

# The Relationship of Mother's Knowledge, Corner Care, and Education With the Time of Numbers Droping in Newbirth Babies at Surya Adi Poskesdes in 2021

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## ABSTRACT

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Infant mortality has a close relationship with the quality of delivery services, less than optimal handling of newborns (BBL). The main causes of newborn mortality in 2018 are asphyxia as much as 23%, infection as much as 36%, and premature as much as 28%. To determine the relationship between knowledge, umbilical cord care, and length of umbilical cord detachment in newborns. This study used an analytical survey method using a cross sectional approach. The population is 32 mothers who have babies aged 0 to 6 months at Poskesdes Surya Adi Village, Mesuji District, OKI Regency. Samples were taken using a total sampling technique of 32 samples, using univariate and bivariate analysis. The results of the univariate analysis of 32 respondents who had babies aged 0 to 6 months who experienced fast umbilical cord detachment 20 respondents (63%) experienced normal umbilical cord detachment 11 respondents (34%) and length of umbilical cord detachment 1 respondent (3%). The results of bivariate analysis showed that there was a relationship between mother's knowledge and the length of umbilical cord detachment in newborns ( $p=0.000$ ), there was no relationship between umbilical cord care methods and the length of umbilical cord detachment in newborns ( $p = 0.008$ ), there was no relationship between history of counseling (IEC) with length of umbilical cord detachment in newborns ( $p = 0.007$ ). There is a relationship between mother.

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## 1. Introduction

The infant and child mortality rate reflects the level of health development of a country and the quality of life of the community. This figure is used to monitor and evaluate population and health programs and policies. Indonesia's health programs have focused on ending newborn and under-five mortality, the whole country is trying to reduce the Infant and Toddler Mortality Rate to 12 per 1000 live births. This is stated in the formulation of the Sustainable Development Goals (SDGs) [1].

Umbilical cord infection as one of the causes of death, can actually be avoided with good umbilical cord care, adequate knowledge about how to care for the umbilical cord and sufficient information [2], good and correct umbilical cord care will have a positive impact, namely the umbilical cord will separated on day 5 and day 7 without any complications, while the negative impact of improper umbilical cord care is that the baby will experience neonatal tetanus [3].

The factors that influence the length of time the umbilical cord is detached include: how to

care for the umbilical cord, research shows that the umbilical cord that is cleaned with water, soap and covered with sterile gauze tends to fall off faster than the umbilical cord that is cleaned with alcohol. [4]. Humidity of the umbilical cord, the umbilical cord should not be tightly closed with anything, because it will make it damp. In addition to slowing the release of the umbilical cord, it also poses a risk of infection. Sanitary conditions of the environment around the neonate, Spore C. tetani that enters through the umbilical cord wound [5]. The emergence of infection in the umbilical cord, due to actions or treatments that do not meet hygiene requirements, for example cutting the umbilical cord with unsterilized bamboo/scissors, or after cutting the umbilical cord with ash, soil, oil from leaves,

Based on data from the South Sumatra Provincial Health Office in 2017, the number of infant deaths was 98 people and in 2018 the number of infant deaths was 51 out of a total of 161,210 live births. Where the infant mortality rate due to umbilical cord infection is 4 people[7].

The number of infant deaths in Ogan Komering Ilir Regency in 2020 is 5 per 2,409 live births. The main cause of newborn deaths is asphyxia or respiratory failure (OKI District Health Office 2021)[8].

Based on the results of the research by Wiwid Ria Trijayanti et al, (2017) with the title of the difference between closed and open umbilical cord care on the length of umbilical cord detachment at the Srondol Health Center and the Ngesrep Health Center in Semarang City, it showed that the average length of time for umbilical cord removal with the open umbilical cord treatment method was 98 ,7 hours (4 days 2.7 hours), while for closed umbilical cord care is 170.6 hours (7 days 2.6 hours). The length of umbilical cord release with the intervention of the open method is faster than the closed method [9].

Based on the research by Dessy Rossiani and Regina VT Novita (2020) about the difference between umbilical cord detachment with open treatment and gauze, it was stated that based on statistical tests the t value (p value/sig) in open treatment was  $0.000 < 0.05$  while in treatment with gauze (p value/sig). sig  $0.339 > 0.05$ . Proof of the effect of length of release on open treatment on umbilical cord detachment using gauze by looking at the results of (gauze)  $-0.691 < (\text{open}) 1.494$ . Because treatment with gauze is away from 1.0, open umbilical cord treatment affects the length of umbilical cord detachment [10].

Based on the above phenomenon, researchers are interested in conducting research to find out "The Relationship of Mother's Knowledge, Umbilical Cord Care and Counseling With the Length of Umbilical Cord Detachment in Newborns at Surya Adi Poskesdes in 2021".

## 2. Methods

This study uses a quantitative study using a cross sectional research design, the study was conducted on August 2021, the sample of this study was a total sampling of mothers who had babies aged from 0 to 6 months Active at the Village Health Post Jalan Lintas Timur Sumatra block F Surya Village Adi Mesuji District, Ogan Komering Ilir Regency, the number of samples in this study was 32 people.

## 3. Results and Discussion

### 3.1 Research result

#### a. Univariate Analysis

TABLE 1.

FREQUENCY DISTRIBUTION OF LENGTH OF UMBILICAL CORD DETACHMENT IN NEWBORNS AT POSKESDES SURYA ADI VILLAGE IN 2021

No	Length of time to remove the umbilical cord	N	%
1.	Fast	20	62.5
2.	Normal	11	34.4
3.	Long	1	3.1
	Amount	32	100

Based on table 1. above, it can be concluded that of the 32 respondents, the majority or as many as 20 respondents (62.5%) answered quickly to the length of the umbilical cord

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detachment and 11 respondents (34.4%) answered normal to the length of umbilical cord detachment, while 1 respondent (3.1%) answered the length of time for the length of umbilical cord detachment.

**TABLE 2.**  
FREQUENCY DISTRIBUTION OF MOTHER'S KNOWLEDGE IN POSKESDES  
SURYA ADI VILLAGE IN 2021

No	Mother's Knowledge	N	%
1.	Well	31	96.9
2.	Not enough	1	3.1
	Amount	32	100

Based on table 2. above, it can be concluded that of the 32 respondents, the majority or 31 respondents (96.9%) have good knowledge compared to having less knowledge as much as 1 respondent (3.1%).

**TABLE 3.**  
DISTRIBUTION OF THE FREQUENCY OF NEWBORN UMBILICAL CORD CARE AT POSKESDES  
SURYA ADI VILLAGEYEAR 2021

No	Umbilical Cord Care	N	%
1.	Open	6	18.8
2.	Closed	26	81.2
	Amount	32	100

Based on table 3. above, it can be concluded that of the 32 respondents, the majority or as many as 26 respondents (81.2%) underwent closed umbilical cord care compared to 6 respondents (18.8%) who performed open umbilical cord care.

**TABLE 4.**  
DISTRIBUTION OF COUNSELING FREQUENCY AT POSKESDES  
VILLAGE SURYA ADI IN 2021

No.	Counseling (KIE)	N	%
1.	Open behavior	22	68.8
2.	Closed behavior	10	31.2
	Amount	32	100

Based on table 5.4. above it can be seen that of the 32 respondents who have mothers who have babies aged 0 to 6 months, the majority of mothers or as many as 22 respondents (68.8%) experienced changes in open behavior and a minority of mothers or as many as 10 respondents (31.2%) experienced changes in behavior closed.

## b. Bivariate Analysis

**TABLE 5.**  
THE RELATIONSHIP OF MOTHER'S KNOWLEDGE WITH LENGTH OF DISCONNECTION CENTER FOR NEWBORNS AT POSKESDES SURYA ADI  
VILLAGE IN 2021

No	Penlatek	Length of time to remove the umbilical cord				Long	Tbrain	P Value	OR				
		Fast		Normal									
		n	%	n	%								
1	Well	20	64.5	11	35.5	0	0	31	100				
2	Not enough	0	0	0	0	1	100	1	100	0.00 944,000			
	Tbrain	60	-	17	-			32	100				

Based on table 5 above, it can be seen that of the 31 respondents who had good knowledge of the mother, there were 20 respondents (64.5%) experienced fast umbilical cord detachment,

there were 11 respondents (35.5%) experienced normal umbilical cord detachment and 0 respondents (0%) experienced a long umbilical cord detachment. While 1 respondent (100%) knowledgeable mothers had less experience of long umbilical cord detachment. The results of the statistical test explained that chi-square ( $\chi^2$ ) = 32.436 and value  $0.00 < (0.05)$  so there was a significant or significant relationship between mother's knowledge and the length of umbilical cord separation in newborns. The result of the analysis of the odds ratio (OR) is 2. This shows that mothers with good knowledge have 2 times the chance of getting the umbilical cord removed faster than mothers with less knowledge.

**TABLE 6.**  
RELATIONSHIP BETWEEN UMBILICAL CORD CARE AND LENGTH OF UMBILICAL CORD DETACHMENT IN NEWBORNS AT THE SURYA ADI VILLAGE HEALTH POST IN 2021

No	Cord Care	Length of time to remove the umbilical cord				Long		Tbrain	P Value	OR
		Fast		Normal		n	%			
1	Open	4	66.6	1	16.7	1	16.7	6	100	
2	Closed	16	61.5	10	36.5	0	0	26	100	0.08 2.5
	Tbrain	20	-	11	-			32	100	

Based on Table 6 above, it can be seen that of the 6 respondents for open umbilical cord care, there were 4 respondents (66.6%) experiencing fast umbilical cord detachment, 1 respondent (16.7%) normal and 1 respondent (16.7%) long. Meanwhile, from 26 respondents who had closed umbilical cord care, 16 respondents (61.5%) experienced fast umbilical cord detachment, 10 respondents (38.5%) were normal and 0 respondents (0%) were old. The results of statistical tests using chi-square ( $\chi^2$ ) = 5.028 and value  $0.08 > (0.05)$  so there is no significant or significant relationship between the length of umbilical cord detachment and umbilical cord care. The result of the analysis of the odds ratio (OR) is 2.5. This shows that the umbilical cord treatment with the open method has a 2.5 times faster chance of removing the umbilical cord than the closed cord treatment.

**TABLE 7.**  
THE RELATIONSHIP BETWEEN COUNSELING AND LENGTH OF UMBILICAL CORD DETACHMENT FOR NEWBORNS AT THE SURYA ADI VILLAGE HEALTH POST IN 2021

No	Counseling (IEC)	Length of time to remove the umbilical cord				Long		Tbrain	P Valu	OR
		Fast		Normal		n	%			
1.	Open behavior	12	54.5	10	45.5	0	0.0	22	100	
2.	Closed behavior	8	80.0	1	10.0	1	10.0	10	100	0.07 0.15
	Tbrain	20	-	11	-			32	100	

Based on table 5.7 above, it can be seen that of the 22 respondents in counseling with an open behavioral response, there were 12 respondents (54.5%) experiencing fast umbilical cord detachment, there were 10 respondents (45.5%) normal and no 0 respondents (0%) long. Meanwhile, out of 10 respondents in counseling with closed behavioral responses, 8 respondents (80.0%) experienced fast umbilical cord detachment, 1 respondent (10.0%) was normal and 1 respondent (10%) was long. The results of statistical tests using chi-square ( $\chi^2$ ) = 5.427 and n value  $0.07 > (0.05)$  so there is no significant or significant relationship between the length of umbilical cord separation and counseling. The result of the analysis of the odds ratio (OR) is 0.15. This shows that counseling with an open behavior change response has a 0.

### 3.2 Discussion

#### a. The Relationship of Knowledge with the Length of Umbilical Cord Detachment in Newborns

Based on research conducted at the Poskesdes, Surya Adi village, Mesuji district, Ogan Komering Ilir 2021, in a bivariate manner, the relationship between mother's knowledge and

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the length of umbilical cord separation in newborns can be seen that of 31 respondents who have good knowledge, there are 20 respondents (64.5%) experiencing quickly detached the umbilical cord, there were 11 respondents (35.5%) experiencing normal cord detachment and 0 respondents (0%) experiencing prolonged cord detachment. While 1 respondent (100%) knowledgeable mothers had less experience of long umbilical cord detachment.

The results of statistical tests explain that the chi-square count = 32.436 is greater than the chi-square table = 9.488 and value  $0.00 < (0.05)$  thus the hypothesis says there is a relationship between mother's knowledge and the length of umbilical cord separation in newborns birth is statistically proven in the Poskesdes village of Surya Adi, Mesuji sub-district in 2021.

The result of the analysis of the odds ratio (OR) is 2. This shows that mothers with good knowledge have 2 times the chance of getting the umbilical cord removed faster than mothers with less knowledge.

This result is in line with the research of Diah Puspita Sari and Oktaviani Cahyaningsih (2020) which stated that of the 50 respondents, the majority or 32 respondents (64%) had good knowledge, 16 respondents (32%) had sufficient knowledge and 2 respondents (4%) less knowledgeable.

Researchers concluded that mothers who have good knowledge in performing umbilical cord care because it is according to the recommendations by paying attention and caring for the umbilical cord is always clean, dry, and left open. Good knowledge of mothers in carrying out care for the newborn's umbilical cord will cause the umbilical cord to be detached quickly or normally.

**b. Relationship between umbilical cord care and length of umbilical cord detachment in newborns**

Based on the results of research conducted at Poskesdes Desa Surya Adi, Mesuji sub-district, Ogan Komering Ilir district 2021 in a bivariate relationship between umbilical cord care and the length of umbilical cord detachment in newborns, it can be seen that out of 6 respondents to open umbilical cord care there were 4 respondents (66.6%) experienced fast umbilical cord detachment, 1 respondent (16.7%) was normal and 1 respondent (16.7%) was old. Meanwhile, from 26 respondents who had closed umbilical cord care, 16 respondents (61.5%) experienced fast umbilical cord detachment, 10 respondents (38.5%) were normal and 0 respondents (0%) were old.

The results of statistical tests using chi-square ( $\chi^2$ ) = 5.028 and value  $0.08 > (0.05)$  thus the hypothesis says that there is a relationship between open umbilical cord care and the length of umbilical cord detachment in newborns, not statistically proven in village Poskesdes Surya Adi, Mesuji sub-district in 2021. The result of the odd ratio (OR) analysis is 2.5. This shows that the umbilical cord treatment with the open method has a 2.5 times faster chance of removing the umbilical cord than the closed cord treatment.

Umbilical cord moisture is a factor that slows down the release of the umbilical cord (Sodiki, 2012). While there are still many mothers who have babies caring for the umbilical cord, with a closed method that causes the old category to detach the umbilical cord, while the umbilical cord dries quickly and falls off by leaving the umbilical cord open and exposed to air.

**c. The relationship between counseling and the length of the umbilical cord in newborns**

Based on research conducted at the Poskesdes, Surya Adi village, Mesuji district, Ogan Komering Ilir 2021 bivariately, that of the 22 counseling respondents with open behavioral responses, there were 12 respondents (54.5%) experiencing fast umbilical cord detachment, there were 10 respondents (45.5 %) normal and none 0 respondents (0%) long. Meanwhile, out of 10 respondents with closed behavioral responses, 8 respondents (80.0%) experienced fast umbilical cord detachment, 1 respondent (10.0%) was normal and 1 respondent (10%) was long.

The results of statistical tests using chi-square ( $\chi^2$ ) = 5.427 and value  $0.07 > (0.05)$  thus the hypothesis says there is a relationship between counseling and the length of umbilical cord detachment in newborns, not statistically proven at Poskesdes village Surya Adi sub-district Mesuji Year 2021.

The result of the analysis of the odds ratio (OR) is 0.15. This shows that counseling with an

open behavior change response is 0.15 times faster than the closed behavior change response.

#### 4. Discussion

There is no relationship between maternal knowledge, umbilical cord care and counseling simultaneously with the length of umbilical cord detachment in newborns at the Surya Adi Poskesdes in 2021.

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