

Harmful Traditional Practices of Umbilical Cord in Edaga Hamus Community, Asmara, Eritrea

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Purpose: Globally, the cord care practices contribute to neonatal infections and account for a large proportion of neonatal deaths annually, especially in low-income countries. This study has been provoked by the absence of previous similar research in this locality. The study aimed at exploring and highlighting the factors and practices in the community that influence umbilical cord care to identify the areas of intervention.

Methods: This was a cross-sectional study conducted among mothers of neonates in Edaga Hamus community who had given birth a month prior to the study. The research team prepared a questionnaire used for data collection on a face-to-face interview, which lasted for 15 minutes for each participant. SPSS version 22 was used for quantitative analyses. Descriptive statistics were presented in frequencies and percentages, and bivariate correlations were used to analyze the association between independent and dependent variables.

Results: One hundred and seventy-five women participated in this study, with an age range of (19 to 43) years (28.5 ± 5.1 years) of whom (84.5%) used the dry care method, whereas (19%) of the total cord infections were related to different traditional practices. A higher proportion of women (90%) expressed fear and depression once the cord became infected. A greater number of women followed the advice given by nurses, and this finding was significant (p value = 0.008).

Conclusion: Majority of the participants in this study acknowledged the importance of using the dry care method as recommended by World Health Organization. Those neonates whose cords were exposed to unwarranted practices had delayed detachment. This study confirmed that health promotion in cord care practices should involve family members and the community to achieve successful outcomes.

Keywords: cord care, neonate, newborn, practices

Introduction

Sanitation conditions and inadequate water supply are critical for cord contamination, especially in low-income settings where the above-mentioned facilities are rarely accessible to families. Coupled with overcrowding and poor income, affecting purchasing power compromises the maintenance of hygiene practices, including buying of over-the-counter antiseptic solutions.

The umbilical cord is a lifeline for the unborn fetus, providing vital nutrients and respiratory gases and playing a major role in the excretion of waste produced by the unborn fetus. After birth, the umbilical cord that is free from any signs of infection, such as redness, warmth on the stump, foul smell, pus, or swelling, is referred to as unhygienic umbilical cord.¹⁻³

Colonization of bacteria in umbilical vessels and omphalitis, an infection of the umbilical cord, leads to septicemia, which is one of the main causes of neonatal morbidity and mortality.⁴ Globally, neonatal mortality, defined as death occurring within the first 28 days of life, represented 45.1% of all child deaths in 2015, a 15% increase over a span of 15 years.⁵ The World Health Organization (WHO) estimates that one-fourth of the world's neonatal deaths are mainly due to

infection, three-fourths of which occur in the first week of life, and the umbilical cord was found to be the main means of entry.⁶

In developing countries, the WHO appraised there is a 6–8% inclination of omphalitis among infants, with an incidence of 0.7%.^{7–9} Neonatal sepsis originates from the umbilical cord, and its anatomical presentation is conducive to the entry of pathogenic bacteria.

Studies in developing countries have shown that septicemia accounts for approximately 1.6 million neonatal deaths per year and 10–30% of these deaths occur in Kenya.^{10,11} Special attention has been paid to the ideology of good care of the umbilical cord based on the above findings.

Despite this fact, further emphasis has been placed on aspects other than cord care after birth and traditional practices. Such interventions include cord clamping and use of antimicrobials on the stump. Therefore, prevention of the disease and its associated neonatal mortality is of great public health importance.

The umbilical cord has further effects on the parents. Delays in cord separation or healing after infections in this specific area may lead to the application of antimicrobials, which indirectly increases the cost of postnatal care. This is supported by a study in developing countries, where the number of visits proportionally increased when there were any problems in the umbilical cord, thus determining the number of postnatal visits by midwives. Delays in umbilical cord separation time infections of the stump with manifestations such as pus, umbilical discharge, and odor have negative psychological effects on the parents of the infant.

In different societies, there are diverse practices and beliefs regarding the application of the umbilical cord, some of them are beneficial and not harmful to the stump, but some are dangerous and lead to severe infections. The WHO demonstrated that people will not stop discovering new practices as long as they help their infants' health; hence, they have to be convinced of new and better alternatives. Different traditional practices are used, including ash, oil, butter, cow dung, spice paste, herbs, and mud. These substances are not safe for use because they are habitats for pathogenic bacteria and spores, which are the main cause of umbilical cord infections.^{12,13}

This study mainly focused on the common harmful traditional practices of umbilical cord care associated with the separation time of the umbilical cord in the Edaga hamus community. Since this subject of study has not been done previously in Eritrea, the outcome will help healthcare workers understand the practices that society is interested in and will guide them in planning health promotion and increasing awareness of the harmfulness of the practices.

Methodology

Design

This was a community-based cross-sectional study which employed quantitative analysis that was carried out from September 2020 to November 2020 on women of reproductive age in an urban community in Edagahamus, Asmara, and Eritrea.

Study Population

The study participants were women of reproductive age range of (19–43) who had given birth to a baby in the period of a month prior to the study. A total of 175 women were included in the study on purposive sampling due to the number that was available. Women who delivered via vaginal and cesarean section without complications tended to adhere to the inclusion criteria. The exclusion criteria were women who had abnormal deliveries (breech, forceps, and vacuum) and neonates delivered with birth defects.

Data Collection

The data collection instrument was a questionnaire with both closed- and open-ended questions. The questionnaire was developed by the study research team who put their expertise and experience in research into the work of generating the tool. Data were collected through face-to-face interviews with every woman by the research team in the Edaga Hamus community.

Data were collected after the proposal was approved by the Health Research Proposal Review and Ethical Committee (HRPREC 08/2020). This review abides by rules and regulations in accordance with the Declaration of Helsinki. Informed written consent was obtained from all participants, and confidentiality was ensured.

Statistical Analysis

SPSS version 22 (IBM Corp., Armonk, NY, USA) was used for data analysis. This study used descriptive statistics presented in frequencies and percentages to analyze the socio-demographic factors, type of dressing used, and frequency of infections among the infants. Bivariate correlation was used to examine the independent variables with the type of dressing the women in umbilical cord care used, with a confidence range of 95% confidence interval and p -values <0.05 were considered as statistically significant.

Result and Discussion

Table 1 shows that a higher proportion of the participants were in the age category 26–32 years, represented by 40.8%, with the mean of 28.5 ± 5.1 years. Illiteracy level was the lowest, at 2.3%, among the participants. Unemployment stood at 86.3% among the women. Most of the participants in the study were Christians.

Table 2 shows that a greater number (84.5%) of the women used the dry care method. The lowest number (4.6%) was using herbs. The mean umbilical cord separation time was 5.82 ± 1.54 days, and the majority of infants had their umbilical cord detached below mean (70%).

Table 3 shows that infections were also observed among the mothers who practiced the dry care method. Women who applied different traditional practices contributed to 19% of the total cord infections.

Table 1 Socio-Demographic Characteristics of the Mother

Characteristics	Category	%
Age	19–25	31.6%
	26–32	40.8%
	33–43	27.6%
Level of education	Illiterate	2.3%
	Primary	18.3%
	Secondary	58.9%
	Higher education	20.6%
Occupation	No job (housewife)	86.3%
	Employee	13.7%
Religion	Christian	85.1%
	Muslim	14.9%

Table 2 Umbilical Cord Care and Separation Time of the Infants

Umbilical Cord Care	Frequency	Percent	Cord Separation Time MEAN (5.82 ± 1.54 Days)	
			Above Mean	Below Mean
Dry care method	148	84.5%	42	106
Antibiotics	9	5.1%	1	8
Herbal treatment	8	4.6%	2	6
Other specific	10	5.8%	7	3

Table 3 Practices Vs Infections

Practices		Does the Umbilical Cord Have Infection	
		Yes	No
	Dry care method	26	122
	Antibiotics	2	7
	Herbal treatment	2	6
	Other specific	1	9
Total		31	144

Table 4 Other Specific Umbilical Cord Practices (N = 175)

Other Specific Practices Post Infections	Frequency	%
Dry care	126	72%
Vaseline	22	12.6%
Sesame	6	3.4%
Swab with boiled water	8	4.6%
Cow dung	1	0.6%
Vegetable oil	4	2.3%
Eye drop	5	2.9%
Herbal	3	1.7%

Note: Table 4 shows that cow dung was the least (at 0.6%) used practice by women in the study.

Table 5 Attitude of the Women Post Infection

Attitude of the Women on Infection	Infection of Umbilical Cord	
	Yes	No
Depressed	13	0
Fear	15	1
Not affected	3	143
Total	31	144

Among the various practices, this study found cow dung was the least (at 0.6%) used practice by women in the study, and dry care method was the most applied method of cleaning the umbilical cord (Table 4).

Table 5 shows that a higher number (15) of the women expressed fear once the cord had become infected. As well as this, 13 of the women were deeply depressed. This constitutes a high proportion (90%) of the total.

Table 6 shows that women in the midpoint of reproductive age (26–32) led in the use of dry care cord method, followed by those in the lower age bracket of reproduction. Education status of the women influenced their practices in cord care. A greater proportion of the women did follow the advice that was given by nurses, and this had significant findings in this study (at a *p* value of 0.008). The number of antenatal care visits among women had an impact on the method used for cord care.

Table 6 Bivariate Correlation of Independent Factors on the Type of Cord Care

Independent Variables		Dry Care	Practices	Pearson Correlation Coefficient	p value
Age	19–25	50	10	–0.04	0.55
	26–32	65	13		
	33–43	33	4		
Educational level	Illiterate	3	1	–0.07	0.30
	Primary	27	5		
	Secondary	85	18		
	Higher education	33	3		
Mother's occupation	No job (housewife)	127	24	–0.05	0.46
	Employee	21	3		
Who influenced you for practice	Myself	24	9	0.19	0.008
	Nurse	70	3		
	Mother	42	12		
	Sister	7	1		
	Husband	3	0		
Does the umbilical cord have an infection	Yes	26	5	–0.09	0.90
	No	122	22		
Number of ANC visits	0	5	1	0.03	0.67
	1	8	2		
	2	15	1		
	3	45	7		
	4 and above	75	16		

Discussion

This research has reported factual insights into the traditional practices that are common in Asmara, Eritrea. Although the study revealed that more than half of the mothers applied medically recommended practice that is dry care method. This is greater number than studies done by Nuru in Tabora Region¹⁴ where practice of umbilical cord care was exceptionally poor, as only 21% of them had good cord care practice, and another finding by O'Brien practiced dry cord care ($n = 17$, 14.9%).¹⁵

A higher proportion of the participants were in the age category of (26–32) years at (40.8%). A study in Nigeria had a similar cohort, whereby the majority (40.5%) of mothers were in the age range of (26–30) years.¹⁶ This is a consequence of the population reproductive concentration bracket, whereby most women were married and nursed their offspring as well.

The illiteracy level was the lowest (at 2.3%) among the participants 75% of the illiterate applied the recommended care (dry care), over half of the women had reached secondary or high school level (58%), and 82% of this group used dry care. Furthermore, education status is influenced by the availability of various infrastructures within the urban settings of this group of participants. Another study in Southeast Nigeria reported a finding that supports this study, in which the educational level of mothers had a strong relationship with the umbilical cord status of their babies. Babies whose mothers had no formal education and those who attained a primary level of education used harmful substance applications applied as umbilical cord care compared to those whose mothers had a tertiary level of education.¹⁷ This was also consistent with results in Nigeria¹⁸ and Sri Lanka¹⁹ that found that a higher level of education of mothers had a positive impact on their choice of dry care practice.

Unemployment accounted for 86.3% of the women, which was explained by the fact that the education level did not translate to securing a job opportunity, as many of the women hardly attained a college level, in addition to the limited opportunities in the employment sector.

Most participants in the study were Christians, which is attributable to the population balance in religious practices with an obvious inclination towards the Christian way of life by most of the population.

The traditional practices used in this study were Vaseline jelly, sesame, vegetable oils, butter, cow dung, prescription antibiotics, and herbal treatments. A study by Isah et al showed similar findings, where the most common substance applied to the cord after cleaning was warm water, methylated spirit, Vaseline, herbs, and local preparations.²⁰

A greater number (84.5%) of the women used the dry care method as a result of the nurse's endeavors to satisfy the health personnel advocacy strategy in the application of the best method of cord care; hence, this had significant findings in this study (at $p = 0.008$), and mothers were the second main source of information on cord care. This is consistent with the finding that nurses were the highest source of information regarding the type of cord care dressing. This is consistent with the findings in Bayelsa State,²¹ Benin,²² and Calabar.²³ This is because mothers are the first group of the community that holds the largest duty to pass the customs and traditions accompanied with practices on neonates; hence, this group needs to be given some focus, as the information they tend to teach to their daughters, and the rest of the women in the community could be harmful as it does not agree with the opinion of medical experts.

This study showed that 72% of the women preferred and applied dry care, and only 28% applied traditional practices. This finding is much lower than that reported in similar studies. A study conducted in Ethiopia showed that more than half (54.7%) of respondents reported having applied unnecessary substances to the cord (15). Similar studies have been conducted in Rwanda (54%),²⁴ the Chitwan district (95%),²⁵ East Gojjam (94.6%),²⁶ and Nepal (73%).²⁷ The large variation in the findings of these studies with the current study could be due to differences in sample size, study setting, study methods used, as well as multicultural differences among the countries. However, the current study also provides an understanding of the role played by nurses and that public health officers in Health Promotion and Education in Hospitals had a positive impact on this outcome.

The umbilical cord separation time took a longer time to detach when traditional practices such as sesame, vegetable oils, and butter were applied in seven infants, as the day of separation was delayed to above the mean (5.82), the longest day for separation was on the 12th day. This could be due to the oily constitution of these practices acting as a barrier and blocking air movement around the cord, which is important for the drying and detachment of the umbilical cord.

The number of antenatal care visits among women had an impact on the method used for cord care because the lower the number of visits, the lower the rate of dry cord care application. The least numbers (4.6%) were using herbs that were affected by women's frequent health facility visits; therefore, this created awareness of the negative use of herbal treatments for cord care.

Traditional practices contribute to 19% of cord infections, including the use of Vaseline jelly, sesame, vegetable oils, butter, out of prescription antibiotics, and herbal treatment. A high number as these harmful traditional practices of the cord are one of the main sources of infection in newborns, accounting for a large proportion of annual neonatal deaths. Infections were also observed among the mothers who practiced the dry care method, which could be explained by the fact that the women might not have understood the infection presentation at the initial phase and acquired infections at birth via the passage that later presented as cord infection.

The findings of the study showed that some women were not affected by the observation of the cord infection due to their incompetence in how to react, lack of awareness on the infection progression, and holding strong weak or wrong ideas on the effect of cord infections on the baby. However, a higher number (15) of women expressed their fear once the cord became infected; however, this exemplifies the impact of health promotion and education on the ability of women to identify cord infections and develop reactions. Of these 15 women, 13 were deeply depressed, as uncertainty would engulf them to a point of indicating a depressive mood on the cord infections. A similar result was found in a similar study in Nigeria, as worrisome was the main reason for the application of inappropriate substances and methods with the potential for cord infection by respondents, even in the face of 95.5% ANC attendance.²⁰

Conclusion and Recommendation

The study pinned on the correlation between socio-demographic influences on nursing women and cord care practices, such as education level, age, and economic status, which had a greater effect on women's practices.

Majority of the participants in this study acknowledged the importance of using the dry care method as recommended by World Health Organization. Those neonates whose cords were exposed to unwarranted practices had delayed detachment. This study confirmed that health promotion in cord care practices should involve family members and the community to achieve successful outcomes.

Unrecommended harmful traditional cord care practices lead to infections in babies and delay detachment of the umbilical cord.

Health education and promotion of cord care practice should involve family members and the community for successful outcomes on the best practices, which will in turn reduce or eliminate cord infection in the neonatal period.

The World Health Organization's dry cord care practices should be emphasized from antenatal care clinics to the time of delivery and post-delivery of the baby.

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Author Contributions

All authors in this work contributed immensely towards this research, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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Disclosure

The authors report no conflicts of interest in this work.

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