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Topical Breast Milk Care and Open Care for Umbilical Cord Release Time

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ABSTRACT

The neonatal mortality rate in Indonesia is still quite high, one of the causes is neonatal infections, namely omphalitis and sepsis. In neonates, the umbilicus is the most vulnerable area for bacterial colonization, therefore correct umbilical cord care is important to prevent infection during the neonatal period. One method used to care for the umbilical cord is topical application of breast milk. Breast milk can speed up the process of shedding the umbilical cord through polymorphonoclear leukocytes in the umbilical cord, photolytic enzymes and other immunological compounds. objective To determine the effect of umbilical cord care using topical breast milk and open methods on the time of umbilical cord removal at the Binanga Community Health Center in 2021. Method This research uses the Quasy Experiment research method, a single treatment design (One Shot Case Study). The population in this study were newborn babies. Sampling was carried out using a total sampling technique, obtaining 30 respondents. Data collection was carried out using questionnaires and observation sheets. The data that has been collected is then processed and analyzed using the SPSS version 20 statistical program and analyzed using Mann Whitney. Result Of research shows that there is an influence of umbilical cord care using topical and open breast milk on the length of umbilical cord removal at the Binanga Community (p=0.005).

INTRODUCTION

In neonates, the umbilicus is the most vulnerable area for bacterial colonization, which can sometimes lead to neonatal infections such as omphalitis and sepsis. Proper umbilical cord care is important to prevent infections during the neonatal period. Various disinfectants or antibiotics for neonatal umbilical cord care that have been

reported include alcohol, chlorhexidine, antibiotics, mupirocin, polybactin, bacitracin, powders containing hexachlorophene, silver sulfadiazine, and povidone-iodine. However, the recommended method based on experimental evidence has not yet been established. (Vedjia Medhyna, 2020)

One of the methods used to care for the umbilical cord is the topical application of breast milk, which has been used in Kwazulu-Natal, then in some Kenyan communities and several regions in Turkey. Because breast milk can accelerate the process of umbilical cord detachment through polymorphonuclear leukocytes present in the umbilical cord, photolytic enzymes, and other immunological compounds. The topical method of breast milk is beneficial due to the antibacterial factors present in breast milk. In addition, breast milk contains many immunological and anti-infective agents. Breast milk contains a significant amount of complement components, acts as a natural antimicrobial agent, and is also equipped with protective factors that provide specific and nonspecific passive immunity.(Vedjia Medhyna, 2020)

Research results (Damanik, 2021) shows The research results show that in both groups, each consisting of 15 participants, the case group had a quick umbilical cord separation in 10 babies and a prolonged separation in 5 babies, while the control group had a quick umbilical cord separation in 4 babies and a prolonged separation in 11 babies. With a P-value (0.002) < α (0.05), the alternative hypothesis (Ha) is accepted. Likewise, with the research results of Kandari, 2020 in (Rizki, 2022) shows that out of 30 respondents, the average time for umbilical cord detachment using colostrum is 5 days. Meanwhile, in the open dry group, the average umbilical cord detachment time is 6 days. The survey results at Puskesmas Binanga show that the care of the umbilical cord is given great attention to sterility. The health workers at Puskesmas Binanga teach mothers how to care for the umbilical cord using topical breast milk to speed up the drying process, so the umbilical cord will detach as soon as possible. Suboptimal umbilical cord care will cause the umbilical cord to become infected by bacteria, which will endanger the newborn baby. Based on the background and several research results related to umbilical cord care, the researchers are interested in conducting a study titled "The Effect of Topical Breast Milk and Open Umbilical Cord Care on the Duration of Umbilical Cord Detachment at Binanga Health Center in 2021" to determine how umbilical cord care using topical breast milk affects the duration of umbilical cord detachment at Binanga Health Center, Mamuju Regency, in 2021.

METHOD

The research method used is Quasi-Experiment with a single treatment design (One Shot Case Study). To a group of subjects, a treatment (X) is given, followed by observation (Y). Subsequently, the variables to be observed will be measured to see the difference in umbilical cord care using topical breast milk and the exposure to the time of umbilical cord detachment.

This research was conducted at Puskesmas Binanga from July 2021 to November 2021. The sample in this study consisted of 30 newborns in November at Puskesmas Binanga in 2021. The case group was given topical breastfeeding method umbilical cord care by applying breast milk to the baby's umbilical cord twice a day. Meanwhile, the control group was given open method cord care. The researchers used a questionnaire sheet for the respondents' demographic data and an observation sheet to observe the time of umbilical cord detachment. The test used is the t-test analyzed using SPSS.

RESULTS AND DISCUSSION

Table 1. Frequency Distribution of Respondent

Karakteristik Responden	N	Persen (%)
Jenis Kelamin		
Laki-laki	14	46.6
Perempuan	16	53.3
Weight		
<2500 gram	0	0
2500-3000 gram	28	93.3%
>3500 gram	2	6.7%

Characteristics (n=30)

Based on the data, the overall age of the respondents is BBL with 30 people (100%), consisting of 14 people (46.7%) male babies and 16 people (53.3%) female babies. Based on weight, the majority of babies were born with a weight of

2500-3500 grams, totaling 28 people (93.3%), and a weight of >3500 grams, totaling 2 people (6.7%).

Table 2. Frequency Distribution of Respondents Based on Duration of Umbilical Cord Separation

Variabel	Mean	Median	SD	Min	Max
Kelompok Eksperimen					
Topical ASI	5.00	4.00	1.100	3	6
Kelompok Control					
Terbuka	6.00	8.00	1.534	6	10

Based on the data, the independent variables topical breast milk (X1) and open (X2) each consist of 15 respondents (100%), while the dependent variable, the duration of umbilical cord separation, has a total of 30 respondents (100%). The mean rank value between the first category is lower than the second category because it is related to the difference in umbilical cord detachment between umbilical cord care with topical breast milk and open umbilical cord care, with the average duration of umbilical cord detachment with topical breast milk care being around 5 days, while the average duration with open umbilical cord care is around 6 days at Puskesmas Binanga in 2021.

Table 3. The Effect of Topical and Open Cord Care on Umbilical Cord Detachment Time

Kelompok	N	Mean	SD	P Value
Topical ASI	15	5.00	1.100	.005
Metode Kering	15	6.00	1.534	

Based on the results of the Mann-Whitney test, a Sig. (2-tailed) value of 0.005 < 0.05 was obtained. Therefore, based on the decision-making above, it can be concluded that H0 is rejected, which means there is an effect of topical ASI and open umbilical cord care on the umbilical cord release time at Puskesmas Binanga in 2021.

Based on the results of the descriptive analysis test, data on the independent variables topical breast milk (X1) and open (X2) each consisted of 15 respondents with a total of 30 respondents (100%), while the data on the dependent variable duration of umbilical cord detachment (Y) had a total of 30 respondents (100%). The mean rank value between the first category is lower than the second category because it is related to the difference in umbilical cord detachment between umbilical cord care with topical breast milk and open umbilical cord care, with the average duration of umbilical cord detachment with topical breast milk care being around 5 days, while care with an open umbilical cord is on average around 6 days at Puskesmas Binanga in 2021.

Breast milk contains substances such as lactose, protein, fat, minerals, and vitamins. Breast milk has a direct effect on cells. One of the components of breast milk is protein. Protein as a builder of essential body bonds, regulates the body's fluid balance by reacting to acids and bases to maintain the body's pH balance, forms antibodies, and plays an important role in transporting nutrients into tissues. (Nur Anita, Siti Patimah, 2019)

The results of the Mann-Whitney test with a Sig. (2-tailed) value of 0.005 < 0.05 indicate that based on the decision-making above, it can be concluded that H0 is rejected, meaning there is an effect of topical ASI and open umbilical cord care on the umbilical cord release time at Puskesmas Binanga in 2021.

In line with the research findings of Damanik (2020), the results indicate that in both groups, each consisting of 15 participants, the case group had a quick umbilical cord detachment in 10 babies and a delayed detachment in 5 babies, while the control group had a quick umbilical cord detachment in 4 babies and a delayed detachment in 11 babies. With a P-value (0.002) < α (0.05), the alternative hypothesis (Ha) is accepted, indicating a significant difference between the topical breast milk method and the open technique in the detachment of the umbilical cord in newborns.

In an effort to prevent infection and accelerate the detachment of the umbilical cord, various substances and methods are used for umbilical cord care. Cord care using breast milk or colostrum is better than applying harmful substances to the cord. One of the interventions that can be carried out by healthcare workers as a form of caring is providing midwifery care to infants in the clinic or after discharge using the breast milk topical care model. (Damanik, 2021)

Breast milk is an easily available and effective substance for umbilical cord care that can be applied in developing countries to reduce umbilical cord infections and speed up discharge times. Several studies by Widowati, Haksari, Surjono, and Randomized Controlled Trial (RCT) have proven that umbilical cord care with topical Breast milk is a safe, effective, and efficient method, so it needs to be further developed, and breast milk is used topically in the care of newborns' umbilical cords. (Rostarina et al., 2021)

Model of topical care with breast milk on the umbilical cord This can reduce the incidence of omphalitis and accelerate the time of umbilical cord detachment in infants, but it is more recommended to use breast milk that is colostrum 1-4 days postpartum. The model of umbilical cord care with topical breast milk that has been collected in a cup must still be accompanied by proper care methods, including hand washing and using sterile gloves (handscoons), maintaining umbilical cord cleanliness, and proper bathing. It is necessary to provide education to healthcare workers and postpartum mothers so that they can correctly apply the method of cord care for babies with topical breast milk. (Rostarina et al., 2021)

According to (Utami & Sulastri, 2017) that there is a significant difference between umbilical cord care using colostrum in newborns compared to using sterile dry gauze in the duration of umbilical cord detachment at BPM Southeast District, Banten Province in 2017, which is 2 days faster using colostrum compared to sterile dry gauze. The time for the umbilical cord to detach using colostrum was the fastest at 2 days, while the longest time for the umbilical cord to detach using colostrum mostly occurred on the 4th day. The care of the umbilical cord with sterile dry gauze during the fastest umbilical cord detachment period is on the 6th day, while the duration is 6 days, marked by pvalue = 0.000 < a = 0.05. Breast milk contains lymphocytes consisting of 2 cells, namely B cells and T cells. B cells function as part of the humoral immunity, with immunoglobulin receptors that can recognize antigens and develop into plasma cells that produce antibodies. T cells as helpers to B cells in forming antibodies (utami roesli, 2000)

Physiologically, when there is a foreign object in the body, B cells or T cells will be activated and respond to macrophages to fight the foreign object. As a result, B cells and T cells will proliferate with macrophages and undergo mitotic division. This process makes breast milk effective as a medium that can be used for umbilical cord care because it contains various nutrients. (Lusiana LE, n.d.)

CONCLUSIONS AND RECOMMENDATIONS

Newborns who received umbilical cord care using topical breast milk experienced umbilical cord detachment on average after 5 days, whereas those using the open method averaged 6 days. And based on the results of statistical tests, it shows that there is an influence of topical breast milk and open cord care on the time of umbilical cord detachment.

This will certainly benefit science, as the results of this research can be used in services, particularly in the care of newborns' umbilical cords. The method of umbilical cord care with topical breast milk will accelerate the healing of the baby's umbilical cord, thereby preventing the potential occurrence of infection.

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