

The Effectiveness Of Umbilical Cord Care With Topical Breast Milk On The Length Of Umbilical Cord Detachment In Newborns At The Yusniar Clinic Pangkalan Berandan In 2022

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ABSTRACT

Umbilical cord that is not cared for properly can cause infection of the umbilical cord. The umbilical cord usually sheds 1 week after birth and the wound heals within 15 days. Wounds that have not healed are a pathway for germs to enter which result in infection, which can quickly lead to sepsis. The purpose of this study was to determine the effectiveness of topical breast milk treatment of the umbilical cord on the length of time for the release of the umbilical cord in newborns. This type of research uses a quasi experimental research design with a control group design. This research was conducted at the Yusniar Pangkalan Berandan Clinic. This research was conducted in August 2022. The population in this study were all newborns born at the Yusniar Clinic. The sample in this study were all newborns born in August - September 2022. The subject-taking technique used a total sampling of 40 people. Subjects were divided into two groups, an intervention group and a control group, each of which consisted of 20 people. The intervention group was given treatment with umbilical cord care using topical breast milk while the control group was treated with dry gauze. Then measurements are taken when the umbilical cord is released, quickly if it is released within 1-7 days and normal if it is released within 8-14 days. The type of data used in this study is primary data. Data collection is assisted by enumerators. Data analysis with the Wilcoxon rank test. The results of the study were obtained based on the duration of the release of the umbilical cord with topical ASI, the majority of normal umbilical cord discharge were 16 people (80%), and the minority of slow cord discharge was 1 respondent (5%). Based on the duration of the release of the umbilical cord with dry gauze, the majority of the release of the umbilical cord were slow, as many as 16 people (80%), and the minority of normal umbilical cord discharge were 4 respondents (20%). Based on the Mann Whitney test, the results obtained were a p value of 0.000. Treatment of the umbilical cord with topical breast milk was effective for the duration of the release of the umbilical cord in newborns. Umbilical cord care with topical breast milk is effective for the duration of umbilical cord discharge in newborns

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INTRODUCTION

Infection of the baby's umbilical cord is also known as omphalitis. Umbilical cord infection is usually caused by moist and wet conditions around the umbilical cord, which triggers the growth of bacteria and germs. In countries with limited resources, umbilical cord infection is always a major cause of neonatal morbidity and poses a significant risk of death. Therefore, proper and correct care of the umbilical cord is very important to prevent systemic infection (Rini, dkk, 2022).

Efforts to prevent infection of the umbilical cord are actually simple actions whose concept is that the umbilical cord and the area around the umbilical cord are always clean and dry and wash hands with clean water and soap before caring for the umbilical cord. Many studies have been conducted regarding the materials used to treat the umbilical cord, including medical treatment using antiseptic ingredients which include 70% alcohol or antimicrobials such as 10% providone-iodine (betadine), chlorhexidine, Iodine Tinstor and others which are referred to as the modern way. Meanwhile, traditional methods of cord care use honey, ghee oil (India), or colostrum (Sodikin, 2019).

If the umbilical cord is not properly cared for, it can lead to umbilical cord infection. The umbilical cord usually falls off 1 week after birth and the wound heals within 15 days. Wounds that have not healed are an entry point for germs that result in infection, which quickly causes sepsis. One indicator of health status in Indonesia is the infant mortality rate. The high infant mortality rate in Indonesia is caused by various factors, including disease, infection and malnutrition (Sembiring, 2019).

According to WHO in 2015 Neonatal deaths due to neonatal tetanus for countries in Southeast Asia were 581 babies. Neonatal tetanus mortality in developing countries is 135 times higher than developed countries. Meanwhile in ASIA, especially ASEAN countries, every year the incidence of neonatal tetanus increases and Indonesia ranks second after the Philippines with more than 100 sufferers (Aprilina et al., 2022). The infant mortality rate (IMR) is an indicator of the welfare of a nation that reflects the level of public health problems. Based on the Indonesian Demographic Health Survey (IDHS) in 2007, in Indonesia the IMR reached 34/1000 KH and decreased in 2017 to 32/1000 KH, and around 56% of infant deaths occurred in the neonatal period (Daswati, 2021).

The Infant Mortality Rate (IMR) in 2017 reached 34/1000 live births for mothers who gave birth at the age of <20 years. Where 79% occurred in the first week after birth. The highest cause of neonatal death is neonatal infection, one of which is caused by improper umbilical cord care. IMR and MMR are important indicators in determining the health level of a country. AKI and IMR determine the ability to handle cases and understand health problems that often arise both maternally and neonatally (Badan Pusat Statistik, 2022).

Based on the 2017 Indonesian Health Profile, the incidence of neonatal tetanus was 20% due to umbilical cord care using alcohol, 44% traditional treatment, 8% others, and 28% unknown. In North Sumatra, only 1 case of tetanus neonatorum occurred in Labuhan Batu Regency, this number continues to decrease when compared to 2012 with 3 cases and 11 cases in 2011, 2010 5 cases and 2009 6 cases (Yuni, 2017).

In general, cord care that is correct and according to established standards is expected not to cause complications in the baby. One of the ways to treat the umbilical cord is to use breast milk. The use of breast milk on the umbilical cord is a comfortable, easy, and non-invasive way to care for the umbilical cord. In terms of release time, topical application of breast milk showed a shorter release time than observed in cord care (Anggeriani et al., 2022).

Research conducted by Simanungkalit and Sintya in 2019 obtained results that in the intervention group of fast umbilical cord discharge there were 13 babies (86.7%), and normal there were 2 babies (13.3%). The results of the Chi square test analysis showed that there was an effect of

topical breast milk on the umbilical cord care on the duration of the release of the umbilical cord ($p = 0.023$) (Simanungkalit & Sintya, 2019).

Another study conducted by Putri et al. (2017) stated that the average length of umbilical cord detachment with topical use of breast milk was 5.03 days, and the average length of cord detachment with dry care was 6.00 days. There is a difference in the length of the release of the baby's umbilical cord with the use of topical breast milk 0.97 days faster than the dry treatment. Breast milk (ASI) is proven to contain bioactive substances and cells that have effective functions as anti-infective and anti-inflammatory. With a variety of content of these beneficial substances, breast milk can be used as an alternative material for umbilical cord care (Sari et al., 2017).

Research conducted by Astutik (2016) found that all (100%) respondents, 24 experienced normal umbilical cord discharge (5-7 days) after cord care using sterile dry gauze. All respondents (100%) experienced slow release of the umbilical cord (>7 days) after cord care using 70% alcohol gauze. The results of the Mann Whitney test obtained p value = $0.000 \leq \alpha = 0.05$ so that H_a was accepted and H_o was rejected. There is an effect of umbilical cord care using sterile dry gauze on the release of the umbilical cord in newborns in the working area of the Summersari Saradan Health Center, Kab. Madison (Astutik, 2016).

According to the Normal Childbirth Care standard, the umbilical cord that has been cut and tied is not given anything. Before the APN method is applied, the umbilical cord is treated with alcohol and other antiseptics. In terms of evidence based practice, traditional cord care using breast milk has an effect on preventing infection and the length of time for the cord to be released. Based on the results of research conducted by Putri et al. (2017) stated that the average length of release of the umbilical cord with the use of topical ASI was 5.03 days, and the average length of release of the umbilical cord with dry treatment was 6.00 days. There is a difference in the length of release of the baby's umbilical cord with the use of topical breast milk, which is 0.97 days faster than dry care. Mother's milk (ASI) is proven to contain bioactive substances and cells that have effective functions as anti-infection and anti-inflammatory. With a variety of these useful substances, breast milk can be used as an alternative material for umbilical cord care (Putri et al., 2017).

The umbilical cord usually falls off 1 week after birth and the wound heals within 15 days. Before the wound has healed it is an entry point for infection that can quickly lead to sepsis. Factors that cause umbilical cord infection are germ factors such as *Staphylococcus aerues* which are everywhere, unhealthy deliveries or those assisted by non-medical personnel, traditional factors related to umbilical cord care that apply in some communities, for example by giving various ingredients. -herbs or powders that are believed to help speed up the dryness and detachment of the umbilical cord (Sembiring, 2019).

Based on the initial survey conducted at the Yusniar Clinic, the umbilical cord treatment still uses the sterile gauze treatment method. Based on this, the researchers were interested in conducting a study with the title "Effectiveness of umbilical cord care with topical breast milk on the duration of umbilical cord detachment in newborns".

RESEARCH METHOD

This type of research uses a quasy experimental research design with pre-test and post-test with control group design, namely giving treatment or intervention to the experimental group and then the effect of the treatment is measured and analyzed (Jiwantoro, 2017). The research design or research design is a non-equivalent control group, which is an experimental research design to compare the results of a health program intervention with a control group that is similar but not necessarily the same group (Swarjana, 2012). In this research design, the research subjects were grouped into two groups, namely the intervention/experiment group (subjects who were given umbilical cord care using topical breast milk) and the control group (subjects who were given dry gauze umbilical cord care).

His research was conducted at the Yusniar Clinic Pangkalan Berandan and was conducted in August 2022. The population in this study were all newborns born at the Yusniar Clinic. The sample in this study were all newborns born in August - September 2022. The sampling technique used total sampling (Sugiyono, 2018). Subjects were divided into two groups, one intervention group and one control group. The intervention group was given treatment with umbilical cord care using topical breast milk while the control group was treated with dry gauze. Then measurements are taken when the umbilical cord is released, quickly if it is released within 1-7 days and normal if it is released within 8-14 days.

The type of data used in this study is primary data. Data collection is assisted by enumerators. Researchers with the help of door to door enumerators to perform umbilical cord care and assess the time of umbilical cord release. The instrument used in this study was an observation sheet used in performing umbilical cord care and observing umbilical cord discharge time in both the intervention group and the control group. This observation sheet contains the respondent's number, respondent's name, date of birth, address, telephone number of the baby's parents, type of umbilical cord care, delivery date, and length of umbilical cord release.

Univariate analysis was carried out on each of the variables studied in order to explain or describe the characteristics of each research variable (Notoatmojo, 2017). While bivariate analysis is an analysis carried out to determine whether there is a relationship between the two variables, including the independent variable, namely umbilical cord care with topical breastfeeding with the dependent variable being the length of umbilical cord detachment using the Mann Whitney test in SPSS.

RESULTS AND DISCUSSIONS

Univariate Analysis

Table 1. Distribution of frequency of duration of umbilical cord discharge in newborns with topical breast milk

Duration Of Umbilical Cord Discharge	Frequency (f)	Percent (%)
Slow	1	5
Normal	16	80
Fast	3	15
Total	20	100

Based on Table 1, it can be seen the frequency distribution data of respondents based on the duration of cord discharge with topical breast milk, the majority of normal cord discharges were 16 people (80%), and a minority of slow cord discharges were 1 respondent (5%).

Table 2. Distribution of the frequency of the duration of release of the umbilical cord in newborns with dry gauze

Duration Of Umbilical Cord Discharge	Frequency (f)	Percent (%)
Slow	16	80
Normal	4	20
Total	20	100

Based on Table 2, it can be seen that the frequency distribution of respondents based on the length of umbilical cord detachment with dry gauze was the majority of slow umbilical cord release as many as 16 people (80%), and the minority of normal umbilical cord detachment as many as 4 respondents (20%).

Bivariate Analysis

Table3. Effectiveness of umbilical cord care with topical breast milk on the duration of umbilical cord discharge in newborns

Group	N	Mean	Z-Count	P
Intervention	20	19,15	-4.921	0,000
Control	20	21,85		

Based on the Mann Whitney test, a p value of 0.000 was obtained with a significance degree of 0.05, which means H_0 is rejected and H_a is accepted, which means that there is a difference in umbilical cord care on the length of umbilical cord detachment in newborns. In other words, the topical treatment of the umbilical cord with breast milk is effective for the duration of umbilical cord detachment in newborns

Discussions

The results of the study explained that the respondents based on the length of umbilical cord detachment with topical breast milk were the majority of normal umbilical cord detachment as many as 16 people (80%), and the minority of delayed umbilical cord detachment as many as 1 respondent (5%). Meanwhile, based on the length of umbilical cord detachment with dry gauze, the majority of slow cord releases were 16 people (80%), and the minority of normal umbilical cord detachments were 4 respondents (20%). Sari et al's research (2017) found that the average umbilical cord care using topical breast milk was 6.18 days. The average of umbilical cord care with dry technique is 7.41 days. Treatment of the umbilical cord with topical breast milk shed 1.23 days faster than dry treatment (Sari et al., 2017).

This study also obtained results that topical breast milk treatment of the umbilical cord was effective in reducing the duration of umbilical cord discharge in newborns. This is in accordance with a study conducted by Simanungkalit and Sintya (2019) which found that in the intervention group, there were 13 babies (86.7%) in the intervention group and 2 babies in normal (13.3%), in the control group. fast umbilical cord as many as 6 babies (40%) and normal as many as 9 babies (60%). The results of the Chi-square test analysis showed that there was an effect of topical breastfeeding on the duration of umbilical cord discharge with ρ value = 0.023 so that it could be concluded that there was an effect of topical breastfeeding on the duration of umbilical cord discharge in newborns at PMB N Palangka Raya (Simanungkalit & Sintya, 2019).

The use of breast milk in the umbilical cord is a convenient, easy, inexpensive, and non-invasive way to care for the umbilical cord. In terms of release time, topical application of breast milk showed a shorter release time than observed in cord care. This is because colostrum contains more white blood cells and many immunological and disinfectant agents that increase the separation of the umbilical cord. Histological studies show that polymorphonuclear leukocytes infiltrate the area between the stump of the umbilical cord to drain the vital tissue of the abdominal wall to form a demarcation zone thereby accelerating the release of the umbilical cord (Anggeriani et al., 2022).

Mother's milk (ASI) is proven to contain bioactive substances and cells that have effective functions as anti-infection and anti-inflammatory. With a variety of these useful substances, breast milk can be used as an alternative material for umbilical cord care. Proteins in breast milk will bind to proteins in the umbilical cord, thus forming an immune reaction and an apoptotic process occurs. Cell division and growth are under genetic control, cells experience programmed death. Genes in these cells play an active role in the process of cell death. So that it will speed up the drying of the remaining pieces of umbilical cord tissue and the umbilical cord quickly shrinks and turns black or the umbilical cord mummifies, then falls off. Protein as a form of the body's essential bond in breast milk will speed up the wound healing process at the base of the umbilical cord so that the release of the umbilical cord is faster (Novridhatami dan Fernaliza, 2021).

One of the threats to infants is the occurrence of umbilical cord infection due to improper and correct umbilical cord care and non-compliance with the predetermined Standard Operational Procedure (SOP). One of the efforts that can be done to reduce infant mortality is the need for umbilical cord care. Umbilical cord care is an activity of maintaining the umbilical cord until the umbilical cord dries and spontaneously detaches to avoid the risk of infection, namely by various methods including umbilical cord care using 70% alcohol, topical breast milk and sterile dry gauze (Wulandari et al., 2021).

The timing of the release of the umbilical cord is influenced by the way the umbilical cord is cared for, the humidity of the umbilical cord, the sanitary conditions of the environment around the neonate, and the incidence of infection in the umbilical cord due to actions or treatments that do not meet hygiene requirements or do not comply with predetermined standards. The impact of incorrect umbilical cord care can result in a longer umbilical cord detachment time and umbilical cord infection. Infection in the umbilical cord can cause sepsis, meningitis, and others treatment (Sodikin, 2013).

Since 1998, WHO has recommended promoting clean and dry cord care for newborns, noting that topical antiseptics may be used if the risk of infection is high. The discharge given the ASI treatment was 4 days 3 hours, while the dry treatment was 6 days 4 hours, so there was a significant difference between the two interventions. Umbilical cord care using breast milk has several benefits for both mother and baby. The advantage of this treatment is that it is easy for the mother to do and is clean (Anggeriani et al., 2022).

According to the researchers' assumptions, in the care of newborns, it is necessary to pay attention to the care of the umbilical cord. The umbilical cord that is released more quickly will reduce the risk of infection, by paying attention to cleanliness around the umbilical cord and washing hands before and after caring for the umbilical cord. The results of this study prove that the release of the umbilical cord with topical use of breast milk is faster than dry care.

CONCLUSION

Based on the duration of umbilical cord detachment with topical breast milk, the majority of normal umbilical cord detachment were 16 people (80%), and the minority of delayed umbilical cord detachment was 1 respondent (5%). Based on the length of umbilical cord detachment with dry gauze, the majority of delayed umbilical cord release were 16 people (80%), and the minority of normal umbilical cord detachments were 4 respondents (20%). There is a difference between umbilical cord care on the length of umbilical cord detachment in newborns and the effective use of topical umbilical cord care on the length of umbilical cord detachment in newborns.

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