The Relationship Between Mothers' Umbilical Cord Care and The Time of Umbilical Cord Detachment among Infants at Pidie Health Center, Pidie District

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Abstract

Umbilical cord is a connective tissue that connects the placenta and fetus. It is the lifeline for a fetus in the womb because it supplies nutrients and oxygen to the fetus for 9 months and 10 days. The rest of the umbilical cord attached to the baby's stomach (umbilical stump) will usually dry up and fall off on its own within 1-3 weeks although some may come off after 4 weeks. The purpose of this study was to determine the relationship between the ways umbilical cord is cared and the time of umbilical cord detachment among infants at the Pidie Public Health Center, Pidie District. The research samples were women with babies in the working area of the Pidie Public Health Center, totaling 32 people. This study is descriptive in nature. It used a cross sectional design to find out the relationship between umbilical cord care and the time of umbilical cord detachment in infants. The findings revealed that 53.1% (17 respondents) found the umbilical cord detachment in infants was fast, and 62.5% (20 respondents) found the umbilical cord care in infants was relatively fast. The data on the relationship between umbilical cord separation and umbilical cord care in infants were obtained from 20 respondents with good umbilical cord care. It is expected that all mothers in the working area of the Pidie Public Health Center can gain updated information on umbilical cord care because it can accelerate the removal of the umbilical cord on infants.

Keywords: Knowledge, Umbilical Cord Care, Umbilical Cord Removal Time

1. Introduction

Umbilical cord is a medical term for a rope that connects the fetus with the uterus or placenta. In the womb, this rope distributes oxygen and food from the placenta to the fetus. After a baby is born, no more oxygen through the rope is needed because the baby can breathe on its own through the nose. Because the rope is no longer needed, it must be immediately cut, clamped or tied (Baety, 2011).

According to the standard of Normal Delivery Care (APN), when the baby is born, an umbilical cord should be cut. According to JNPKR, Ministry of Health (2008), a newborn must be dried and wrapped around the head and body, except the umbilical cord. To clamp an umbilical cord, high-level disinfection or sterile clamps must be used at a distance of approximately 3 cm from the baby's umbilicus. After the first clamp, the baby's umbilical cord is sequenced towards the mother by installing the second clamp at a distance of 2 cm from the first clamp. By using the left hand between the middle fingers, the umbilical cord is cut between the two clamps (Depkes RI, 2012).

The remaining pieces of the baby's umbilical cord must be treated, because if not, it can cause infection. Early recognition and treatment of umbilical cord infection is very important to prevent sepsis. An infected umbilical cord is usually red and swollen, oozing pus, or has a foul odor. If swelling is confined to an area <1 cm around the base of the umbilical cord, it should be treated as a localized or limited cord infection. If the area around the umbilical cord becomes red and hardened, or if the baby has abdominal distension, it should be treated as a severe or widespread umbilical cord infection (Meiliya & Karyuni, 2010).

When the umbilical cord is cut, the blood supply from the mother stops. The umbilical cord that is still attached to the baby's body center will eventually dry and come off. Drying and separation of the umbilical cord is greatly affected by Jelly Wharton or the flow of air that hits it. The tissue in the remainder of the umbilical cord can be used as a colony by bacteria, especially if it is left moist and dirty (Sastrawinata, 2013).

The remaining pieces of the umbilical cord are the main cause of infection in newborns. This condition can be prevented by leaving the umbilical cord dry and clean. The umbilical cord is used as a place for bacterial colonies from the surrounding environment. Tetanus is a disease suffered by newborns caused by the bacillus clostridium tetani which can secrete a toxin that can destroy red blood cells, damage leukocytes, and has a neurotropic "tetanospasmin" that can cause muscle tension and spasm (Jitowijoyo & Kristiyanasari, 2010).

The most important thing in cleaning the umbilical cord is to make sure the cord and the area around it are always clean and dry. Always wash your hands with clean water and soap before cleaning the umbilical cord. As long as the umbilical cord has not fallen off, the baby should not be bathed by dipping it in water. Just wipe it with a cloth soaked in warm water (Sinsin, 2011).

Umbilical cord care is a nursing action that aims to treat the umbilical cord in newborns to keep it dry and prevent infection. Umbilical cord care is the act of caring for or maintaining the baby's umbilical cord after the umbilical cord is cut until before puput (Muslihatun, 2010).

Infection in the umbilical cord caused by actions or treatments that do not meet hygiene requirements. The following are ways to care for the umbilical cord. First, wash hands with soap and clean water before treating the umbilical cord. Then, gently clean the skin around the umbilical cord with a damp cotton swab. After that, wrap it loosely/not too tightly with clean/sterile gauze. The baby's diaper or pants are tied under the umbilical cord. Do not cover the umbilical cord to avoid contact with feces and urine. Avoid using buttons or coins to cover the umbilical cord (Prawihardjo, 2010).

The main infection occurring to the baby's umbilical cord is *tetanus neonatorum* due to unhygienic or less clean umbilical cord care or treatment. Inappropriate umbilical cord care is caused by several factors; one of which is limited knowledge of primiparous mothers in umbilical cord care. There are many primiparous mothers who use ancient methods for umbilical cord care based on family advice, such as using traditional medicines (powder or leaves and so on) while in fact, these can cause tetanus germs to enter the baby's body through the cord and lead to infection (Jumiarni et al., 2014).

There are still many cases of neonatal morbidity and mortality associated with umbilical cord infection. In 2000, the WHO (World Health Organization) found an infant mortality rate of 560,000 caused by umbilical cord infection. In Southeast Asian countries, it is estimated that there are 22,000 infant deaths caused by unsanitary umbilical cord care.

According to WHO, the proportion of newborn deaths in the world is very high with an estimated 4 million newborn deaths per year and 1.4 million deaths in newborns in the first month in Southeast Asia. Deaths due to umbilical cord bleeding are estimated to be around 550,000, which is more than 50% of deaths occurring in Africa and Southeast Asia due to massive bleeding since there is rupture of umbilical blood vessels or thrombus abnormalities in infants (Wardojo S, 2017).

Based on the initial survey by the researchers in the working area of the Pidie Health Center, there were 32 mothers who had babies aged 0-6 months. Out of 10 mothers interviewed by the researchers, only 2 had umbilical cord care for babies, while the rest said that they did not dare to take care of the remaining umbilical cord attached to their baby's stomach by themselves. They usually call a traditional birth attendant to bathe and treat the

remaining umbilical cord by wrapping the umbilical cord stump with non-sterile gauze or with a piece of cloth.

Based on the above problem, the researcher aimed to investigate the relationship between the ways umbilical cord is cared and the time of umbilical cord detachment among infants at the Pidie Public Health Center, Pidie Regency. Due to the limitations of time, energy, and cost, the researchers only discussed information on umbilical cord care and obtained information from mothers with babies around the Pidie District Health Center, Pidie Regency. The researchers also distributed questionnaires at Integrated Health Post (Posyandu) in November 2018.

2. Method

The design of this study was analytical with a cross-sectional approach because researchers wanted to identify the relationship between the ways of umbilical cord care and the time of umbilical cord detachment among infants at the Pidie Public Health Center, Pidie Regency. The population in this study were all mothers with babies in the area, totaling 32 people. The total population was taken as research samples. The sampling was done based on several criteria: 1) the respondents were postpartum mothers in the Pidie Health Center Work Area; 2) the respondents were able to read and write, 3) the respondents were willing to take part in the study. These criteria were set to obtain correct and accurate information at the time of questionnaire distribution or interviews.

Questionnaire was used a data collection instrument containing 12 questions. There were 3 questions asking about general information and 9 questions for research data. The latter specifically consisted of 8 questions on umbilical cord care and 1 question on length of umbilical cord detachment.

Data processing methods proposed by Arikunto (2010) was applied. It has several stages, namely:

1. Editing.
In this stage, questionnaire and approval sheets to become respondent are edited until there is no error.
2. Coding.
In this stage, the edited questionnaire is coded. If an answer is correct, it will be given a value of 1 and if the answer is wrong, it will be given a value of 0.
3. Transferring.
The data from the coded questionnaire will be entered the data into the master table.
4. Data Tabulation.
After inputting the respondent's data into the master table, they are tabulated to make it easy for calculation.
5. Data Entry.
The data are entered into the computer using the SPSS program application.

Data Analysis or Univariate Analysis (Descriptive Analysis) was carried out on each variable of the study. In general, this analysis only produces the frequency distribution and the percentage of each variable (Notoatmodjo, 2010). The analysis was carried out with the frequency distribution of each independent variable (level of knowledge and attitudes of mothers about verbal stimulation) and the dependent variable (story-reading behavior). Then, the percentage (P) was determined by using the following formula (Notoatmodjo, 2010):

$$P = \frac{F}{n} \times 100\%$$

Description :

P = Persentase

n = Sampel

F = Observed Frequency

Bivariate analysis is an analysis of the results of independent variables that are thought to have a relationship with the dependent variable. The analysis used was cross tabulation. To test the hypothesis, statistical analysis was carried out using the Chi Square test (X² at a significance level of 95% (P 0.05) to find out if there was any statistically significant difference using the computer program SPSS for Windows version. 16.0. In the Chi Square test, if the P value is less than or equal to the alpha value (0.05), H₀ is rejected and H_a is accepted, suggesting that there is a significant relationship between the dependent variable and the independent variable (Notoatmodjo, 2010).

3. Results and Discussions

3.1. Univariate analysis

Table 1. Frequency distribution of umbilical cord removal in infants

No	Time to leave the placenta	Frequency	Percentage
1.	Fast	17	53,1
2.	Long	15	46,9
Total		32	100,0

Source: primary data (processed 2018)

From Table 1, it can be seen the majority of the time the baby's umbilical cord detachment occurs quickly with a frequency of 17 (53.1%).

Table 2. Distribution of the frequency of umbilical cord care

No	Umbilical Cord Care	Frekuensi	Persentase
1.	Good	20	62,5
2.	Not good	12	37,5
Total		32	100,0

Source: primary data (processed 2018)

Based on Table 2, the majority of respondents (20) have good umbilical cord care, namely 62.5%.

3.2. Bivariate analysis

Table 3. Distribution of the time frequency for umbilical cord removal and umbilical cord care for infants in the working area of the Pidie District Health Center Pidie, Pidie Regency in 2018

Rate, Rate Ratio, and p-value in 2018									
No	Umbilical Cord Care	Time to leave the placenta				Total		p-value	λ
		Fast		Long					
		F	%	F	%	F	%		
1	Good	15	46.9	5	15.6	20	62.5	0,005	0.05
2	Not Good	2	6.2	10	31.2	12	37.5		
Total		17	53.1	15	46.9	32	100		

Source: primary data (processed 2018)

Based on Table 3, 15 out of 20 respondents with good umbilical cord care said that they had fast umbilical cord removal (46.9%). Twelve respondents had less umbilical cord care while only 2 people (6.2%) had fast umbilical cord removal. From the statistical test results P value of 0.005 was obtained, which means that at alpha 5% (0.05), H_0 is rejected. Thus, there is a significant relationship between the time of cord detachment and umbilical cord care.

4. Conclusions

It can be concluded that there is a significant relationship between umbilical cord care and the time of umbilical cord detachment among infants at the Pidie Health Center, Pidie Regency, in November 2018. It is expected that mothers with babies can have sufficient information on ways to care an umbilical cord to accelerate the detachment.

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