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The Correlation of the Open Dry Treatment to Umbilical Cord Separation Time on Newborns



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Abstract

According to East Java health profile (2019), the number of neonatal tetanus is 10 cases because of inappropriate treatment. Thus, bacteria enter the body and prolong the umbilical cord separation time. WHO (2010) and Ministry of Health Republic of Indonesia (2015) recommend umbilical cord care using an open dry method. This study attempts to identify the correlation of the open dry treatment to umbilical cord separation time according to literary results. Literature review was used to analyze the data from three online databases: PubMed, Google Scholar, and DOAJ using inclusion-exclusion criteria. The keywords were "Umbilical Dry Cord Care," "Day of Release of the Umbilical Cord," "Perawatan Tali Pusat Kering Terbuka," and "Lama Pelepasan Tali Pusat." The analysis method was compared and contrast. Based on 16 articles, the results showed three categories of umbilical cord separation time by using the open dry method. Four articles indicated the fast category (< 5 days), other ten as normal (5-7 days), and the other two the slow category (> 7 days). The accurate method for the umbilical cord care is open dry because the separation time is the fastest. However, further research using primary data is needed

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INTRODUCTION

The umbilical cord or umbilical cord is a channel between the fetus and the mother that serves to distribute nutrients to the fetus. The part of the umbilical cord that has been cut requires proper attention and care so that it does not cause infection, namely redness, swelling, discharge, foul smelling, increased temperature, and difficulty breathing. Currently, umbilical cord infection has become a cause of morbidity and mortality in neonates. It was found that 500,000 babies died from neonatal tetanus and 460,000 babies died from infection. (Liyah, 2013)

The World Health Organization (WHO) in 2010 stated that 560,000 infant deaths were caused by umbilical cord infections. Meanwhile, there are 126,000 infant mortality rates due to umbilical cord infections in Southeast Asia. 24% to 34%, and the percentage of infant mortality caused by infection is 7.3% the percentage of infections in newborns in Indonesia (Rakesnas, 2019).

Data obtained from the 2018 Indonesian Health Profile the Infant Mortality Rate is 23 per 1,000 live births (estimated figures from the Provincial BPS). The Tetanus Neonatorum rate increased in 2018 which was 11 cases from 10 cases in 2017. Meanwhile, the Malang City Health Profile data in 2018 had an infant mortality rate (IMR) of 6.71 per 1000 live births, which means that it is reported in every 1000 births. This may be due to the use of less sterile cord care and cutting equipment. There are 7 babies in umbilical cord care using the traditional way. This is the cause of infection in newborns. The umbilical cord wound is the entry point for the bacterium *Clostridium tetani* which causes tetanus neonatorum. Tetanus neonatorum is an extraordinary event that must be treated immediately.

Efforts made to prevent cases of Tetanus Neonatorum are taking good care of the umbilical cord. WHO prohibits the use of alcohol and 10% iodine-povidone in the treatment of the umbilical cord because it can slow the release of the umbilical cord. Because 10% iodine-povidone is a bactericidal antimicrobial that can fight gram-positive and most gram-negative bacteria so that it can cause allergies. So, WHO recommends cleaning the umbilical cord using water and soap, then dried and then left open. In general, the umbilical cord will be released on the 5th day to the 8th day.

In addition to WHO, the Indonesian Ministry of Health (2015) mentions that the steps for caring for an open umbilical cord are washing hands with clean water and soap, cleaning the base of the umbilical cord, how to clean it must be slightly lifted slowly, rinse and dry to dry using a cotton stick, then let the cord open center, fold the diaper under the umbilical cord and wash hands. When the umbilical cord has not been detached, the baby should be bathed by just wiping it with warm water so that the umbilical cord remains dry.

The results of a survey conducted by researchers in several literature studies showed that the average number of midwives who are members of the Indonesian Midwives Association (IBI) when treating umbilical cords using closed methods, namely with sterile gauze. Some literature and research journals mention that open dry umbilical cord treatment is also very effective and more efficient. In addition, the benefits of open dry treatment can reduce waste and can reduce maintenance costs. Lack of education in caring for the umbilical cord causes people to continue to use old techniques.

This open dry cord treatment method is effective and worth maintaining seeing cases drop from 28 cases in 2018 to 10 in 2019.

Based on this background, the researcher intends to conduct a study entitled "The correlation of dry open umbilical cord care and the length of umbilical cord detachment in newborns" which aimed to analyze newborn umbilical cord care with the open dry method on the length of the release of the newborn baby's umbilical cord.

METHOD

The design used a literature study. The type of literature review used traditional literature review. In this study, three databases were used: PubMed, Google Scholar, and DOAJ with inclusion and exclusion criteria. Key words were "Umbilical Dry Cord Care," "Day of Release of the Umbilical Cord," "Open Dry Cord Care," and "Time of Umbilical Cord Release." The analytical method used compare and contrast technique.

RESULT

In 16 journals discussed how to care for dry open umbilical cords in newborns in the research literature. Based on the journal, dry open umbilical cord care is the most effective and

efficient method. How to care for an open dry umbilical cord in the 2020 MCH book, namely:

- 1) Wash hands with soap and clean water
- 2) Do not give anything to the umbilical cord
- 3) Treat the umbilical cord open and dry if it gets dirty or wet, wash it with clean water and soap, then dry it

In 16 journals identified the duration of umbilical cord detachment by the dry open

method in newborns in the research literature. In 4 journals that discussed the length of the umbilical cord detachment of less than 5 days with the open dry method. In 10 journals, the length of the umbilical cord detachment was 5-7 days with the open dry method. In 2 journals, it was stated that the umbilical cord detachment with the open method was >7 days.

Category Long Detachment of The Umbilical Cord	Journal Total	Percentage	Journal Researcher
<5 days	4	25%	<ol style="list-style-type: none"> 1. Wiwid (2020) 90 hours (3 days 18 hours) 2. Nor Aisyah (2017) day 1-4 as many as 4 babies 3. Susianti (2017) day 1-4 as many as 5 babies 4. Hassan Al-Shehri (2019) 4,24 days
5-7 days	10	62,5%	<ol style="list-style-type: none"> 1. Ruri Yuni (2019) 5,8 days 2. Fitri Yuliana (2017) 5-7 days as much as 40% 3. Nor Asiyah (2017) as many as 15 babies (75%) 4. Susianti (2017) 21 babies (70%) 5. Sukarni (2018) 5,6 days 6. Risa Pitrianidkk (2017) 6 days 7. RatnaKholidati (2019) <6 days by 60% 8. Dian Puspita Reni (2018) 1-7 days 38 babies 9. Lindsay Mallick (2019) 5-7 days 10. Mari'aDolores, et al (2020) 6,61 hari
>7 days	2	12,5%	<ol style="list-style-type: none"> 1. Christèle Gras-Le Guen, et al (2017) 10 days 2. Rossana Quattrin, dkk (2016) 9.9 days
Total	16	100%	

DISCUSSION

In the literature review there are 16 journals discussing the dry open method of umbilical cord care in newborns. The journal identifies how to care for and the length of time for removing an open dry umbilical cord, namely by cleaning it with soap and water and then drying it until it is completely dry and then leaving it open. Four journals added that the dry open umbilical cord treatment method in addition to speeding up the discharge compared to other methods was also proven to prevent neonatal infection. Dry open umbilical cord care in the literature review mentions several categories in terms of length of release, namely fast <5 days, normal (5-7 days) and late >7 days. The 16 journals also analyzed the relationship between dry open umbilical cord care and the length of the umbilical cord detachment in newborns. In the study, it was stated that the dry open umbilical cord treatment method was released faster than other methods

such as the closed method, 70% alcohol, chlorotic, and topical breast milk.

According to Marmi 2018, the recommended effort is to keep the wound clean, dry and open. According to Lumsden, H, and Debbie Holmes (2012) the average release time should be completed in 5-15 days, although it could take longer. There have been many studies that have compared how to treat the umbilical cord to prevent an increase in infection, one of which is by leaving the umbilical cord wound open. So based on the research obtained that dry open umbilical cord treatment is the most effective method and should be applied.

CONCLUSION

The results of the review showed that the average release of umbilical cords by the open dry method consists of several categories in the length of release, namely the fast category <5 days, normal (5-7 days) and slow >7 days. However, research suggests that open dry cord treatment

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