people (52.3%) compared to mothers who did the first neonatal visit (KN1), which was 482 people (47.5%).

**2. Univariate analysis overview**

**Table of Frequency Distribution of individual variables of mothers in 8 provinces in Indonesia**

No	Category	(f)
1	Birth Attendant	
	1. Health workers	835 ( 82.3%)
	2. Not Health workers	179 (17.7%)
	Total	1.014 (100)
2	Place of delivery	
	1. Health services	653 (64.4%)
	2. Not health services	361 (35.6%)
	Total	1.014 (100%)
3	Satisfaction with health services	
	1. Satisfied	967 (95.4%)
	2. Less Satisfied	47 (4.6%)
	Total	1.014 (100%)
4	Complete Pregnancy examination (K4)	
	1. Complete	7 (0.7%)
	2. Not complete	1007 (99.3%)
	Total	1.014 (100%)
5	Pregnancy counseling	
	1. Obtain	748 (73.8%)
	2. Not getting	266 (26.2%)
	Total	1.014 (100%)
6	Mother's education	
	1. Low education	649 (64.0%)
	2. Middle-high Education	365 (36.0%)
	Total	1.014 (100%)

From the table, it is known that the most women who gave birth assisted by health workers were 835 mothers (82.3%), the most gave birth at health service facilities, namely 653 mothers (64.4), the most were satisfied with health services, namely 967 mothers (95.4%) , at most did not complete a complete antenatal care (K4), namely 1007 mothers (99.3%), the most mothers received pregnancy counseling as many as 748 mothers (73.8%) and the most mothers had low education, namely 649 mothers (64%).

**3. Bivariate Analysis Overview**

**Table of results of bivariate analysis for level 1 variables with the First Neonatal Visit (KN1) in 8 provinces in Indonesia.**

No	Independent Variables	First Neonatal Visit (KN1)					
		Not Doing		Doing			
		F	%	F	%	F	%
1	Birth Attendant						
	<b>P. Value = 0.0000</b>						
	<b>OR=3.270 (2.272-4.705)</b>						
	0. Health workers	134	74.9	45	25.1	179	100
	1. Not Health workers	398	47.7	437	52.3	835	100
	Total	532	52.2	482	47.5	1.014	100
2	Place of delivery						
	<b>P. Value = 0.000</b>						
	<b>OR = 1.799 (1.384-2.338)</b>						
	0. Health services	223	61.8	138	38.2	361	100

	1. Not health services	309	47.3	344	52.7	653	100
	Total	532	52.2	482	47.5	1.014	100
3	Satisfaction with health services						
	<b>P. Value = 0.370</b>						
	<b>OR= 1.354 (0.746-2.457)</b>						
	0. Satisfied	28	59.6	19	40.4	47	100
	1. Less Satisfied	504	52.1	463	47.9	967	100
	Total	532	52.2	482	47.5	1.014	100
4	Complete Pregnancy check up (K4)						
	<b>P. Value = 0.099</b>						
	<b>OR= 6.69 (0.803-55.797)</b>						
	0. Complete	531	52.7	476	47.3	1007	100
	1. Not complete	1	14.3	6	85.7	7	100
	Total	532	52.2	482	47.5	1.014	100
5	Pregnancy counseling						
	<b>P. Value = 0.000</b>						
	<b>OR = 1.625 (1.222 -2.162)</b>						
	0. Obtain	163	61.3	103	38.7	266	100
	1. Not getting	369	49.3	379	50.7	748	100
	Total	532	52.2	482	47.5	1.014	100
6	Mother's education						
	<b>P. Value = 0.067</b>						
	<b>OR= 1.283 ( 0.992-1.658)</b>						
	0. Low education	355	54.7	294	45.3	649	100
	1. Middle-high Education	177	48.5	188	51.5	365	100
	Total	532	52.2	482	47.5	1.014	100

From the results of the bivariate analysis, it is known that the percentage of mothers who assisted in labor by health workers and did performed Visited KN1 had a higher percentage (52.3%) than mothers whose birth attendants were not by health personnel and performed KN1 (25.1%). The results of the Chi Square test showed that the P value was  $0.000 < 0.05$ , which means that there was a significant relationship between birth attendants and KN1. OR shows a value of 3.270, meaning that mothers whose birth attendants are not assisted by health workers are 3,270 times more likely to not bring their babies to do KN1.

Based on the variable of place of delivery, the percentage of women who gave birth in health services and did KN1 had a higher percentage (52.7%) than mothers who gave birth without health services and did KN1 (38.2%). The results of the Chi Square test showed that the P. value was  $0.000 > 0.05$ , meaning that there was a significant relationship between the place of delivery and the first neonatal visit (KN1). The OR value of 1.799 means that mothers who give birth in non-health services are 1.799 times more likely to not do KN1 compared to mothers who give birth in health services.

Based on satisfaction with health services, the percentage of mothers who were satisfied with health services and carried out KN1 had a higher percentage (47.9%) than mothers who were dissatisfied and did KN1 (40.4%). The results of the Chi Square test showed that P. value was  $0.370 > 0.05$ , meaning that there was no significant relationship between satisfaction with health services and the first neonatal visit (KN1).

Based on the variable of complete antenatal care, the group of women whose complete antenatal care was appropriate and performed KN1, the percentage was higher (85.7%) than that of mothers whose complete antenatal care was less appropriate and performed KN1 (47.3%). The results of the Chi Square test showed that P. value was  $0.099 > 0.05$ , meaning that there was no significant relationship between complete pregnancy examination and the first neonatal visit (KN1).

Based on the pregnancy counseling variable, the percentage of women who received pregnancy counseling in the 3rd trimester and did performed visited KN1 had a higher percentage (50.7%) than those who did not receive pregnancy counseling in the 3rd trimester and did KN1 (38.7%). The results of the Chi Square test showed that P. value was  $0.001 < 0.05$ , meaning that there was a significant relationship between 3rd trimester pregnancy counseling and the first neonatal visit (KN1). OR shows a value of 1.625, meaning that mothers who do not get pregnancy counseling in the third trimester are 1.625 times more likely to not bring their babies to do KN1.

Based on the maternal education variable, the group of mothers with medium-high education and their babies did more KN1 (51.5%) than mothers who had low education (45.3%). The results of the Chi Square test showed that P. value was  $0.067 > 0.05$ , meaning that there was no significant relationship between maternal education and KN1.

**4. Multivariat Modelling**

**Table of Multivariate final modeling KN1**

No	Variabel	Coef	SE	Sig	OR	95%CI		
							Lower	Upper
1	Birth attendant	1.100	0.189	0.000	3.005	2.075 - 4.353		
2	Pregnancy Councelling			0.304	0.152	0.045 - 1.355	1.007	1.824
3	Mother's education			0.073	0.067	0.277 - 1.076	0.943	1.228

The final model equation that is formed is:  $\text{Logit KN1} = -1,300 + 1,100 * \text{birth attendant} + 0.304 * \text{pregnancy counseling} + 0.073 * \text{maternal education}$ . Interpretation of OR: The most dominant factor was birth attendant with OR = 3.005 at 95% CI (2.075 - 4.353). Mothers who give birth who are not in health personnel are 3,005 more likely to not have the first neonatal visit (KN1) after controlling for the variables of pregnancy counseling and education. In this test, the model formed is a fit model (seen from P. Value model on the omnibus test of model coefficient <0.05) so that it can predict the performance of KN1 at the health center level. The ability of the model that was formed was 56.9%, this means that the variables of birth attendance and pregnancy counseling variables could predict the variable of maternal behavior in conducting the first neonatal visit (KN1) by 56.9%.

From the Negelkerke R Square value, the result is 0.66, which means that the variable birth attendance and pregnancy counseling can explain the variation in the implementation of KN1 by 66%.

**4. DISCUSSION**

The first Neonatal Visit (KN1) uses the Integrated Management of Young Infants (MTBM) approach to ensure the baby is in good health which includes: ( Ministry Of Health, 2018)

1. Umbilical cord care
  2. Implement exclusive breastfeeding
  3. Make sure the baby has been given Vitamin K1 injection
  4. Ensure that the baby has been given Antibiotic Eye Ointment
  5. Giving Hepatitis B-0 immunization
- In addition, specifically for young infants, the examination uses the MTBM approach:
1. Examination of danger signs such as possible bacterial infection, jaundice, diarrhea, low body weight and breastfeeding problems.
  2. Giving Hepatitis B0 immunization if it has not been given at the time of care for newborns
  3. Counseling mothers and families to exclusive breastfeeding, preventing hypothermia and carrying out care for newborns at home using the MCH Handbook.
  4. Handling and referral of cases if necessary

It is very important for neonates to detect as early as possible signs and symptoms of neonatal emergencies that have an impact on death. The delivery process, which is carried out by health workers, provides benefits in the process of caring for mothers and their babies after birth. In accordance with the procedures and standards of midwifery services for postpartum mothers and neonates, a health worker has an obligation to be able to condition that the next

t-birth period, especially the first 6 - 48 hours the neonate a safe condition, and avoids the risk of neonatal gencies, this is done through a follow-up process, ely the first neonatal visit (KN1) which was carried out er actively through home visits by health personnel or ugh the process of neonatal visits to health facilities.

Delivery assistants by health personnel in several rch results show a positive contribution in reducing rnal and child morbidity and optimizing health services e following period (Ministry of Health, Republic of Indonesia, 2015). In addition, with the delivery process in health personnel, the signs of danger for neonates can be known more quickly and get follow-up treatment more quickly.

The low coverage of deliveries assisted by health workers can be influenced by many factors, according to Prabowo (2010) stating that birth attendants by traditional healers are partly due to the community's tradition of believing in traditional healers and affordability which is also influenced by geographic and socioeconomic factors.

Maternal and neonatal complications and deaths often occur during childbirth, therefore intervention is emphasized on assisting delivery activities through safe delivery by health personnel (MOH, 2010). Every pregnant woman is expected to use health workers such as doctors, midwives and nurses in childbirth assistance, by choosing health workers as birth attendants, mothers will receive services in accordance with germ-free principles and standard service procedures. If complications are found in childbirth, the mother will get proper help. In addition, with the deliveryprocess in health personnel, the signs of danger for neonates can be known more quickly and get follow-up treatment more quickly.

A healthy and safe postpartum mother will have a positive impact on the care of her neonates, the mother will be better able to care for and give priority to the health of her neonate because her condition is healthy and allows her to take her child to a health service facility / health worker for the first Neonatal Visit (KN1).

In addition to delivery in health personnel, the counseling process during the 3rd trimester of pregnancy also determines the first neonatal visit (KN1), this is because during the 3rd trimester visit, the counseling material is more focused on preparation for delivery with 5 steps of preparation and preparation for the presence of a baby (neonate). and what things must be prepared, including:

1. Make a birth plan
2. Make a plan for decision making
3. Prepare the transportation system in case of an emergency
4. Creating a savings plan / pattern
5. Prepare the necessary steps for labor

In addition, the counseling material in the 3rd trimester also concerns the preparation for baby birth and welcoming newborns and the conditions that must be prepared if the baby is born, including the health needs and services that the baby must receive after birth through the first neonatal visit (KN1).

According to the theory of the Health Beliefe Model

developed by Rosenstock (1950) in Notoatmodjo (2012), the possibility of an individual to take appropriate action for healthy / sick behavior is influenced by: (1) beliefs about the individual's vulnerability to illness; (2) belief about the seriousness or malignancy of the disease; (3) beliefs about benefits; and (4) signs or action instructions. Contact between health workers during delivery and pregnancy through the pregnancy counseling process will provide a bridge for the health service process in the next phase, namely in terms of neonatal health services. Positive perceptions during pregnancy and childbirth counseling and good communication between health workers and mothers in labor will increase the interest of mothers to use health workers in maintaining the health of their neonates.

The perception of this benefit is very important because this perception will give confidence to a mother that the benefits that she has received from health services from health workers will be greater than the various obstacles she has encountered.

Information from health workers during pregnancy and childbirth counseling will encourage mothers to come back to see health workers when examining their babies, namely through the first neonatal visit (KN1).

In a study conducted by Purwaningsih, Dewi in 2007 on the influence of interpersonal communication / pregnancy and childbirth counseling on knowledge, attitudes and behavior in choosing birth attendants in the Cigondewah Community Health Center, Bandung City, interpersonal communication / counseling increases knowledge and attitudes about safe pregnancy and childbirth, although Through experimental tests, the behavior of seeking childbirth assistance to health workers in the treatment group did not show a significant difference.

The researcher believes that the service standard at the time of antenatal care must be applied where the officer must carry out counseling to pregnant women in accordance with existing standards. Effective counseling will have a positive impact on the attitudes of pregnant women in choosing the right delivery by health workers and First Neonatal Visit (KN1).

## 5. CONCLUSION

1. From the equation the final model is formed:  

$$\text{Logit KN1} = -1,300 + 1,100 * \text{birth attendant} + 0.304 * \text{pregnancy counseling} + 0.073 * \text{maternal education}$$
 this indicates that to optimize KN1 is through pregnancy counseling and trimester 3 and delivery in health personnel.
2. The delivery process carried out by health personnel, provides benefits in the process of caring for mothers and their babies after birth. In accordance with the procedures and standards of midwifery services for postpartum mothers and neonates, a health worker has an obligation to be able to condition that the next post-birth period, especially the first 6 - 48 hours the neonate is in a safe condition, and avoids the risk of neonatal emergencies, this is done through a follow-up process, namely the first neonatal visit (KN1) which was carried out either actively through home visits by health personnel or through the process of neonatal visits to health facilities.
3. Effective counseling will have a positive impact on the attitudes of pregnant women in choosing the right delivery by health personnel. In addition, information about the condition of the newborn, danger signs and the postnatal follow-up care process will provide positive knowledge and perceptions about the first neonatal visit (KN1)

## ACKNOWLEDGMENT

Researchers would like to thank the Directorate of Nutrition and Maternal and Child Health, Ministry of Health for allowing researchers to use the data from the Monitoring and Evaluation of Nutrition and Maternal and Child Health to be used as a source of research data.

## REFERENCES

- [1] Kemenkes RI, 2010. *Rencana Strategis Kementerian Kesehatan Tahun 2010-2014*. Jakarta: Kementerian Kesehatan RI
- [2] Kemenkes RI, Balai Penelitian dan Pengembangan Kesehatan Kementerian Kesehatan, 2013, Riset Kesehatan Dasar Tahun 2013. Jakarta: Kementerian Kesehatan RI
- [3] UNICEF Indonesia. 2012. *Ringkasan Kajian Kesehatan Ibu dan Anak*.
- [3] Wagstaff, Adam. 2004. *Child Health: Reaching the Poor*. American Journal of Public health. 2004. Vol.94 N0.5 Pg.726-734
- [4] WHO, *Health System Strengthen Framework*, 2010. Diakses pada [http:// www.theglobalfund.org/documents/civilsociety/CSS\\_Framework.pdf](http://www.theglobalfund.org/documents/civilsociety/CSS_Framework.pdf).
- [5] Zeithaml, Valerie A. and Bitner, Mary Jo. 2003. *Service Marketing*. McGraw Hill Inc, Int'l Edition. New York