

# The Effect of Knowledge and Practices on Umbilical Cord Care Among Mothers Attending Post Natal Clinic at Kampala International University Teaching Hospital, Western Uganda

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## ABSTRACT

Proper care of the umbilical cord is very necessary in order to avoid potentially fatal infections in newborns, such as neonatal sepsis. These infections play a major role in the 2.9 million newborn fatalities that occur each year worldwide; rates are greater in underdeveloped nations where home deliveries and improper cord care are more common. Over 30% of the 3.3 million newborn fatalities in sub-Saharan Africa each year are due to infections, some of which are the result of inadequate cord care. The danger of infection is increased by harmful customs such as putting materials to the umbilical stump, such as sand, cow dung, or herbs. Pathogens such as *Clostridium tetani* may infect the cord region via the birth canal, the delivery environment, and the hands of birth attendants. Certain microorganisms are commensal in nature, while others have the ability to enter the circulation and cause newborn sepsis. Infections account for over one-third of newborn mortality worldwide; in places like Uganda where home birth rates are high, this percentage is higher. The use of different medicines by more than half of Ugandan women to promote cord stump repair raises the risk of infection. In the crucial first 24 hours after giving birth, the majority also neglect to wash their infants. In this setting, it is critical to evaluate the knowledge and actions of mothers about appropriate dry cord care. In order to detect gaps and guide educational interventions to lower newborn morbidity and death from avoidable cord infections. This study carried out at Kampala International University Teaching Hospital intends to evaluate the extent of knowledge and practices and the effect on umbilical cord care among mothers.

**Keywords:** Umbilical cord, *Clostridium tetani*, newborn fatalities, sub-Saharan Africa

## INTRODUCTION

The umbilical cord is a unique tissue that connects the unborn baby to the mother through the placenta for oxygen, nutrients, the excretion of carbon dioxide, and other metabolites. This cord should be cut and dressed with sterile materials. Literature reveals that the devitalized tissue of the cord can be an excellent medium for bacterial growth, especially if the cord is kept moist and unclean substances such as sand from doorposts, herb preparations, cow dung, roots, or back trees are applied [1,2,3]. Globally 2.9 million newborn babies die of neonatal sepsis each year, which comes after poor cord care and has emerged as a principal challenge to further reductions in neonatal mortality [4,5]. Severe cord sepsis is one of the top three causes of neonatal death worldwide, causing 13% of all neonatal deaths [6,7]. In sub-Saharan Africa, it has been reported that about 3.3 million neonatal deaths occur annually, of which more than 30% are caused by infections, some of which start as umbilical cord infection [8, 9]. According to a study done in Zambia, optimal umbilical cord care practices for newborns during the first week of life, especially in settings with poor hygiene, have the potential to avoid these preventable neonatal deaths, and harmful traditional cord-care practices are often cited as an important public health concern [10,11]. The umbilical cord area supports the growth of some innocuous or beneficial microorganisms (commensals), whereas others are harmful, for example, *Clostridium tetani*, and therefore it is necessary to properly care for the cord after birth. Sources of these bacteria include the mother's birth canal, the environment in which the neonate is delivered, and the hands of the person assisting with the delivery. Cord infection may be localised to the umbilical cord (omphalitis) or, after entry into the bloodstream, become systemic (e.g., neonatal sepsis) [12,13]. Nearly a third of neonatal deaths are associated with infections such as omphalitis, and this proportion is higher in areas and countries where nearly half of the births occur at home, such as Uganda [14]. At such places infections of the umbilical cord stump (omphalitis) are a significant contributor to these infections in new-born babies in developing countries. In Uganda, over 50% of the mothers apply various substances to the cord of their babies to quicken the healing, and most of the mothers do not bathe their babies within the first 24 hours of birth [15]. The researcher therefore wants to conduct a study on the knowledge and practices of umbilical cord care among postnatal mothers attending KIU-TH.

About 130 million babies born globally, 4 million (3.1%) die within the first 28 days, 21% of whom are due to umbilical wound sepsis because of poor cord care [16]. In Africa, most cord care takes place at home since a significant number of mothers deliver at home [17,18]. Optimal umbilical cord care practices for newborns and during the first week of life, especially in settings with poor hygiene, have the potential to avoid preventable neonatal deaths [19]. Sub-Saharan Africa contributes 67% to global under-5 Mortality and also affirms that the prevalence is even higher in communities that practice the application of non-sterile home remedies to the umbilical cord [20,21]. According to a KIU-TH annual recent report, neonatal sepsis accounted for 60% of neonatal admissions, and most of the admissions were due to poor cord care. The objective of this research was to find out the knowledge and practices of umbilical cord care among postnatal mothers attending KIU-TH. The study was designed to determine the effect of knowledge and practices on umbilical cord care among postnatal mothers at KIU-TH.

## METHODOLOGY

### Study Design

The study used a cross-sectional descriptive design and employed quantitative data collection methods. This helped to analyse the problem in question since it involved using numbers and situations to explain the occurrence of the problem.

### Area of Study

The study was carried out in Kampala International University Teaching Hospital, which is found along Mbarara-Kasese Road in Bushenyi-Ishaka Municipality, in south-western Uganda. Kampala International University Teaching Hospital is a private hospital in partnership with the government of Uganda for a programme that runs the free treatment policy. The hospital's location lies approximately 360 kilometres (220 mi) by road, southwest of Kampala, the largest city in the country. The coordinates of the hospital are 0° 32' 29.04S, 30° 8' 25.80 E (latitude: 0.5414; longitude: 30.1405). The hospital has a private and a public wing with a total bed capacity of about 1000. The five major disciplines present are internal medicine, obstetrics and gynaecology, surgery, psychiatry, and paediatrics. There are a total of 250 beds. Daily, the hospital has over 100 in-patients and 150 out-patients. The hospital serves a population of about 2 million people. The scope is wide, as many patients come from even neighbouring Kigali, Rwanda. It has special clinics, for example, mother-child health, the Mental Health Clinic (MHC), ophthalmology, dental, ear, nose, and throat (ENT), radiology, and dermatology, which work throughout the week.

### Study Population and Rationale

The study population included mothers in postnatal ward KIU-TH. These mothers had the best information since, at that moment, they were carrying out cord care.

### Inclusion Criteria

All mothers with live babies in the postnatal ward at KIU-TH who freely consented to participate in the study were eligible for the study.

### Exclusion criteria

- i. Mentally ill mothers.
- ii. Mothers with hearing problems

### Sample Size Determination

The sample size was calculated using thus

Where n was the desired sample size,

Z: The value for Z was found in statistical tables, which contain the area under the normal curve. e.g., Z = 1.96 for a 95% level of confidence

e = was the desired level of precision = 5%

p was the estimated proportion of an attribute that is present in the population, and

24.0% is the percentage of mothers whose children develop umbilical cord infections in Uganda, according to a study done at Naguru Hospital [21].

$$q = (1-p)$$

$$q = 1-0.24 = 0.76$$

$$\text{Sample size, } n = \frac{(1.96)^2 \times 0.24 \times 0.76}{0.05 \times 0.05}$$

$$n = \frac{0.357504}{0.0025}$$

$$n = 143$$

Therefore, to cater for incomplete forms, the sample size to be considered was 150.

### Sampling Procedure

The convenience sampling method was used for this study. This was the least rigorous technique, involving the selection of the subjects. Given that this study took a short period, this method was appropriate since it used groups that were handy, available, and most accessible in terms of time, effort, and money.

### Data Collection Procedures

Primary data was obtained using a structured questionnaire administered in English and Runyankole. The investigator introduced herself to the prospective participants and read to each participant the consent form, the title and purpose of the study, as well as the rights of the participants throughout the study. Mothers in the postnatal ward who consented to participate in the study were given questionnaires to fill out on their own so that they could answer the questions privately and therefore feel secure in terms of confidentiality. The investigator recorded all the questionnaire serial numbers. This was done to ensure data quality as the data was entered in the coding box.

### Quality Control

The data collected was coded and cleaned. Any inconsistencies were checked out, and then the data was summarised manually at the end of each day. All hard-copy information from the respondents was kept under lock and key. Electronic information was secured on the computer with a strong password.

### Data Analysis and Presentation

The collected data was first summarised manually by using paper and pens and tallying, then electronic methods were utilized. After this, the researcher presented them in percentages, tables, bar graphs, and pie charts generated by Microsoft Excel version 2013.

### Ethical Considerations

Permission was sought from the university and KIU-TH authorities to collect the data required for the study. A written consent form explaining the rationale for the study, the benefits and rights of respondents, and confidentiality to protect the respondents was presented to the respondents for them to obtain written consent.

## RESULTS

### Socio-Demographic Characteristics of Mothers and Children

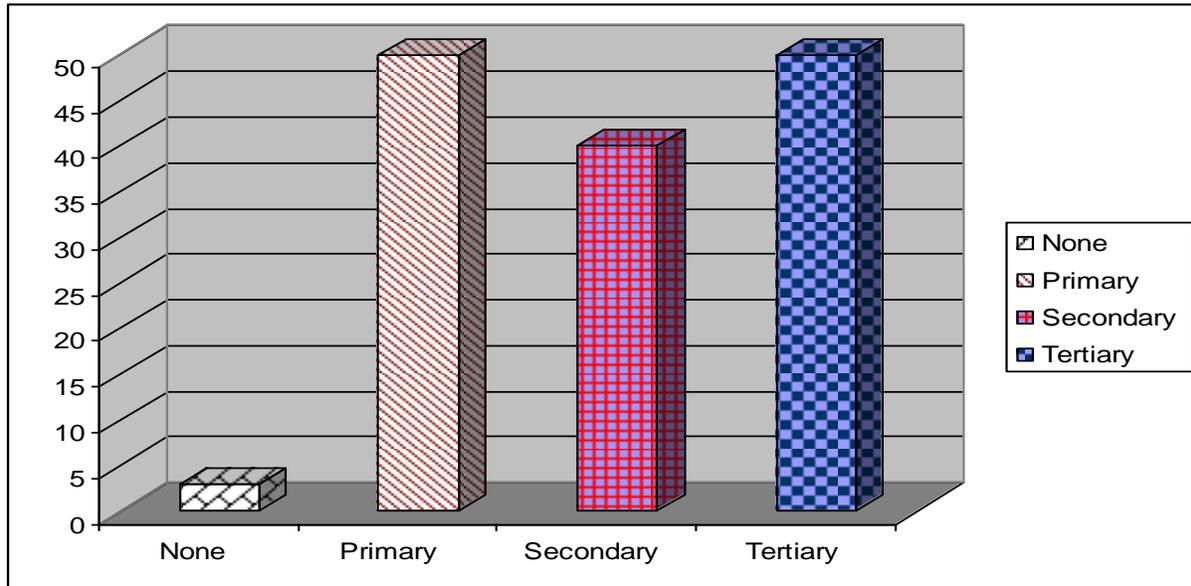
Table 1: Age Bracket of Mothers and Children

The age bracket of children	Frequency	Percentage (%)
1-4 days	20	14
4-8 days	96	67
8-12 days	27	19
Total	143	100
<b>Age bracket of mothers</b>		
15-20	40	28
21-30	38	26
31-40	47	34
Above 40	18	12
<b>Total</b>	<b>143</b>	<b>100</b>

### Source: Field findings (2020)

Responses according to age indicated that 20 (14%) of the babies were between 1-4 days old, 96 (67%) of the babies were between 4-8 days old, and 27 (19%) were between 8-12 days old. All the above were under the umbilical cord care of their mothers. Also, the age bracket of mothers indicated that the majority, 47 (34%), of the mothers were aged between 31 and 40 years, followed by 40 (28%), who were aged between 15 and 20 years. Also, 38 (26%) of the mothers were aged 21-30 years, while only 18 (12%) were aged above 40 years.

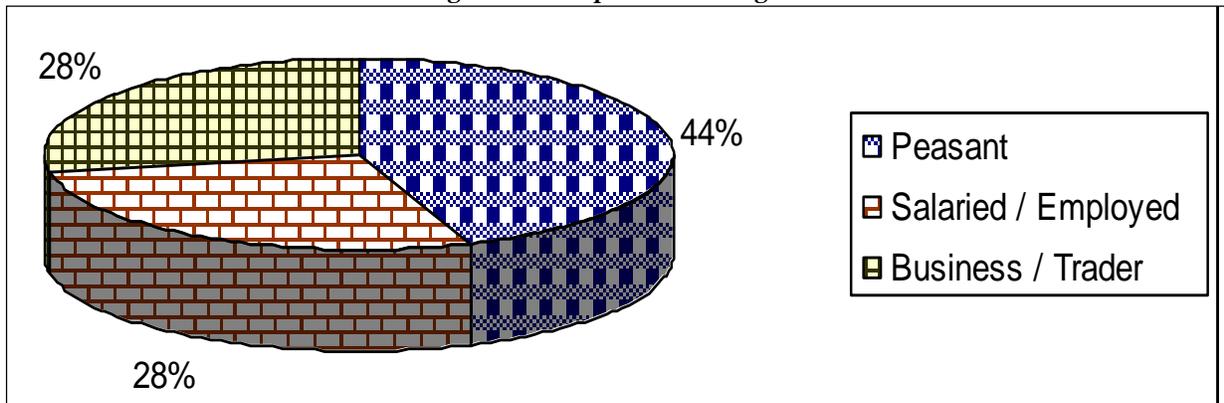
**Figure 1: Caregivers' Education Level**



**Source: Field findings (2020)**

Responses to education indicated that the minor population (3%) was not educated to any level, followed by 50 (35%), who were educated up to the primary level. Also, 50 (35%) had tertiary levels of education, and 40 (28%) had a secondary level of education.

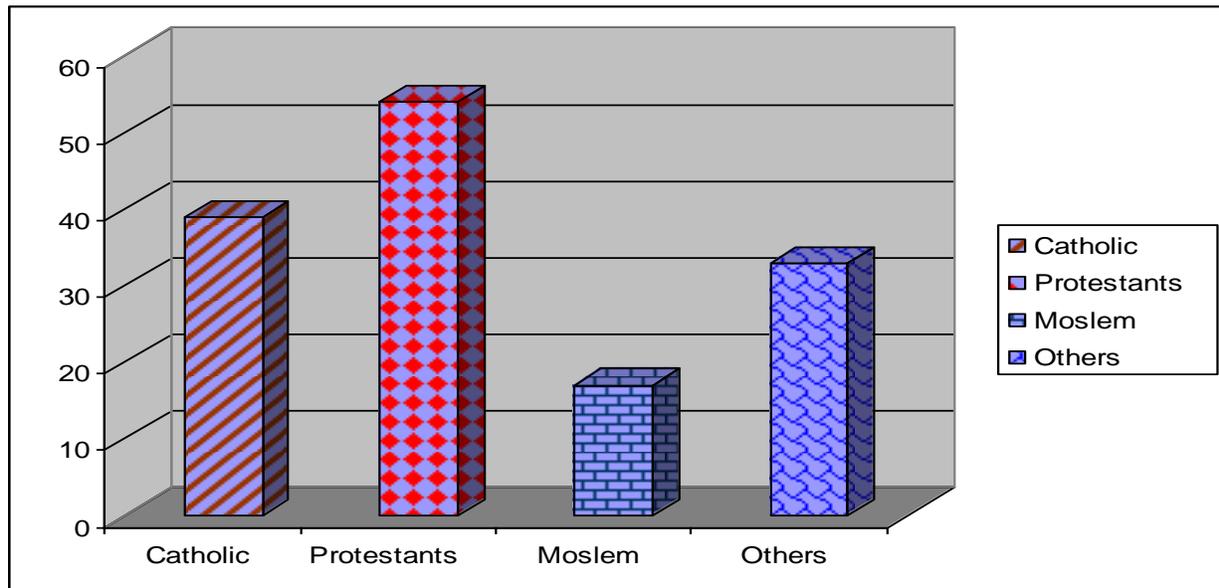
**Figure 2: Occupation of caregivers**



**Source: Field findings (2020)**

Responses on the occupation of caregivers indicated that the majority 63(44%) were peasants, followed by 40(28%) who were salaried/employed employees and 40(28%) were business mothers and were engaged in business.

**Figure 3: Religion of Caregivers**



**Source: Field findings (2020)**

According to religion, 39(27%) of the respondents were Catholics, while the majority 54(38%) were protestants. Also, 17(12%) were Moslems, and only 33(23%) were from other religions, which included born-again.

**Table 2: Mothers' Marital Status**

Mothers' Marital status	Frequency	Percentage (%)
Single	19	13
Married	124	87
Divorced / Separated	-	-
Widowed	-	-
<b>Total</b>	<b>143</b>	<b>100</b>

**Source: Field findings (2020)**

Responses on mothers' Marital status indicated that 19(13%) were single mothers, followed by the majority 124(87%) who were married. None of the respondents were divorced or widowed.

**Table 3: Mother's monthly household income in SHs**

Mothers' Marital status	Frequency	Percentage (%)
Between 10,000= to 100,000=	43	31
110,000= to 300,000=	50	35
310,000= to 500,000=	45	31
Above 510,000=	5	3
<b>Total</b>	<b>143</b>	<b>100</b>

**Source: Field findings (2020)**

Findings on Mother's monthly household income in SHs indicated that 43(31%) earned a monthly income of between 10,000= to 100,000=, while the majority 50(35%) earned a monthly income of between 110,000= to

300,000=. 45(31%) earned a monthly income of between 310,000= to 500,000=. Lastly, 5(3%) earned a monthly income of above 510,000=.

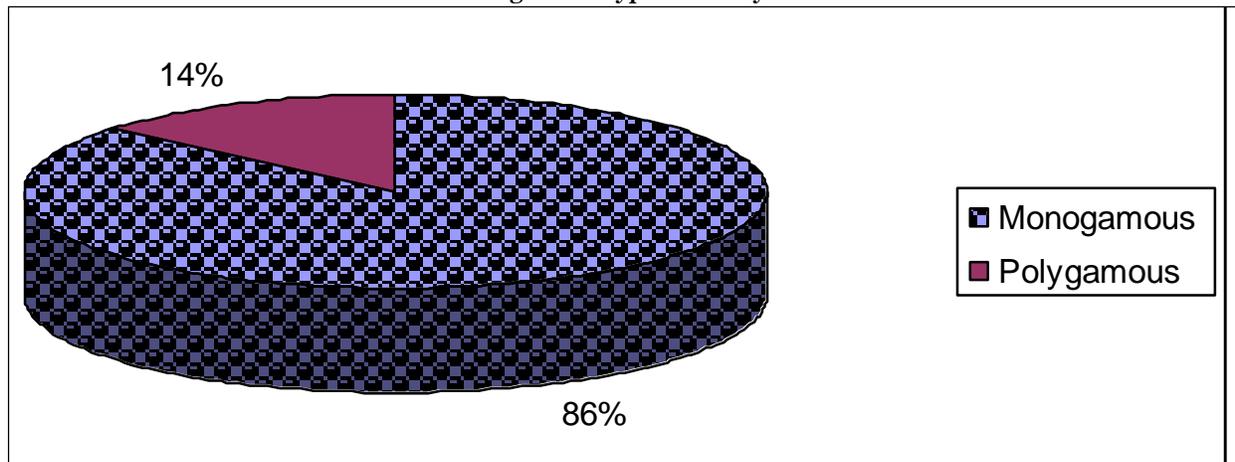
**Table 4: Number of people in mothers' household and number of children below 5 years**

Number of people in mothers' household	Number of people in the household	Number of children below 5 years
2-3 people	19	1
4-6 people	50	2-3
Above 7 people	74	3-4
<b>Total</b>	<b>143</b>	<b>100</b>

**Source: Field findings (2020)**

Responses on the number of people in mothers' households, 19(31%) had families of between 2-3 people with each family having at least 1 child below 5 years, followed by 50(35%) whose families were composed of between 4-6 people with each family having at least between 2-3 children below 5 years. Lastly, 74(34%) had families of above 7 people with each family having at least 3-4 children below 5 years.

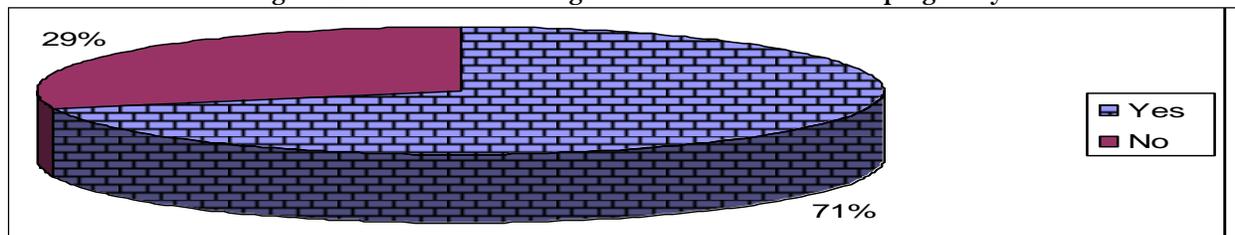
**Figure 4: Type of family**



**Source: Field findings (2020)**

On the Type of family, respondents came from, 123(86%) were from monogamous families, and only 20(14%) were from polygamous families according to findings.

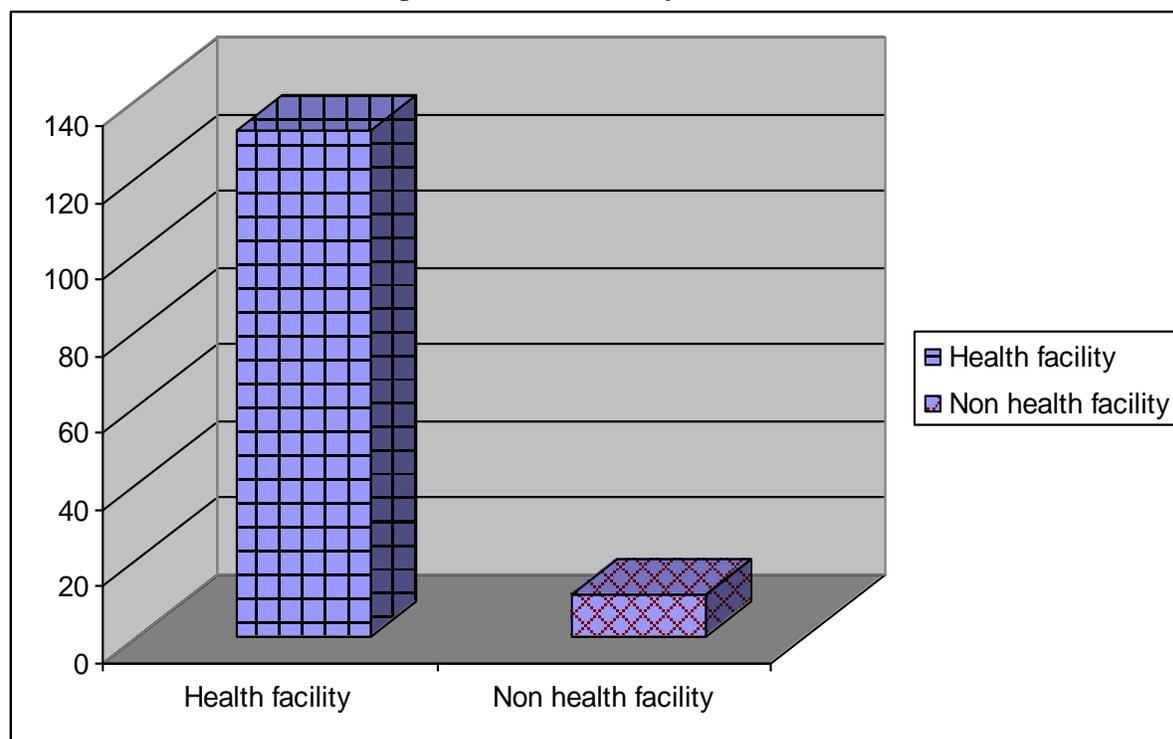
**Figure 5: Views on attending antenatal care in the last pregnancy**



**Source: Field findings (2020)**

According to the majority of 101(70%) of the respondents, they had attended antenatal care in the last pregnancy, while 42(30%) had not attended antenatal care in the last pregnancy, as some were giving birth for the first time, while others had safe normal deliveries last time so they thought the same would happen.

**Figure 6: Place of delivery of the last child**



**Source: Field findings (2020)**

Responses on the place of delivery of the last child indicated that the majority 132(92%) gave birth at health facilities, while 11(8%) disclosed that they had given birth in non-health facilities. Many disclosed churches and relatives' (aunts') residences.

**Table 5: Knowledge of cord care among the mothers**

Response related to knowledge of cord care among the mothers	Yes	%ge	No	%ge
Have you ever heard about standard umbilical cord care?	130	90	13	10
Ever attended any health education on cord care	99	69	44	31

**Source: Field findings (2020)**

The majority of respondents 130(90%) agreed that they had ever heard about standard umbilical cord care before and after giving birth, while 13(10%) disclosed that they had never heard about standard umbilical cord care. Secondly 99(69%) of the respondents, disclosed that they have ever attended any health education on cord care mainly from the health personnel, while 44(31%) disclosed that they have never attended any health education on cord care.

**Table 6: Standard of components of standard core**

Standard of components	Frequency	Percentage (%)
Use of herbs on cord only	2	1
Keep baby away from visitors	-	-
Tying, cutting, and cleaning with methylated spirit	2	1
Cord allowed to dry on its own	69	49
Others	70	49
<b>Total</b>	<b>143</b>	<b>100</b>

**Source: Field findings (2020)**

Findings on the standard of components of the standard core while caring for the umbilical cord included the use of herbs on the cord only with 2(1%), and the non-disclosure that mothers should keep babies away from visitors. Also, 2(1%) disclosed that umbilical cords are cared for by tying, cutting, and cleaning with methylated spirit, while 69(49%) disclosed that the cord should be allowed to dry on its own. Lastly, the majority 70(49%) disclosed other ways, which included tying the umbilical cord and leaving it to dry up until it breaks off on its own.

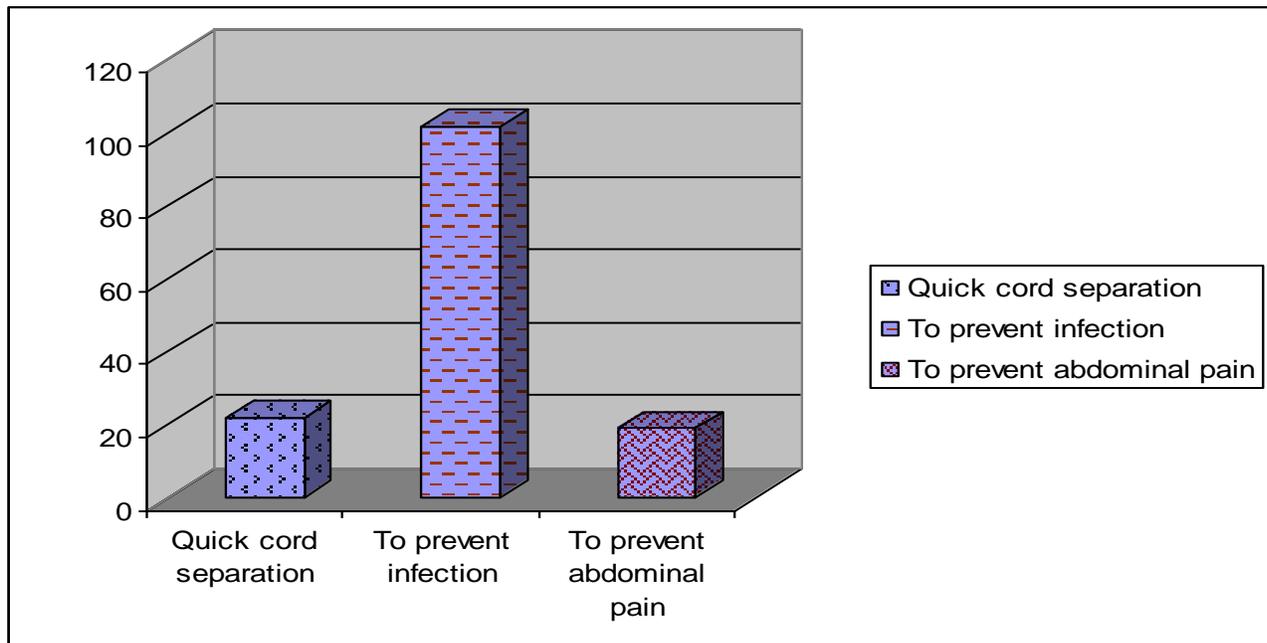
**Table 7: Substances used for cord care**

Substances are used	Frequency	Percentage (%)
Salt solution	2	1
Methylated spirit	2	1
Hot water	-	-
Herbal preparation	10	8
Don't know	4	3
Others	125	87
<b>Total</b>	<b>143</b>	<b>100</b>

**Source: Field findings (2020)**

Responses on what substances are used for cord care, 2(1%) disclosed the use of salt solution, 2(1%) disclosed the use of methylated spirit and none disclosed the use of hot water. Also, according to 10(8%), they disclosed the use of herbal preparation, 4(3%) didn't know and majority 125(87%) disclosed others. Mainly, these disclosed that the umbilical cord undergoes natural healing and nothing is added to help it in the healing process.

**Figure 7: Benefits of cord care**



**Source: Field findings (2020)**

Responses on what are the benefits of cord care indicated that 22(16%) agreed that cord care helps in quick cord separation which helps immediately stop bleeding. Secondly, the majority of 102 respondents (71%) agreed that cord care helps to prevent infection from bacterial infections, while 19(13%) disclosed that cord care helps to prevent abdominal pain.

**Table 8: Level of Score of the Level of knowledge of care**

Level of Score of the Level of knowledge of care	Frequency	Percentage (%)
<b>Good</b>	133	93
<b>Poor</b>	10	7
<b>Total</b>	<b>143</b>	<b>100</b>

Source: Field findings (2020)

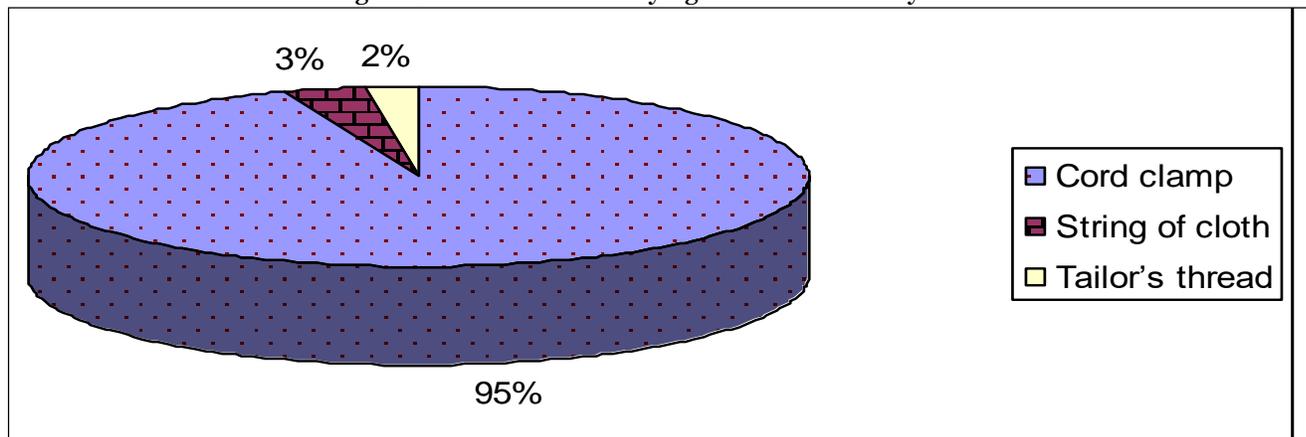
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Responses from level of score of the level of knowledge of care indicated that the majority of 133(93%) disclosed a good level of score of the level of knowledge of care while only 10(7%) disclosed a poor level of score of the level of knowledge of care.

**Level of the practice of cord care among the mothers**

**Material used in tying cord after delivery**

**Figure 8: Material used in tying cord after delivery**



Source: Field findings (2020)

Responses on the material used in tying the cord after delivery indicated that 135(94%) of the responses indicated that the cord clamp is used in tying the cord after delivery, followed by 5(4%) who disclosed the string of cloth and only 3(2%) disclosed the tailor's thread.

**Table 9: Substance (s) used for cord cleaning**

Substance (s) used for cord cleaning	Frequency	Percentage (%)
Salt solution	5	4
Hot water	5	4
Herbal preparation	3	2
Methylated spirit	3	2
Others	127	88
<b>Total</b>	<b>143</b>	<b>100</b>

Source: Field findings (2020)

The majority of respondents 127(88%) disclosed that among the substance (s) used for cord cleaning were others. These disclosed that there should be no substance used to clean the umbilical cord, but should be left to dry on its own, while 5(4%) disclosed the salt solution, (4%) disclosed hot water 3(2%) disclosed herbal preparation and 3(2%) also disclosed methylated spirit.

**Table 10: Care of the hands during cord care**

Care of the hands during cord care	Frequency	Percentage (%)
Wash hands with water	15	10
Wash hands with soap and water	125	84
Clean hands on cloth/wrapper	3	2
Clean hands with a clean handkerchief	-	-
<b>Total</b>	<b>143</b>	<b>100</b>

**Source: Field findings (2020)**

Responses on the care of the hands during cord care indicated that the majority 125(84%) disclosed that when caring with the hands during cord care, they should be washed with soap and water, followed by 15(10%) who disclosed that one should wash hands with water. 3(2%) supported cleaning hands on cloth/wrapper and none disclosed cleaning hands with a clean handkerchief.

**Table 11: Method of cord cleaning**

Method of cord cleaning	Frequency	Percentage (%)
Clean cord base before stump	5	4
Clean cord stump only	5	4
Clean surrounding skin only	5	4
Clean the material used to tie the cord	5	4
Others	123	84
<b>Total</b>	<b>143</b>	<b>100</b>

**Source: Field findings (2020)**

According to the method of cord cleaning by mothers, the majority (123(84%) disclosed other methods, which included leaving the cord to dry up, apart from 5(4%) who disclosed cleaning the cord base before stump, 5(4%) who disclosed cleaning cord stump only, 5(4%) who disclosed cleaning surrounding skin only and 5(4%) disclosed cleaning the material used to tie the cord.

**Table 12: Frequency of cord cleaning**

Frequency of cord cleaning	Frequency	Percentage (%)
Morning, afternoon, evening	3	2
Once daily	3	2
After each nappy is changed	3	2
Several times a day	3	2
None	131	92
<b>Total</b>	<b>143</b>	<b>100</b>

**Source: Field findings (2020)**

Responses on the frequency of cord cleaning indicated that 3(2%) disclosed that the umbilical cord should be cleaned in the morning, afternoon, and evening, 3(2%) disclosed that the umbilical cord should be cleaned once daily, 3(2%) disclosed that the umbilical cord should be cleaned after each nappy is changed and 3(2%) disclosed that the umbilical cord should be cleaned several times a day. However, the majority 131(92%) disclosed that none of the above, since the cord is left to dry and break off on its own.

**Table 13: Level of practice of cord care among the mothers**

Level of the practice of cord care among the mothers	Frequency	Percentage (%)
Good	135	94
Poor	8	6
<b>Total</b>	<b>143</b>	<b>100</b>

**Source: Field findings (2020)**

According to findings, the Level of practice of cord care among the mothers was good with 135(94%) of the mothers who understood the practices of cord care, while among only 8(6%), the level of practice was poor.

**DISCUSSION****Socio-demographic characteristics of mothers and children**

Responses according to age indicated that 20 (14%) of the babies were between 1-4 days old, 96 (67%) of the babies were between 4-8 days old, and 27 (19%) were between 8-12 days old. All the above were under the umbilical cord care of their mothers. The age bracket of mothers indicated that the majority, 47 (34%) of the mothers, were aged between 31 and 40 years, followed by 40 (28%) who were aged between 15 and 20 years. Also, 38 (26%) of the mothers were aged 21-30 years, while only 18 (12%) were aged above 40 years. Carers' education level indicated that the minor population (3%) was not educated to any level, followed by 50 (3 who were educated up to the primary level. Also, 50 (35%) had tertiary levels of education, and 40 (28%) had a secondary level of education. Responses on the occupation of carers indicated that the majority, 63 (4 were peasants, followed by 40 (2 who were salaried or employed employees, and 40 (28%), were business mothers and were engaged in business. According to religion, 39 (27%) of the respondents were Catholics, while the majority, 54 (38%), were protestants, 17 (12%) were Muslims, and only 33 (23%), were from other religions, which included bona fides. On mothers' marital status, 19 (13%) were single mothers, followed by the majority (124 (87%)) who were married. None of the respondents were divorced or widowed. On the mother's monthly household income, 43 (31%) earned a monthly income of between \$10,000 and \$100,000, while the majority (55%) earned a monthly income of between \$110,000 and \$300,000. 45 (31%) earned a monthly income of between 310,000 and 500,000, and 5 (3%) earned a monthly income of above 510,000. On the number of people in mothers' households, 19 (31%) had families of between 2 and 3 people, with each family having at least 1 child by the age of 5 years, followed by 50 (35%), whose families were composed of between 4 and 6 people, with each family having at least 2-3 children by the age of 5 years, and 74 (34%), had families of more than 7 people, with each family having at least 3-4 children by the age of 5 years. Of the type of family, 123 (86%) were from monogamous families, and only 20 (14%) were from polygamous families, according to the findings. According to 101 (70%), they had attended antenatal care in the last pregnancy, while 42 (30%) had not attended antenatal care in the last pregnancy, as some were giving birth for the first time while others had safe, normal deliveries last time, so they thought the same would happen. The place of delivery of the last child indicated that the majority, 132 (92%), gave birth at health facilities, while 11 (8%) disclosed that they had given birth in a non-health facility. Many disclosed churches and relatives' (aunts') residences.

**Knowledge of cord care among mothers**

The majority of respondents, 130 (90%), agreed that they had never heard about standard umbilical cord care before and after giving birth, while 13 (10%) disclosed that they had never heard about standard umbilical cord care. 99 (69%) of the respondents disclosed that they have ever attended any health education on cord care, mainly from health personnel, while 44 (31%) disclosed that they have never attended any health education on cord care. On the standard of components of the standard core while caring for the umbilical cord, use of herbs on the cord accounted for 2 (1%), 2 (1%) were disclosed by tying, cutting, and cleaning with methylated spirit, 69 (49%) disclosed that the cord should be allowed to dry on its own, and 70 (49%) disclosed other ways, which included tying the umbilical cord and leaving it to dry up until it broke off on its own. In responses on what substances are used for cord care, 2(1%) disclosed the use of salt solution, 2(1%) methylated spirit, 10(8%) disclosed the use of herbal preparation, 4(3%) didn't know, and the majority 125(87%) disclosed that the umbilical cord undergoes natural healing and nothing is added to help it in the healing process. The benefits of cord care indicated that 22 (16%) agreed that cord care helps in quick cord separation, which helps immediately stop bleeding; 102 respondents (71%) agreed that cord care helps to prevent infection from bacterial infections; and 19 (13%) disclosed that cord care helps to prevent abdominal pain. Responses from the level of score of the level of

knowledge of care indicated that the majority of 133 (93%) disclosed a good level of score of the level of knowledge of care, while only 10 (7%) disclosed a poor level of score of the level of knowledge of care.

#### **Level of the practice of cord care among the mothers**

Responses on the material used in tying the cord after delivery indicated that 135 (94%) indicated that the cord clamp is used in tying the cord after delivery, 5 (4%) disclosed the string of cloth, and only 3 (2%) disclosed the tailor's thread. Also, 127 (88%) disclosed that there should be no substance used to clean the umbilical cord but that it should be left to dry on its own: 5 (4%) salt solution, 4 (4%) hot water, 3 (2%) herbal preparation, and 3 (2%) methylated spirit. The majority of 125 (84%) disclosed that when caring for the hands during cord care, they should be washed with soap and water; 15 (10%) disclosed that one should wash hands with water; and 3 (2%) supported cleaning hands on a cloth or wrapper. According to the method of cord cleaning by mothers, the majority (123,84%) disclosed that the cord should dry up, apart from 5 (4%) cleaning the cord base before the stump, 5 (4%) cleaning the cord stump only, 5 (4%) cleaning the surrounding skin only, and 5 (4%) cleaning the material used to tie the cord. The frequency of cord cleaning indicated that the majority, 131 (92%), disclosed that the cord is left to dry and breaks off on its own. 3(2%) disclosed that the umbilical cord should be cleaned in the morning, afternoon, and evening; 3(2%) said the umbilical cord should be cleaned once daily; 3(2%) said the umbilical cord should be cleaned after each nappy is changed; and 3(2%) said the umbilical cord should be cleaned several times a day. The level of practice of cord care among the mothers was good, with 135 (94%) of the mothers understanding the practices of cord care, while among only 8 (6%), the level of practice was poor.

#### **CONCLUSION**

In conclusion, the ages of babies were between 1-4 days old, 4-8 days old, and those between 8 and 12 days old who were undergoing umbilical cord care by their mothers, while the age brackets of mothers included 31-40 years, 15-20 years, 21-30 years, and above 40 years with education levels of primary, tertiary, and secondary education. These were peasants, salaried or employed employees, business mothers, and those engaged in business. On religion, some were Catholics; others were Protestants, Moslems, and born-again. Some were single mothers, and others were married. They earned a monthly income of between 10,000 and 100,000, between 110,000 and 300,000, between 310,000 and 500,000, and others earned a monthly income of above 510,000. These mothers came from households of between 2 and 3 people with at least 1 child under 5 years old, families composed of between 4 and 6 people, with each family having 2-3 children under 5 years old, and those above 7 people, with each family having at least 3-4 children under 5 years old, from both monogamous and polygamous families. Some of these attended antenatal care in the last pregnancy from either health facilities or non-health facilities. The knowledge of cord care among the mothers, many had ever heard about standard umbilical cord care before and after giving birth and attended health education on cord care from the health personnel. These have standard components of standard care where the cord should be allowed to dry on its own and tying the umbilical cord and leaving it to dry up until it breaks off on its own. Substances used for cord care among some mothers included salt solutions, methylated spirits, and herbal preparations. The benefits of cord care included helping in quick cord separation, preventing infection from bacterial infections, and preventing abdominal pain. The score for the level of knowledge of care was high. On the level of practice of cord care among the mothers, the material used in tying the cord after delivery included either string of cloth or tailor's thread, and no substance was used to clean the umbilical cord but should be left to dry on its own. Also, the salt solution, hot water, herbal preparation, and methylated spirit were thought, but many disclosed washing with soap and water, washing hands with water, and a cloth or wrapper. The method of cord cleaning by mothers included letting the cord dry up, cleaning the cord base before the stump, cleaning the cord stump, cleaning the surrounding skin only, and cleaning the material used to tie the cord, which was left to dry and break off on its own. These disclose that the umbilical cord should be cleaned in the morning, afternoon, and evening, once daily, after each nappy is changed, and several times a day. The level of practice of cord care among the mothers was good, as mothers understood the practices of cord care.

#### **RECOMMENDATIONS**

The government should be at the forefront of monitoring and evaluating its health and training programmes, for example, those aimed at safeguarding umbilical cords among newborn babies in several health conditions, mainly in rural areas. There should be policies by the government and different stakeholders to address poor health policies to address different ideological and practical challenges different women are engulfed in when caring for and treating umbilical cords. Pregnant women and those giving birth should be mobilised and sensitised on umbilical cord handling, treatment, and caring techniques before, during, and after giving birth. This would help in reducing the side effects of handling umbilical cords. The timely and necessary information or explanation to some mothers about umbilical cord care should be offered mainly to those with low education levels as well as those having their first pregnancies in government and private health centres to reduce umbilical cord infections.

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