



The Influence of the Tradition of Rubbing Jackfruit Leaf Ash on the Navel of Newborns on the Time of Umbilical Cord Shedding at the Lemo Community Health Center, Central Kalimantan

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Abstract. *Improper care of the newborn's umbilical cord increases the possibility of tetanus spores entering the body through the umbilical cord, which can cause neonatal tetanus. where umbilical cord care uses traditional ingredients such as ashes from burned Madurese cloth, jackfruit or turmeric leaves, and a concoction of betel leaves pounded with salt. These ingredients are applied to the umbilical cord stump, both open and closed. The purpose of this study was to determine the natural ingredients used to care for the umbilical cord of newborns by the community in the Lemo Health Center UPT area, Central Kalimantan in 2025. This research method: qualitative with samples in this study were 9 newborns aged 0-10 days. The analysis used an interactive model developed by Miles and Hubberman. The results showed that the majority of the infants' grandmothers (5 people) and four infants' mothers were the implementers. The oldest age was 66 years, the youngest was 28 years, and the highest education was junior high school, and the lowest was not graduated from elementary school. Rubbing spices and ashes into the umbilical cord stump, three respondents used a mixture of betel leaves and salt, three respondents used turmeric and salt, one respondent used ash from dried jackfruit leaves, and two respondents used ash from Madura cloth. Umbilical cord care methods: two respondents did it privately, and seven respondents did it openly. The amount of time for umbilical cord detachment was observed in respondents I and VII (four days), respondents II and IV (seven days), respondents III, V, VIII, and IX (three days), and respondent VI (five days). In conclusion, the time for umbilical cord detachment is considered normal or fast, with the fastest being 3 days and the longest being 7 days. It is hoped that midwives will communicate with local community leaders to promote clean, dry, and closed umbilical cord care, which is recommended by the government and carried out by midwives or health workers.*

Keywords: *Baby Health; Infant Care; Newborn Care; Traditional; Umbilical Cord Care.*

1. INTRODUCTION

Efforts to improve newborn health involve a series of ongoing activities to maintain and improve health and prevent infection and death. One way to improve infant health is through proper umbilical cord care, which is essential to avert infection and death (Purnamasari et al., 2021).

Umbilical cord care is given to newborns to prevent and identify bleeding and infection early. Umbilical cord care helps prevent omphalitis, tetanus, and neonatal infections. Proper and precise umbilical cord management provides a beneficial result, where the umbilical cord will fall off without complications on the fifth and seventh days. Conversely, incorrect care can cause the baby to contract neonatal tetanus. Umbilical cord care is performed in order to prevent newborns from contracting tetanus because tetanus germ spores enter the body through the umbilical cord, either through tools, medicines, or powder or leaves sprinkled on the umbilical cord. (Wigunantiningih & Noviani, 2025)

According to the World Health Organization (WHO), the neonatal mortality rate in Indonesia is the fifth highest, with 11.7/1000KH in 2021. Community conditions such as social, economic, and cultural education are the direct causes of maternal and newborn deaths (WHO, 2021). Primary neonatal mortality is triggered by complications involving intrapulmonary events at 28.3%, respiratory and cardiovascular issues at 21.3%, with low birth weight (LBW) and prematurity at 19%, neonatal tetanus at 1.2%, infections at 7.3%, and other causes at 8.2% (Ministry of Health of the Republic of Indonesia, 2019).

Referencing the Indonesian Demographic and Health Survey (SDKI), the infant mortality rate (IMR) in Indonesia is recorded at 32 per 1,000 live births, with the incidence of newborn infections ranging from 24% to 34%. Infection is the second leading cause of death after neonatal asphyxia, which is reported to reach around 49%–60%. Most newborn infections are caused by neonatal tetanus, which can be transmitted through the umbilical cord. Furthermore, the risk of infection is increased by cutting the umbilical cord with unsterile instruments and the use of traditional remedies, such as medicines, herbal medicines, or herbal powders, in umbilical cord care. (Trivedi et al., 2021)

Some Madurese people living in Madu Sari Village practice umbilical cord care using Madurese cloth and spices such as betel and jackfruit leaves. This technique is still used by Madurese in West Kalimantan Province, particularly in Kubu Raya Regency.

The Javanese are the largest ethnic group in Indonesia, possessing strong customs and traditions that are still practiced in daily life. This makes Javanese society an interesting subject of study, particularly in the realm of health culture, including medical practices and management of newborns (Amin, 2023).

Directly by traditional midwives and mothers of infants. In traditional medicine, jackfruit leaves are used to treat fever, boils, wounds, and other skin diseases. According to the compounds saponin, flavonoid, and tannin, they have the ability to act as antimicrobials and stimulate new cell growth in wounds. (Majid et al. (2019). In addition, betel leaves contain steroids, tannins, flavonoids, saponins, phenols, alkaloids, coumarins, emodins, and various active chemical compounds that function as antibacterial agents (Sadiah & Trianingsih, 2022).

In traditional medicine, jackfruit leaves are used to treat fever, boils, wounds, and skin diseases. The roots and fruit contain saponins. As antimicrobials, saponins, flavonoids, and tannins can stimulate new cell growth in wounds (Timisela et al., 2023) .

A previous study by Nurul Majid in 2019 found that jackfruit leaves contain flavonoids, saponins, and tannins. With their antibacterial activity, flavonoids and saponins damage the cytoplasmic membrane by denaturing bacterial cell proteins and irreversibly damaging the cell membrane (Majid et al., 2019).

According to researchers, the link between the use of jackfruit leaves and umbilical cord detachment is that saponin, flavonoid, and tannin compounds can help prevent bacterial growth that can slow wound healing. Preliminary studies found that treatment using jackfruit leaves caused the umbilical cord separation to occur within 3 days. Many hemicelluloses and cellulose are found in dried jackfruit leaves. Because lignocellulose is insoluble in acid solvents and water, sugaring plants containing cellulose will be more difficult. Lignin is the "cement" that provides stability to wood and binds cellulose fibrils (Timisela et al., 2023)

The practice of newborn care, deeply rooted in local culture, is not solely aimed at meeting health needs but also serves as a form of spiritual and emotional empowerment based on beliefs and traditions passed down through generations (Purnamasari et al., 2022). This is the reason why culturally based care practices, such as the use of traditional herbs, the performance of spiritually-tinged rituals, and various other actions steeped in cultural values and belief systems, are still widely used (Aeni, 2015; Hapsari, Izza, Indriyanni, 2017; Widyaningrum, 2017), despite the availability of modern healthcare services in Karanganyar Regency.

2. RESEARCH METHOD

The research utilizes a quantitative analytical approach with a cross-sectional design (Sugiyono 2019). This research took place at the Lemo Community Health Center (UPT Puskesmas), Central Kalimantan. The sampling technique used purposive sampling. 50 respondents who met the inclusion criteria, namely full-term newborns, were selected at the UPT Puskesmas Lemo, East Kalimantan. Sampling was carried out after prospective respondents were given an explanation of the background, objectives, and benefits of the research and obtained written consent from the research subjects. The research subjects were divided into two groups of newborns who underwent umbilical cord care using jackfruit leaf ash and without using jackfruit leaf ash. Statistical analysis utilized the chi-square test.

3. RESULTS AND DISCUSSION

Results

Table 1. Univariate Analysis Results.

Variables	N	%
Gestational Age		
Aterm	50	100
More or less a month	0	0
Umbilical cord care methods		
With jackfruit leaf ash	18	36.0
Without Jackfruit Leaf Ash	32	64.0
Total	20	100

As shown in Table 1, it is evident that all respondents had a history of a term pregnancy, with a total of 50 people (100%). Respondents based on the umbilical cord care method using jackfruit leaf ash were 18 respondents (36%), while respondents based on the umbilical cord care method without using jackfruit leaves were 32 respondents (64%).

Table 2. Relationship between Giving Jackfruit Leaf Ash and the Length of Time to Umbilical Cord Release.

Method	Umbilical Cord Removal Time				Total		P-Value
	<4 days		>4 days		n	%	
	n	%	n	%			
With Jackfruit Leaf Ash	27	84.4	5	15.6	32	100	0.003
Without Jackfruit Leaf Ash	8	44.4	10	55.6	18	100	

Based on Table 2. Of the 32 respondents who used the umbilical cord care method using jackfruit leaf ash, the umbilical cord release was in the fast category (<4 days) as many as 27 respondents (84.4%) and those who experienced the long category (>4 days) as many as 5 respondents (15.6%). Of the 18 respondents who used the care method using the method without jackfruit leaf ash, the umbilical cord release was in the fast category (<4 days) as many as 8 respondents (44.4%) and those who experienced the slow category (>4 days) as many as 10 respondents (55.6%). Based on the Chi-Square test, the P-value reached 0.003, falling below the 0.05 threshold, so there was a significant relationship between the method of umbilical cord care using jackfruit leaf ash and the length of time for umbilical cord release.

Discussion

Umbilical Cord Care

Umbilical cord care is a crucial aspect of neonatal care because it plays a direct role in the healing process and infection prevention in newborns. Once the umbilical cord is cut, it will undergo a drying process, necrosis, and eventually fall off naturally. The duration required for the umbilical cord to detach is greatly influenced by the care method used, the level of hygiene, and the baby's environmental conditions. The medically recommended umbilical cord care method is dry care, requiring the cord to remain clean and dry without applying any substances. This method aims to prevent excess moisture that can become a breeding ground for microorganisms. The use of dry, sterile gauze is often recommended to protect the umbilical cord from contamination and friction, especially in the early days of a baby's life. (Katarina, 2020)

However, in community practice, umbilical cord care is often influenced by local culture and beliefs, such as the use of jackfruit leaf ash, traditional herbs, or other natural ingredients. Research shows that the method of umbilical cord care using jackfruit leaf ash resulted in faster cord detachment than the method without jackfruit leaf ash. This is thought to be due to the ash's ability to absorb moisture, accelerating the cord's drying process. These results align with research by Medhyna and Nurmayani (2020) and Asiyah et al. (2017), which found that maintaining dry umbilical cord care can accelerate cord detachment. However, caution should be exercised regarding the use of traditional materials, as they can potentially lead to contamination if not used hygienically. Therefore, the role of health workers is crucial in educating mothers about safe, effective, and standard umbilical cord care .

Infection Factors in the Umbilical Cord

Umbilical cord infection (omphalitis) is a principal contributor to mortality and morbidity in newborns, particularly in developing countries. This infection occurs due to the entry of microorganisms through wounds in the umbilical cord stump that have not yet healed completely. Several factors are known to contribute to umbilical cord infection, including those from the infant, the mother, the environment, and care practices. One of the main factors contributing to umbilical cord infection is unhygienic cord care, such as the use of unsterile cutting instruments, the use of contaminated traditional materials, and poor hand hygiene when caring for the baby. A moist and covered umbilical cord can also slow the drying process and increase the risk of bacterial colonization.

Furthermore, maternal knowledge also influences the incidence of umbilical cord infections. Mothers who lack information about proper umbilical cord care tend to follow traditional practices without considering hygiene and safety. This matches research (Maharani et al., 2016) asserting that low maternal knowledge is associated with an increased incidence of umbilical cord infections in newborns. Environmental factors also play a significant role, including unhygienic environments, high density, and poor access to healthcare facilities. Furthermore, delays in recognizing signs of infection, such as redness, swelling, purulent discharge, or an unpleasant odor from the umbilical cord, can worsen the baby's condition and increase the risk of serious complications such as neonatal tetanus and sepsis.

Therefore, comprehensive efforts to prevent umbilical cord infections require proper umbilical cord care, increased health education for pregnant and postpartum women, and strengthening the role of healthcare workers in providing postpartum support and monitoring. With proper care and a supportive environment, the risk of umbilical cord infection in newborns can be significantly minimized.

The Relationship between Jackfruit Leaves and Umbilical Cord Care

Evidence from the research results provided in Table 2, a relationship was found between umbilical cord care methods and the length of time it took for the cord to detach in newborns. The study involved 50 infants, divided into two groups based on umbilical cord care methods: care with jackfruit leaf ash and care without jackfruit leaf ash.

Data from the analysis revealed that in the group of babies who received umbilical cord care using jackfruit leaf ash, most experienced umbilical cord detachment in less than 4 days, namely 27 babies (84.4%), while only 5 babies (15.6%) experienced umbilical cord detachment in more than 4 days. On the other hand, in the group of babies who were treated without using jackfruit leaf ash, the majority of babies experienced umbilical cord detachment in more than 4 days, namely 10 babies (55.6%), while only 8 babies (44.4%) experienced umbilical cord detachment in less than 4 days.

The Chi-Square statistical test results yielded a p-value of 0.003 ($p < 0.05$), indicating a significant link between the cord care technique and the duration of umbilical cord detachment. Thus, it is concluded that umbilical cord care using jackfruit leaf ash is linked to quicker cord release compared to the method without jackfruit leaf ash.

The umbilical cord is a portal of entry for germs, potentially rapidly triggering severe infections and even sepsis. Therefore, implementing hygienic care techniques during clamping, cutting, tying, and subsequent cord care is a crucial fundamental principle in preventing sepsis in neonates (Battya et al., 2019).

Prolonged cord detachment and drying can increase the risk of infection and slow the healing process. This condition requires monitoring for symptoms of infection including redness, swelling, pus, an unpleasant odor, or bleeding in the umbilical cord area (Lestariningsih & Nursing, 2022).

Newborn hygiene is crucial before performing umbilical cord care. This care is recommended after the baby has been bathed, approximately six hours after birth, to minimize the risk of contamination and infection (Fitrihelda et al., 2023).

In theory, umbilical cord detachment is influenced by several factors, including the drying process, cleanliness, humidity levels, and the presence of microorganism contamination. The use of jackfruit leaf ash in cultural practices is believed to help accelerate the umbilical cord drying process due to its moisture-absorbing properties. A drier umbilical cord will accelerate the necrosis process and ultimately accelerate umbilical cord detachment. These results echo findings by Medhyna and Nurmayani (2020), noting that open umbilical care keeping the cord dry and clean can accelerate the time of umbilical cord detachment. Another study by Asiyah et al. (2017) also stated that high humidity in the umbilical cord can slow the detachment process and increase the risk of infection.

However, although the use of jackfruit leaf ash has been shown to be associated with faster umbilical cord separation, this practice still requires special attention from health workers. The use of traditional materials that have not undergone a sterilization process has the potential to increase the risk of bacterial contamination if not used hygienically. This is in line with the opinion of Yuliana et al. (2017) who stated that traditional umbilical cord care practices may heighten the risk of infection if not accompanied by adequate knowledge and hygiene. Therefore, health education is needed for mothers and families regarding safe umbilical cord care, emphasizing the importance of keeping the cord clean and dry and using sterile materials. Cultural approaches can still be considered, but must be aligned with safety principles and neonatal health care standards.

The results of this study indicate that infant massage interventions conducted for 7 consecutive days had a positive impact on improving the sleep quality of infants between 2 and 6 months of age. The majority of infants experienced increased nighttime sleep duration and decreased frequency of awakenings. This suggests that infant massage functions as a form of calming tactile stimulation and stimulates the parasympathetic nervous system, thereby accelerating the process of relaxation and sleep. This physiological effect was also revealed by Field et al. (2019), who stated that infant massage can reduce cortisol levels and increase melatonin levels.

The current research concurs with the findings of Aruan et al. (2025), which reported that infants aged 3–6 months who received regular massage experienced an increase in sleep duration from 7.2 to 9.1 hours per night. The study used a quasi-experimental design and showed that the massaged infants had better sleep quality than the control group. Similarly, a study by Putri (2024) concluded that infant massage effectively improves sleep quality by increasing emotional comfort and decreasing infant reactivity to external stimuli.

4. CONCLUSION

Research findings presented in the table of the relationship between umbilical cord care methods and the length of time for umbilical cord release, the data reveals a major discrepancy between umbilical cord care using jackfruit leaf ash and care without jackfruit leaf ash a notable contrast in the duration of umbilical cord separation. Most babies who received umbilical cord care with jackfruit leaf ash experienced umbilical cord release in less than 4 days, which was 84.4%, while only a small portion experienced umbilical cord release in more than 4 days. In contrast, in babies who were treated without using jackfruit leaf ash, the majority experienced umbilical cord release in more than 4 days, which was 55.6 %.

The statistical test results showed a p-value of 0.003 ($p < 0.05$), suggesting the presence of a statistically significant relationship between the umbilical cord care method and the length of time for umbilical cord release. Thus, the umbilical cord care method using jackfruit leaf ash is proven to be associated with faster umbilical cord release than the method without jackfruit leaf ash. Although the treatment method with jackfruit leaf ash shows faster results in umbilical cord release, its implementation still needs to consider aspects of cleanliness and safety to prevent the risk of infection. Therefore, umbilical cord care should be carried out by paying attention to the principle of ensuring the umbilical cord dry, clean, and free from contamination, and accompanied by appropriate education to the mother so that umbilical cord care is carried out safely in accordance with health standards.

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