

Knowledge and Practice of Umbilical Cord Care Among Post-Natal Mothers in University of Benin Teaching Hospital, Benin City, Edo State

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Abstract:

Umbilical cord care is crucial during the neonatal stage of life as poor umbilical cord practice have been linked with infections. This study was aimed at assessing the knowledge and practice of umbilical cord care among post-natal mothers in UBTH, Benin City, Edo State. A non-experimental descriptive survey design was used for the study. A sample size of 60 was used as determined by formula and Yaro Yamane formula. A convenience sampling technique was used to select respondents attending child welfare clinic from July to August 2022 in UBTH. The instrument used for data collection was a researcher constructed questionnaire with 22 items grouped into sections A, B, C and D. Section A elicited information on the personal data of the respondents and sections B to D elicited information based on the objectives so as to answer the research questions. The questionnaire was self-administered to the respondents and were collected at the spot with a return rate of 98.4%. Data analysis was done using frequency tables and pie chart. Findings from the study showed that a good percentage (~5%) had good knowledge of cord care and 91.7% actually practiced standard cord care. The hypothesis for the study was tested using Pearson's product moment of correlation coefficient (PPICC) and the null hypothesis was rejected showing that there is a significant relationship between knowledge and practice of umbilical cord care among post-natal mothers in UBTH, Benin City, Edo State, from the findings of the study, the researcher recommends that education on umbilical cord care 'should be incorporated into the health talk given during antenatal visits so as to increase the knowledge and practice of proper cord care.

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DECLARATION

This is to declare that this research project titled **Knowledge and Practice of Umbilical Cord Care Among Post-Natal Mothers in Ubth, Benin city, Edo State** was carried out by ITSEGHOSIMHE IYESOMI SCHOLASTICA, is solely result of my work except where acknowledge as being derived from other person(s) or resources.

Examination Number: PDN/22/00178

In the School of Post Basic Paediatric Nursing, University Of Benin Teaching Hospital, Benin City, Edo state.

(Digital Version, Signature not required)

CERTIFICATION

This is to declare that this research project carried out by ITSEGHOSIMHE IYESOMI SCHOLASTICA with Examination number **PDN/22/00178** and has been examined and approved for the award of Diploma in Paediatric Nursing and Management.

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DEDICATION

This project is dedicated to God Almighty, the giver of life and sustainer of my life.



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My sincere and heartfelt gratitude goes to Almighty God for His Goodness over my life and throughout the period of carrying out this research project. All Honor and Glory belong to Him.

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CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Cord care is the series of steps applied in handling of the umbilical cord after delivery of the new born. During pregnancy, the placenta supplies all material for fetal growth and removes waste products. Blood flows through the umbilical Cord from the placenta and brings all nutrients and oxygen to the fetus and carries away carbondioxide and metabolic waste. After delivery of the infant and after the placenta has separated from the mother's womb, the newborn must make the essential transition to extra uterine life (Mitul, 2018).

The umbilical vessels are still patent for a few days following birth which provides direct access to the bloodstream. The devitalized tissue of the cord stump can be an excellent medium for bacteria, especially if the cord stump is kept moist an unclean substances are applied to it (Mitul, 2018).

The umbilical cord is a common route of entry for systemic infection in the newborn infant, keeping the cord clean is therefore imperative if infection is to be prevented.

In a study carried out in India by Shallini & Hajela (2020) showed that with regards to umbilical cord care. 83.6% of the participants used for the study had correct knowledge, attitude and practice regarding cutting of umbilical cord and 52.4% had correct knowledge of care of umbilical cord even though this figure is a little more than half. It still shows the need to emphasize effective cord care procedures.

Practice is a habit that has been formed by an individual depending on the knowledge they have acquired which then becomes something a person becomes used to if otherwise changed. A qualitative study in Northern Ghana showed that a wide variety of tools were used in cord cutting. The most commonly used being razor blades or scissors. That study reported that a wide variety of materials were applied while the cord was dressed, traditional materials used were shea butter, ground shea nuts, herbs, local oil and red earth (Moyer, Aborigo, & Logonia, 2018).

These unhygienic birth practices with low rate of mother being immunized against tetanus accounts for the high incidence of neonatal tetanus in Nigeria (Udosen, 2019).

In a study in Bangladesh, It was observed that more than 80% of women delivered at home. In 6% of cases, the blades from a clean delivery kit were used to cut the cord, in 90% of cases, the blades used were from another source, in 4% of cases, other instruments such as bamboo strips and scissors were used to cut the cord. In 51% of cases, a substance (e.g antibiotic powder/ointment, alcholo/spirit, mustard oil; with garlic, boric powder, turnmeric and shewed rice).

A study carried out by Osuchukwu, Ijeoma, & Ezeruigho (2018) indicated the material used on the umbilical cord. (62%) used cord clamp to tie the umbilical cord, 41.6% used sterile scissors/surgical blades to sever the cord and 49.8% of the respondents used methylated spirit to clean the umbilical cord. With regards to various materials "Ndodop" was commonly used by the respondents accounting for 33.3% Toothpaste "close up" was used by 3.6% of the respondents.

In Nigeria, a study carried out by Obuekwe (2018) stated that various materials have been used by mothers and other caregivers for umbilical cord care in developing countries.



This range from varieties of tools used to cut the cord to substances applied. These tools are unusually items that are available in the home such as scissors, knives, broken glasses, sharp stones or used razor blades which are rarely clean or oiled before used.

Thus it is important to know that approaches to cord care differ and have been evaluated in terms of their impact on timing of cord separation, bacterial colonization and infection.

There is a common practice carried out by mothers in rural setting where they used cattle dung to treat umbilical cord stump of children. Some used soil, ash and other types of concoction. In a study carried out in Port Harcourt by Opara, Jaja, Okara (2017) 75.5% of mothers cleaned the cord at least four times daily. It showed that 63.33% wash hands before handling stump and was clean napkin after each motion.

In view of this, this research seeks to assess the level of knowledge and practice of umbilical cord in neonates among post-natal mothers in university of Benin Teaching Hospital, Benin City.

1.2 Statement of Problem

Poor umbilical cord care practices have been linked with infection and mortality in newborns. Mortality among children especially newborns has become one of the global concerns. It is known that neonatal mortality and morbidity have remained high in many setting but the situation is worse in developing countries. The World Health Organization (2016) reported that the vast majority of newborn deaths take place in developing countries where access to health care is low and the main causes of newborn deaths are prematurity, low birth weight, infections asphyxia and birth trauma. Consequently, improving newborn survival is a global priority (Moran, Kerber., Sitin, 2019). Neonatal mortality accounts for forty three (43%) of under-five mortality an decline in neonatal mortality form 1990-2015 has been slower than that of post-neonatal under 5 mortality (WHO 2018). If the several other facts infections and sepsis remained as persistent and significant cause of mortality and morbidity among neonates (Mitual 2018, Agrawal, Mullany, 2019).

The newly cut umbilical cord can therefore be a pathway for bacterial that cause newborn sepsis and death (Coffey & Brown, 2017). The umbilical cord area supports the growth of some innocuous or beneficial micro-organisms (commensals) as well as pathogenic micro-organisms such as clostridium telani (Bhatt, Malik, Jindai, 2019).

A study which examined the association between clean cord care practices and neonatal mortality in rural Utar Pradesh, India showed that only 30% of mothers practiced clean cord care (Agrawal, et al., 2018; Kaumbi, Mulaku, Aluraaln, English & Opiyo 2018). Which reveals that clean cord care was associated 30% lower neonatal mortality rate.

Many various studies carried in developing countries reported that mothers apply substances like mustard oil, turmeric, cow dung and antiseptic lotion on the cord stump (Kertertor & Cleland, 2020).

A study reported that harmful cord practices was commoner among women who delivered outside the Teaching Hospital in Benin City, Edo State Nigeria (Abhulimhenlyoha & Ibadin, 2019). Umbilical cord care practices studied among south-western Nigeria women revealed that cord care practice was fair mothers. (Cobo, Kacerovsky, Andrys, 2017).

Since most mothers will need to take care of their baby's umbilical cord on their own without supervisor after discharge from the Hospital, they may not do it correctly if they were the hospital, they may not do it well due to various cultural belief and this may lead to neonatal infections, tetanus and eventually neonatal death. Therefore this study seeks to assess the



knowledge and practice of umbilical cord care in neonates among post-natal mothers in University of Benin, Teaching Hospital, Benin City.

1.3 Objectives of the Study

To determine the knowledge of umbilical cord care by post-natal mothers of UBTH, Benin City.

To assess the practice of umbilical cord care among post-natal mother of UBTH, Benin City.

To find out the various methods used by post-natal mothers of UBTH, Benin City for neonatal umbilical cord care.

1.4 Research Questions

Do post-natal mothers in UBTH have knowledge of umbilical cord care?

How do post-natal mothers of UBTH City care for their neonate's umbilical cord?

What methods do post-natal mothers of UBTH use in caring for their neonates umbilical care?

1.5 Significance of the Study

This study will be beneficial to the following group in the following ways;

To the Nursing Profession: It will help nurses to know how to educate mothers on proper methods of healthy cord practices thereby reducing the rate of neonatal sepsis amongst neonates.

To the Health Workers: Enhance collaborative effort to encourage and enforce healthy cord practice among post natal mothers in UBTH.

To the Society: Will enable the members of the society to know the importance of healthy cord practices and how it helps to curb neonatal morbidity and mortality.

1.6 Hypothesis

There is no significant relationship between the knowledge and practice of umbilical cord care among post-natal mothers of UBTH, Benin City.

1.7 Scope of the Study

The study focuses on the knowledge and practice of umbilical cord care among post-natal mothers in UBTH.

Data was collected only from post-natal mothers who attended immunization/child wellness clinics in University of Benin Teaching Hospital.

1.8 Operational Definition of Terms

Knowledge: Awareness of proper umbilical cord care either through learning, reading, experience or discovering which the cord with clamp, cleaning either with methylated spirit and keeping it clean.

Practice: Application go knowledge of proper umbilical cord care like method of cleaning the cord, frequency, and materials used.

Umbilical cord care: Taking care of the stump in a way that prevents it from getting infected.

Post-natal mother: A woman within the first six week of delivery of a baby

CHAPTER TWO

LITERATURE REVIEW

This chapter focuses on the review of related literature to the study. It includes; Conceptual Review, Theoretical framework, Empirical Review

2.1 Conceptual Review

This is the review of concepts related to this study under the following subheadings; The umbilical cord, Care of the umbilical cord, Knowledge of umbilical cord care, Cord care practices, Methods of cord care practices.

The Umbilical Cord

The umbilical cord connects a baby in the uterus to its mother. It is about 50cm (20inc) long. It is a helical and tubular blood conduit connecting the fetus to the placenta. It carries oxygen and nutrients from the placenta to the fetus. It is made up of one (1) vein that carries oxygenated blood and nutrient to the fetus and two (2) arteries that return deoxygenated blood and waste products to the placenta. These blood vessels are enclosed and protected by a sticky substance called Wharton's jelly which itself is covered by a layer of membrane called amnion (Bermor & Uta, 2018).

The umbilical cord or funicles umbilical is a spiral-shaped, helical and tubular blood conduit connecting the fetus to the placenta. Formation of the umbilical cord occurs between the 5th and 8th week of gestation. It originates from the duct that forms between the amniotic sac and the amnion. Blood flow is established within the umbilical cord by the end of the 5th week of gestation. It achieves its final form by the 12th week of gestation. During placenta development, the umbilical cord is physiological and genetically a part of the foetus. The umbilical cord has two umbilical arteries and one umbilical vein which are continuous with the blood vessel in the chorionic villi. These are all immersed in a liquid called Wharton's Jelly which is formed from the mesoderm and surrounded by a single layer of amnion that is continuous with the covering of the placenta. This loose like connective tissue gives the umbilical cord resistance and keep from getting tangled. The two arteries and the vein are arranged in a triangle, the arteries form the base with the vein forming the third point of the triangle. There are no nerves in the umbilical cord that is why there is no pain when cut. Its length is about 40-50cm long, 1-2cm in diameter. The umbilical cord vein supplies the fetus with oxygenated, nutrient rich blood from the placenta. (Bermor & Uta, 2017).

When the umbilical cord is cut after delivery, the cord stump at the distal end of the cord is suddenly deprived of its blood supply and soon starts to dry and turns black and stiff (dry gangrene). The instrument used to cut through living tissue and vessels that are still connected to the intact blood stream. It therefore needs to be sterile to avoid infection. Drying and separation of the cord is facilitated by exposure to air. The devitalized tissue of the cord can be an excellent medium for bacterial growth, especially if the cord is kept moist and unclean substances are applied.

The umbilical vessels remain patent for a few days following birth, thus providing direct access to the blood stream (Ganaha & Zaid, 2019).

Care of the Umbilical Cord

Clean cord care at birth in the days following birth is effective in preventing cord infections and tetanus neonatorum. Clean cord care is uncontaminated by pathogens.

At birth, hands should be washed with clean water and soap before delivery, after any vaginal examination and before tying and cutting the cord.

Clean cord care involves washing hands with soap and water before delivery, tying and cutting the umbilical cord with sterile instrument and finally laying the baby on a clean surface.

The objectives of hygiene cord care practice as outlined by WHO (2018) are to prevent consequence of unclean cord care which may include umbilical cord infections and neonatal deaths. Care for the baby's umbilical cord infections and neonatal deaths. Care for the baby's umbilical cord stump includes; washing of hands, use of soap and water and washing of hands before and after cleaning the stump. Clean the cord stump. Gently wash the cord stump and the skin around it with mild soap and warm water during every bath. Gently pat the stump dry after your baby's bath. Use rubbing alcohol or water. The baby's healthcare provider may suggest you use rubbing alcohol or water and a cotton swab to clean the stump. Gently wipe from the base to the top of the stump with a cotton swab dampened with rubbing alcohol or water. Clean the stump with each diaper change. Clean urine or bowel movement off the stump. If the baby's stump gets dirty from urine or bowel movement, wash it off right away with water. Gently pat the stump dry after cleaning it. Let the cord air dry. After diaper changes or stump cleaning, fold the front of the diaper down below the cord stump to let it air dry. Dress the baby in loose clothing. Loose-fitting clothes will help the stump dry out faster. Do not pull or tug at the cord stump. The stump will fall off on its own. Do not cover the cord stump. If you want to use a bellyband on your baby, use only clean, dry gauze.

WHO Recommendation on Cord Care

In 2018, the World Health Organization (WHO) released new guidelines on postnatal care, which include an update recommendation for umbilical cord care. "Daily chlorhexidine (7.1% chlorhexidine digluconate aqueous solution or gel, delivering 4% chlorhexidine) application to the umbilical cord stump during the first week of life is recommended for newborns that are at home in settings with high neonatal mortality (30 or more neonatal deaths per 1,000 live births). Clean, dry cord care is recommended for newborns born in health facilities and at home in low neonatal mortality settings. Use of chlorhexidine in these situations may be considered only to replace the application of a harmful traditional substance, such as cow dung, to the cord stump."

Knowledge of Umbilical Cord Care

The depth of knowledge about a subject matter determines the approach to such subject, this has also been seen in the care of the umbilical cord among mothers. This entails the use of cord clamp for tying the cord after delivery, use of sterile scissors/blade for separating the baby from the mother after delivery, use of methylated spirit for cleaning of the cord, hand washing before and after cord cleaning, cleaning the cord base before the stump and the frequency of cord cleaning in a day. (Afolarammi, Hassan, Akinyemi, Slue, Maleté, Choji & Bello 2018).

Umbilical Cord Care Practices and Associated Factors: The mean practice score of umbilical cord care practices is 12.3 ± 1.2 . 254 (61.4%) respondents practiced good cord care which indicates that a higher proportion of respondents who received information about appropriate cord care in the course of pregnancy practiced appropriate cord care compared to those who did not. The practice of appropriate cord care was highest in

mothers 35 years and above followed by those within the ages of 15 and 24 years although this was not statistically significant.

Cord Care Practices

The basic principle of umbilical cord stump is to keep it clean and dry, as this provides the fastest and safest umbilical healing. However, there are many different clinical practical of umbilical cord care in different parts of the world, including developed countries. For healthy umbilicus, dry cord can be provided, cord cleaning performed once a day, or more often if the umbilical stump is contaminated with urine or feces stumps too frequent cleaning and wetting of the cord stumps or umbilical wound extends the drying time and prolongs the healing process. Moreover, too frequent or improper care can also cause damage which further prolong healing or promotes infection. The umbilicus should be visible and regularly observed for bleeding, infection or other problems, so covering it with gauze or another material is not indicated, as this prolongs drying time and does not reduce extent of bacterial colonization (Nosan & Paro-panjan 2016). In caring for the cord effectively proper hygiene is quintessential. Hand washing before and after cord cleaning, the cord men should be kept clean and dry and diapers changed frequently as soiled diapers can become colonized with microbes.

Clean cord care is one of the essential newborn care practice which is required for the survival of the newborn. This is expected to begin immediately after delivery with application of aseptic substances on the practice is vital as umbilical stump is a raw surface that may serve as portal of entry for micro-organisms into the blood stream.

Aseptic cord practices include the use of methylated spirit, silver sulphadiazine, gentian violet, iodine, chlorhexidine dye and topical use of antibiotics (USAID 2017).

In a study conducted cord care immediately after delivery while 1.47% had no idea about cord care also 29.67% of the respondent believed that the cord should be covered with diapers majority (84.25%) used methylated spirit to clean the cord. 25.27% massage with hot water while a few of the respondent cover stump with Vaseline, toothpaste, dusting powder or scent leaf local herb.

In another study conducted by Ndikom and Abimbola (2020) in South-west Nigeria, the finding revealed that 84.5% of the respondent practiced adequate cord cleaning after delivery, 29.2% used the proper material to the cord, 89.4% practiced clean cord cleaning at home correctly 4.3% practiced proper care of cord after it fell off and 95.7% used the proper cleaning agent for the cord care.

Materials/Methods of Cord Care Practice among Mother

Cord care following delivery is even more varied but once again the underlying aim is to avoid infections to cord and the surrounding area. Treatment range from the application of ashes and fresh colostrums in Kenya to coconut oil and flower by the American Souroans.

A study carried out in Nairobi, Kenya revealed that air drying (54.5%) was the main method of umbilical cord care following by methylated spirit use (24.7%) saliva (10.7%) and warm salty water (10.1%). A few others used herbal solutions. 539% of mothers tied the diaper below the umbilical while the reaming 46.1% tied the diaper above the umbilical cord. (Amare, 2019) this increase the risk of neonatal sepsis and subsequently neonatal death.

Few article reported on the frequency of application of herbal solutions (either the number of days or number of time per day) on the umbilical cord (Amare, 2020).

Another study on cord care practices in Calabar, Cross River State, Nigeria showed that 44.7% of nursing mothers felt standard cord care meant tying of the cord stump, cutting a clean object and clean with methylated spirit only until then cord falls off (Osuchukwu, 2019). Others defined cord care as the use of herbs (16%) while some felt that allowing the cord stump to dry and fall off on its own (7.1%) was the standard cord care (Osuchukwu, 2017). Interestingly, while 56.4% of respondents use methylated spirit for cord care, 19.6% use herbal solutions, 14.7% use saliva mixed with salt and 9.3% used hot water as cleaning solution for umbilical cord care.

2.2 Theoretical Framework

The theoretical model to back up the study is the Dorothy Orem's self-care deficit nursing theory.

Dorothy Orem's self-care theory was first published in 1971, second in 1980, in 1995 and 2001.

The theory consists of three (3) related parts;

Theory of self-care, Theory of self-deficit, Theory of nursing system

Theory of Self-Care

This theory includes;

Self-Care: Practice of activities that individual initiates and performs on their own behalf in maintaining life, health and well-being.

Self-care Agency: Is a human ability which is the ability for engaging in self-care conditioned by age, development state, life experience, socio-cultural orientation, health and available resource.

Therapeutic Self-Care Demand: "Totality of self-care actions to be performed for some duration in order to meet self-care requisites by using valid methods and related self of operation and actions" self-care requisites action directed toward provision of self-care.

Theory of Self-Care Deficit

Specifies when nursing is needed, Nursing is required when an adult (or in the case of a dependent the parent) is incapable or limited in the provision of continuous effective self-care.

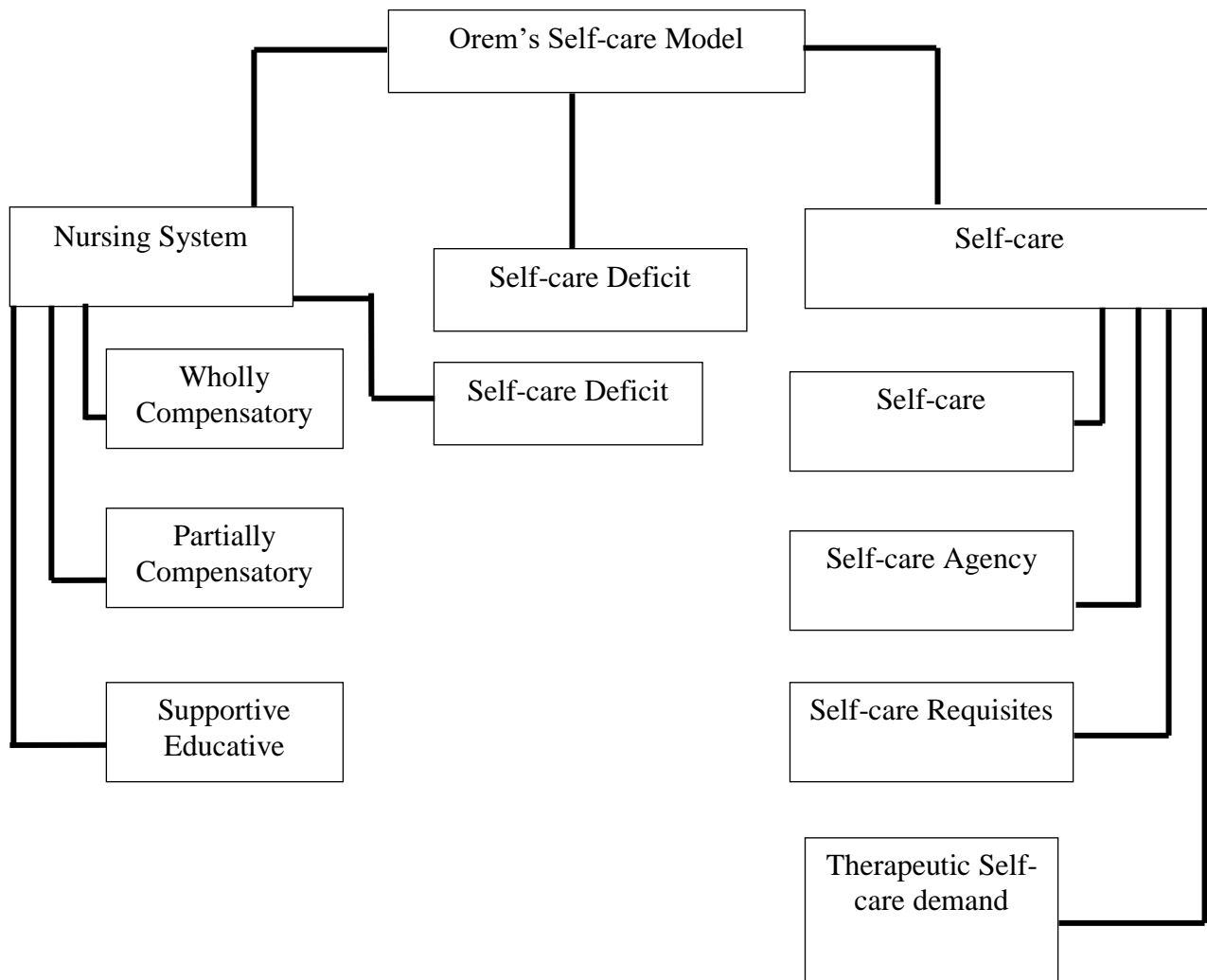
Orem Identities 5 Methods of Helping;

Acting for and doing for others, guiding others, supporting another, providing and environment promoting personal development in relation to meet further demand, teaching another

Theory of Nursing System

Describes how the patients self-care needs will be met by the nurse, the patient or both.

Identifies 3 classification of nursing system to meet the self-care requisites of the patient
Wholly compensatory system, partly compensatory system, supportive educative system



Conceptual Model of the Study (L Hong To Rtai, 2022)

Application of the Theory to the Study

Theory of Self-Care

Self-care agency is concerned with the human acquired power and capabilities to engage in self-care. Under usual circumstance, adults care for themselves however, those who are young aged. Ill or disabled need other help with self-care or complete assistance in those activities necessary to meet self-care needs.

That is, those who are young like the neonates requires that another person describe as the dependent care agency or dependent giver (another) should care for him/her in activity such as umbilical cord care to maintain life, health and well-being. Thus babies rely on dependent care givers. Therapeutic self-care demand implies the mothers using valid and therapeutic materials and acceptable methods and standard in neonatal umbilical cord care in order to be free from infection.



Theory of Self-Care Deficit

When the mother is unable to meet the care requisites of the neonate, a self-care deficit occurs. The nurse then helps by guiding, supporting, and teaching the mother as well as providing an environment that promotes clean and safe umbilical cord care.

2.3 Empirical Review

Knowledge of umbilical cord care by postal-natal mother

In a study carried out by Ndikom et al (2020) on umbilical cord care knowledge and practices of mothers attending selected primary health care centers in Ibadan Nigeria, it was reported that poor umbilical cord care practices have been linked with infections and mortality in newborns. Some mothers used multiple agents in umbilical cord care. The study utilized a cross-sectional design. Multistage sampling teaching was used to select 414 mother baby pairs attending infant welfare clinics in the selected primary health centres (PH). Data was collected using structure validated questionnaire after obtaining ethical approval and informed consent. Descriptive statistics were used for analysis of data and hypotheses were tested using chi-square statistic at $p=0.05$. One hundred and ninety nine (48.1%) of the respondents had a good level of knowledge of appropriate umbilical cord care. Even though most (19.7%) mothers used methylated spirit to clean the cord, quite a number, 270 (65.6) applied mentholated balm to the umbilicus. Above 60% of those who received information of umbilical cord care had good practice compared to those that did not ($p=0.04$). also, 125 (62.8%) of the respondent with good knowledge of umbilical cord to 74 (37.2%) with poor practices. Respondents' knowledge of umbilical cord care was not significantly associated with cord care practices. Gaps were observed in both knowledge and practices of umbilical cord care among the mothers attending primary health centres. Strategies need to be instituted by health care workers to improve knowledge of umbilical cord care and inappropriate practices should be strongly discouraged.

In a study conducted in Kenya, it was reported that the lack of knowledge of standard care is an important factor underlying unhygienic umbilical cord care among mothers.

Mothers who have a knowledgeable of standard cord care and the possible risk for non-adhering to proper care of the cord are more likely to carry out standard methods of cord care. Lack of knowledge of cord care affect young mothers especially primiparas who may lack the ability to make independent decision on cord care causing neonates to be in situations which can be vulnerable to their survival (Kinanu, Odhiambo, James, Habtu, 2018).

Practice of Umbilical Cord care Among Post-Natal Mother

In another study conducted by Mohammed, Envuladu, Osagie, & Difa (2020). Assessment of knowledge and cord care practices among pregnant women in selected PHCs in Jos metropolis, Plateau State. The study was aimed of deforming the umbilical cord care practices among mothers in Jos Metropolis. A cross-sectional study involving 119 study respondents who selected by cluster sampling technique. Data was collected using a self-administered questionnaire and analyzed using SPSS version of 23.0 at 15% confidence infernal, a p value of <0.05 was considered statistically significant. 39 (35.1%) of the respondents had poor knowledge of cord care while 48 (43.3%) and 24 (21.6%) had fair and good knowledge respectively majority of the respondent used methylated spirit for the last delivery, 54 (76.1%), 5(6.1%) used chlorhexidine gel while 11 (15%) used substances such as salt and Vaseline. Respondents with tertiary education were more likely than those with secondary

and primary education to use aseptic cord care respectively the mean cord separation time among respondents who used chlorhexidine gel was 6.6 ± 2.8 days, this was longer than those used other substances (4.8 ± 1.5 days). More respondents used aseptic cord practice however, a good number used a combination of septic and aseptic methods which could still pose a risk of infection to the neonate. There is need for health infections to increase the awareness of mothers on single aseptic cord practices in order to prevent neonatal sepsis and mortality. In a study conducted by Udosen, Olaye, Okondu, Udosen and Amachi (2019) in Calabar Metropolis it was reported that more than half (72.2%) of the mother knew that umbilical cord care means tying, cutting and cleaning with methylated spirit and a cotton bud. Also 63.1% of the mothers agreed that methylated spirit should be used only to clean the cord while more than half 58.7% agreed that umbilical cord should not be left exposed. The respondents from this study had an average level of knowledge (40.2%) of umbilical cord care with a mean score of 20.2.

Various Methods used by Post-Natal Mother

In another study conducted by Ndikom and Abimbola (2020) in South-west Nigeria, the finding revealed that 84.5% of the respondents practiced adequate cord cleaning after delivery, 29.2% used the proper material to tie the cord, 89.4% practiced clean cord cleaning at home correctly 4.3% practiced proper care of cord after it fell off and 95.7% used the proper cleaning agent for the cord care.

Practice of umbilical cord care was good among respondents in this present study but they still applied unprescribed agents like mentholatum to the cord. Being a facility based study, many observed proper cleaning method in the clinics but application of mentholated balm has remained an age long practice that has been difficult to change. A related study in South west Nigeria revealed poor practices but the application of mentholated balm on the umbilical cord and stump by some of the mothers was similar to our study (Joel-Medewase, et al, 2018). Similarly, a study by Bhatt, et al., (2017) which assessed cord care practices among mothers of new-borns in urban areas of Rohtak Haryana showed poor knowledge and practice with application of various agents by the mothers too, many women in their study still believe that mentholated balm should be applied to the cord. In another study Sokoto Nigeria by (Kaoje, et al, 2018) revealed that some mothers applied toothpaste to the umbilical cord. The application of multiple agents on the cord was also reported from a study carried out in rural Ghana (Amare, 2018) and similar report also in another cord care study in Ethiopia (Herlihy, Shaikh, Mazimba, et al, 2017). This is consistent with the study on local perceptions, cultural beliefs and practices that shape umbilical cord care in Southern Province, Zambia which revealed that the mothers believe strongly that substances should be applied to the umbilical cord for it to dry up promptly (Moyer, Aborigo, Logonia, et al., 2018) Though cord care knowledge and practice improved with the increasing number of children but this was not significant. This may indicate that mothers gain more knowledge about cord care as they have more children. Mothers who received information on cord care in the facilities practiced. Umbilical cord care better than those that did not in our study. This has shown that giving information to women in health facilities is very important. Most women in our study gave birth with skilled providers and received information on umbilical cord care from them. This is supported by a study in South India which showed that women who had skilled care during delivery had better cord care practices (Upadhyay, Singh, Rai, Anand, 2018).. A significant

relationship has been found between content of health education on cord care and method of cord care practiced by mothers (Abhulimhen-Iyoha, & Ibadin, 2020). Health education on cord care was seen as being deficient in some of our facilities (Moran, et al., 2017). Targeted health education is really important to improve cord care practices. Improving knowledge of cord will further improve cord care practices and enhance survival of newborns. The Implications of the findings to Public Health are based on the fact that the health of the new-born is very important as it contributes to a large percentage of under-5 mortality if not well managed and it is of Public Health Concern. Umbilical cord is a very important portal of entry for pathogenic agents thus parents especially mothers need to understand the necessity for appropriate cord care practices.

2.4 Summary of Literature Review

The umbilical cord is a unique tissue which connects the fetus to the mother through the placenta for oxygen, nutrients, excretion of carbon dioxide and other metabolites. This cord should be cut and dressed with sterile materials. Devitalized tissue of the cord can be an excellent medium for bacterial growth, especially if the cord is kept moist and unhygienic substances like herbs, or roots are applied to it (Bremor & Uta, 2018).

The theory on which the study was built upon was Orem's self-care. The theory focuses on each individual's ability to perform self-care, defined as the practices of activities that individuals initiate and perform on their behalf in maintaining life, health, and well-being, it entails the need of mother assisting the neonate who are dependent in the provision of care and management of the umbilical cord according to standard measures in order to prevent order infections thereby relearning the morbidity and mortality rate of neonates.

The empirical review focused on previous studies conducted in Kenya, South west Nigeria, Ibadan and Jos, Plateau of Nigeria which assessed the knowledge and practices of umbilical cord care among mothers in selected primary health centres. The studies revealed that gaps were still being observed in both knowledge and practices of umbilical cord care among mothers although a good percentage had the knowledge thereby posing a need for health interventions to increase the awareness on aseptic cord practices in order to prevent neonatal sepsis and mortality.



CHAPTER THREE

RESEARCH METHODOLOGY

This chapter deals with research methodology which includes the following; Research Design, Research Setting, Target Population, Sampling Technique, Instrument for Data Collection, Validity, Reliability of Instruments, Method of Data Collection, Method of Data Analysis and Ethical Consideration.

3.1 Research Design

The approach to this study was that of a non-experimental descriptive survey of the knowledge and practice of cord care amongst mothers in welfare Baby/Immunization Clinics of University of Benin Teaching Hospital.

3.2 Research Setting

The research works was carried out in Wellness Clinic of University of Benin Teaching Hospital, Benin City, the capital of Edo State which is a tertiary institution along Benin-Lagos express way in Ugbowo Community in Egor Local Government Area in Benin City. It was founded in 1973. It shares boundaries with the University of Benin Main Campus and the Federal Government Girls College Road, Benin City. The institution has a tripartite function of healing, teaching and research.

Welfare Baby/Immunization Clinic. It is located behind General Practice Clinic

3.3 Target Population

The target population comprises of 60. mothers attending child welfare clinic in University of Benin Teaching Hospital, Edo State.

3.4 Sample

The sample size was determined using Yamane formula of determining sample size for a finite population.

Using Taro Yamane's formula

$$n = \frac{N}{1+N(e)^2}$$

where:

n= Sample Size

N = Total population

e = Marginal of error (0.05%)

N = 60

Therefore;

$$n = \frac{60}{1+60(0.05)^2}$$

$$n = \frac{60}{1+60(0.0025)}$$

$$\frac{60}{1+0.375}$$

$$\frac{60}{1.375}$$

= 60.0955 + 4.5 = 59.5 approximately 60. Therefore, sample size for the study is 60



3.5 Sampling Technique

A sample size of 60 was selected using convenience sampling technique which was used with 60 respondents selected among mothers attending child welfare clinic from in University of Benin Teaching Hospital, Edo State.

Inclusion Criteria

Post natal mothers with neonates of 0-14 days of age and willing to participated in the study.

Exclusion Criteria

Mothers whose babies were older than 14 days of age.

3.6 Instrument for Data Collection

The instrument used for data collection was a semi structured questionnaire comprising of four sections.

Section A: Entails personal data of the respondents such as age, marital status, number of children etc.

Section B: Entails mother's knowledge of standard umbilical cord care such as what do you understand by umbilical cord care, what materials should be used in tying the umbilical cord, do you exposed and keep dry etc.

Section C: Entails standard cord care practices used by the mothers such as hand washing before and after cord cleaning in very essential for infection, I use a cord clamp to tie cord, how often do you clean the cord etc.

Section D: Entails the materials used for cord care by postnatal mothers such as methylated spirit only, chlorhexidine, toothpaste, message with hot water, Vaseline.

3.7 Validity of Instrument

The questionnaire was given to the research supervisor to evaluate the clarity of the items in order to ascertain face and content validity.

3.8 Reliability

A pilot study was conducted in welfare Baby Immunization Clinic UBTH using 10% of the population and split half reliability testing method was used to establish reliability of the instrument using Pearson product moment correlation coefficient (PPMCC) formula and a reliability coefficient of $r = 0.88$ was obtained which proved that the instrument was reliable to work with.

3.9 Method of Data Collection

A total of 60 questionnaire were distributed to the post natal mothers attending child welfare clinic in University of Benin Teaching Hospital and 60 questionnaire were retrieved. A verbal consent was obtained from the mothers before administering the questionnaire. The questionnaires were administered three times on three different days to different groups of mothers who visited the child welfare clinic and met the inclusion criteria for the study. The questionnaires were collected at the spot and the return rate was 98.4% (60 questionnaires were administered and 60 retrieved).

3.10 Method of Data Analysis

Data collected from the respondents was sorted out manually and represented by frequency tables, and pie chart. Descriptive statics was used for data analysis of the study using percentages as a statistical tool.

3.11 Ethical Consideration

Protocol number: ADME22/A/VOL. VII/148306628

The research procedures and the data collection tools were approved by the supervisor. A letter of permission was obtained and sent to the unit for permission from ADNS in change of the unit. An ethical consideration was taken into account revealing the nature of the study, which requires that voluntary informed consent was sought from the respondents.

Prior to administering the questionnaire, the aims and objectives were clearly explained to the participants. Also disclosure of personal information on the questionnaire was not required.

The respondents were encouraged to participate though it was optional. They were assured that the information gathered from them will be treated with confidentiality and anonymity.

CHAPTER FOUR

RESULTS

This chapter deals with the presentation of data collected from the study. The data are arranged and analyzed using graphical presentation and tables.

Section A: Personal Data

Table 1: Personal Data of Respondent

n=60

Variables	Frequency	Percentage (%)
Age of the mother (as at last birthday)		
15-20	5	8.3
21-25	5	8.3
26-30	15	25
31-35	20	33.3
36-40	5	8.3
41-45	8	13.3
46-50	2	3.3
Total	60	100
Marital Status		
Married	45	75
Single	10	16.7
Divorced	5	8.3
Widowed	0	0
Total	60	100
Number of Children		
1	12	20
2	15	25
3	20	33.3
4	8	13.3
5 and above	5	8.3



Total	60	100
Position of Present Infant		
1	12	20
2	15	25
3	20	33.3
4	8	13.3
5 and above	5	8.3
Total	60	100
Age of Infant		
0-7 days	40	66.7
8 -14 days	20	33.3
Total	60	100
Educational Level		
None	12	20
Primary	5	8.3
Secondary	25	41.7
Ternary	18	30
Total	60	100
Place of Birth of last Baby		
Government Hospital	12	20
Private Hospital	15	25
Church	20	33.3
Home	8	13.3
Traditional Birth Attendant	5	8.3
Total	60	100

Table 1 shows the personal data of the respondent. It was observed that 8.3% (5) of the respondents were within the age range of 15-20 years and 21-25 years, 25% (15) respondents were within 26-30 years, 33.3% (20) were within 31-35 years, 8.3% (5) respondent were within 35-40 years, 13.3% (8) respondent were within 41-45years and 3.3% (2) respondent were 46-50 years.

A larger percentage (75%) were married, while 16.7% and 8.3% were single and divorced respectively.

20% of the respondents had only one child, 25% had two children, 33.3% had 3 children, 13.3% had four children while 8.3% had 5 children and above.

66.67% of the respondent infant's age were within 8-14 years old.

20% had no formal education, 8.3% had only primary education, 41.7% had secondary education while 30% had tertiary education.

16.7% reported that they gave birth in government hospital, 16.7% in private hospital, 25% in church 8.3% home while 33.3% at the traditional birth attendant.

Section B: Knowledge of Standard Umbilical Cord Care**Research Question 1: Do Postnatal Mothers in UBTH have Knowledge of Umbilical Cord Care**

Question 8 - 12 on the Questionnaire were asked to answer this research question.

This shown in Table 2 and 3

Table 2: What do you understand by Umbilical Cord Care?

S/N	Variables	Frequency	Percentage (%)
8	What do you understand by umbilical cord care		
	Involves	3	5
	Trying and cutting and cleaning with methylated spirit only	30	50
	Keeping the cord clean dry and free from infection	27	45
	Rubbing toothpaste on the cord	-	-
	Other (specify)	-	-
	Total	60	100
9	What material should be used in tying the umbilical cord?		
	String of cloth	-	-
	Cord clamp	57	95
	Rubber band	-	-
	Hair thread	3	5
	Others (Specify)	-	-
	Total	60	100

Table 2 shows that 5% of the respondent understood that standard umbilical cord care involves the use of herbs, 50% know it was the tying , cutting and cleaning of the cord with methylated spirit only while 45% understood it to be keeping of the cord clean, dry and free from infection.

Table 2 also shows that a great percentage (75%) of the respondents knew that cord clamp should be used in tying umbilical cord while 5% know about hair thread. This shows that the respondents had a good knowledge on what to be used to tie the umbilical cord.

Table 3: Cord Hygiene

S/N	Variables	Yes	No	Total
10	Should the cord be exposed and kept dry?	55(91.75%)	5(8.3%)	60(100%)
11	A smelling cord is a sign of infection	57(95%)	3(5%)	60(100%)
12	Advantage of cord care is;			
	i. To prevent infection	52(86.7%)	8(13.3%)	60(100%)
	ii. To fasten cord separation	24(40%)	36(60%)	60(100%)

Table 3 shows that majority of the respondent (91.7%) knew that cord should be exposed and left dry while 8.3% did not know. Also, 95% know that a smelling cord is a sign of infection while 5% did not know and 85.7% knew that cord care was to prevent infection while 13.3% did not know. 60% knew that cord care does not fasten the cord separation and 40% did not know. This implies that a great percentage of the respondents had good idea of standard umbilical cord care.

Section C: Standard Cord care Practice among Postnatal Mothers in UBTH

Research Question 2: How do Post-Natal Mothers of UBTH, Benin City Care for their Neonate Umbilical Cord?

Table 4: Standard Cord Care Practices

S/N	Questions	Yes	No	Total
13	Hand washing before and after cord care	57(95%)	3(5%)	60(100%)
14	Use cord clamp to tie the cord	57(95%)	3(5%)	60(100%)
15	I kept the cord exposed and dry	54(90%)	6(10%)	60(100%)
16	I clean the cord base before the stump	51(85%)	9(15%)	60(100%)
17	How often do you clean then cord?			
	Once daily	6(10%)		

Twice	21(35%)		
3 times daily	30(50%)		
4 times daily	3(5%)		60(100%)

Table 4 shows that 95% of respondents practiced hand washing before and after umbilical cord care while only 5% did not. 95% also used cord clamp to tie the cord while 5% used other materials. 90% kept the cord exposed and dry while 10% did not practice. 85% of the respondent practiced cleaning the cord base before the stump while 15% clean the stump before the base. Also, the table shows that a greater percentage of 90% cleaned their baby’s cord more than once a day.

This signifies that the postnatal mothers in UBTH practiced standard cord care.

Section D: Materials Used for Cord Care

Research Question 3: What Materials do post-natal mothers of UBTH Use in Caring for their Neonate’s Umbilical Cord?

Question 18-22 on the questionnaire were used to answer this research questions

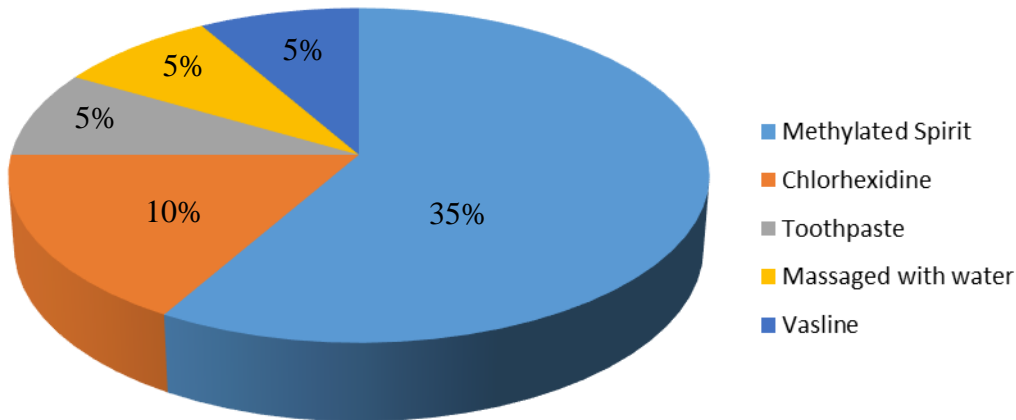


Figure 1: A pie Chart Showing the Materials Used for cord Care by Respondents

Figure 1 show that 35 respondents used methylated spirit in the cord care of their infants, 10 used chlorihexidine, 5 used toothpaste, 5 massaged the umbilical cord with hot water and 5 respondents used Vaseline.

(See appendix III for calculation for pie chart).



4.1 Testing of Hypothesis

H₀: There is no significant relationship between knowledge and practice of umbilical cord care among postnatal mothers of UBTH, Benin City.

Table 5: Pearson's Product moment Correlation Analysis of Knowledge and Practice of Umbilical cord Care among Postnatal Mothers of UBTH, Benin City

X	Y	XY	X ²	Y ²
57	3	171	3249	9
57	3	171	3249	9
54	6	324	2916	36
51	9	459	2601	81
33	27	81	1089	729
ΣX = 252	ΣY = 48	ΣXY = 2016	ΣX² = 13014	ΣY² = 864

n = 5, df = 3, calculated value = 1, critical value is 0.085

Decision Rule

Reject null hypothesis (H₀) if calculated value is greater than the critical value. Since the critical value is 0.811 at the level of significance of 0.05 and at a degree of freedom of 3 is less than the calculated value which is 1, hence the null hypothesis is rejected indicating there is a significant relationship between the knowledge and practice of umbilical cord care among post-natal mothers of UBTH Benin City.

CHAPTER FIVE

DISCUSSION OF FINDINGS

This chapter cover the highlight of findings relationship with other studies, literature review, implications of findings to nursing limitations of the study, summary, conclusion, recommendations/suggestions for further studies.

From the findings obtained, it showed that a fair percentage of respondents had a good knowledge of standard umbilical cord care while a great percentage of the respondents knew that cord clamp should be used in tying umbilical cord. This is line with the study carried out by Udosen et al (2018) in Calabar Metropolis on the knowledge and attitude of nursing mothers towards umbilical cord care. In the study, majority of mothers knew that standard umbilical cord care means tying, cutting and cleaning of the cord.

This study is also in line with the study carried out in Jos by Mohammed et al (2020) who reported that nursing mothers have fair knowledge on cord care hygiene.

Majority of the respondents practiced hand washing before and after umbilical cord care while only a few respondents did not. Majority also used cord clamp to tie the cord while less

used other materials, which is in line with the study carried out in South-West Nigeria by Ndikom et al (2020) who reported that majority of nursing mothers practiced adequate cord cleaning after delivery, proper hand washing, and used clamp to tie the cord after delivery. While some of the respondents used methylated spirit to clean the cord and 10 of the respondents used chlorhexidine in cord cleaning showing that a few number of the respondents used the proper materials for cord care.

From the hypothesis of the study, it was revealed that there is a relationship between knowledge and practice as their knowledge affected their practice, which is in line with the study carried out by Ndikom et al (2020) in Calabar, who reported that mothers who had knowledge of umbilical cord care had good practice as compared to mother who did not. Therefore, respondents' knowledge of umbilical cord care is associated with cord care practices.

In line with this study, overall cord care practice of mothers was more than half of the respondents reported having applied unnecessary substances for cord care. Also some among these women, some applied shear butter and Vaseline, respectively.

However, the study conducted in India on cord care, has discrepancy between these findings, which could be attributed to the difference in methods used, study settings, and sample size used. Furthermore, the variation might be due to expanding health care coverage, increased awareness and information, and maternal health services. The findings of this study was in line with a study conducted in Nigeria and Rwanda. However, the findings of this study were lower than those of studies conducted in Chit wan district East Gojjam, Nepal and Nigeria. This variation might be due to the study setting and multi-cultural variation among countries and regions, which may be due to study setting and multi-cultural variation among countries and regions.

A study conducted in Ghana find out that mothers' educational status was significantly associated with cord care practices. The use of beneficial cord care practices increased as maternal education increased. The practice of cord care grew in line with mother's education. Highly educated mothers are more likely to practice good cord care because they might have learned what should be done in cord care. Differences in educational status may be caused by the health extension program of the country which provides adequate service for all mothers regardless of educational status. These findings are consistent with studies that show that the higher the level of maternal education, the better the health-seeking behavior and thus exposure to better knowledge of cord care practice. The umbilical cord is an important portal of entry for pathogenic agents. Thus, parents, especially mothers, need to understand the necessity of appropriate cord care practices.

In our study, mothers who had ANC follow-up in a health facility were more likely to have effective cord care practices than those who had no ANC follow-up, which was in line with the studies conducted in Cameroon. The possible reason could be that mothers who visited ANC were counseled on the advantages of delivery by skilled birth attendants and institutional delivery, which is believed to increase their knowledge and practice about good cord care.

Mothers who did not add anything to the cord must have practiced good cord care, indicating that the use of harmful agents was more common among mothers of babies who delivered at traditional birth attendant's facilities. The majority of mothers who used nothing on the cord, had better cord care practices than those who used unaccepted substances on the cord. The use of substances in cord care has long been linked to umbilical cord infection in studies

conducted in various settings. This has highlighted the significance of culture as a driver of cord care practice, as well as its underappreciated subtle contributions to neonatal morbidity and mortality, particularly in resource-poor countries. The World Health Organization has stated that dry and cord care practices are critical for reducing neonatal and under-five mortality in developing countries.

5.1 Implication of Nursing

Proper education on the methods and materials to be used for good umbilical cord care should be done by the nurses during antenatal visits. Nurses should demonstrate and also allow the mothers do same, so as to allow for proper correction as this would help to reduce the number of neonatal infections resulting from infected umbilical cord, thus helping to reduce the rate of neonatal mortality and morbidity.

5.2 Limitations to the Study

The major limitation in this study was the sensitive nature of the study which imposed constraints in accessing the respondents, coupled with mothers with their babies and this distracted them from full concentration and persuasion was needed to get their appropriate responses in some sections.

5.3 Summary to the Study

The research was carried out to determine the knowledge and practice of umbilical cord care among post-natal mothers in UBTH, Benin City, Edo State. Three research questions were made based on the objective of study. Literature review was done based on the objectives of the study and one null hypothesis was stated to guide the study. The sample size of 60 was used as calculated using Yamane formula. However, 60 questionnaires were given out and were retrieved. Data collected was analyzed using descriptive statistics of frequency and percentages count as presented in tables and pie charts. The findings of the study provided answers to research questions and the null hypothesis was accepted as tested using Pearson's product moment correlation and the study yielded that though the mothers had knowledge of standard cord care, most of them did not apply the knowledge in practice.

5.4 Conclusion

Based on the finding of this study, the respondent had a good knowledge of standard umbilical cord care, majority knew that the cord should be exposed and kept dry. Also, majority of the respondents (95%) practiced hand washing before and after umbilical cord care showing a good level of practice.

5.5 Recommendation

Based on the findings from the study, the researcher recommends that;

Mothers should be educated on how to carry out standard umbilical cord care during antenatal visits.

Importance of proper umbilical cord care in the prevention of neonatal mortality and morbidity should be made known.

Training of traditional birth attendants and other unskilled personnel who take delivery on the proper handling of the umbilical cord care.

5.6 Suggestions for Further Studies

The researcher seeks that this study; knowledge and practice of umbilical cord care among postnatal mothers should be conducted in communities and other states in Nigeria.

REFERENCES

- Abhulimen-Iyoha, B.I., Ibadin, M.O. (2018). Determinants of cord care practices among mothers in Benin city, Edo State, Nigeria. *Nigerian Journal of Clinical Practice*. 15:210-213.
- Abhulimen-Iyoha, B.I., Ibadin, M.O., (2019). Cord care education and its content given to mothers at antenatal clinics in various health facilities in Edo State, Nigeria. *Sahel Medical Journal*. 18:129-133.
- Afolaranmi, T.O., Hassan, Z.I., Akinyemi, O.O., Sule, S.S., Maleté, M.U., Choji, C.P. & Bello, D.A. (2018). Cord care practices: A perspective of contemporary African setting. *Front Publish Health* 2018:6:10. Published online 2018 Jan 31.
- Agrawal, P.K., Agrawal, S., Mullany, L.C., Darmstadt, G.L., Kumar, V., Kiran, U. et al (2018). Clean cord care practices and neonatal mortality: evidence from Uttar Pradesh, India. *Journal of Epidemiology and community medicine*. 66(8): 755-758.
- Bemor, F & Uta, D. (2019). Saving Newborns Lives in Nigeria. Integrated Health Strategy. *Global Journal* 74(6):21-26.
- Bhatt, B., Malik, J.S., Jindal H., Sahoo, S., & Sangwan, K.A. (2015). Study to assess cord care practices among mothers of newborns in Urban areas of Rohtak Haryana. *Int. J. Basic and Applied Medical Science*. 5(1). 55-60.
- Cobo, T., Kacerovsky, M., Andrys, C., et al. (2020). Umbilical cord blood as a predictor of early onset neonatal sepsis in women with preterm prelabor rupture of membranes. *Zakar. T. PLOS ONE* 8(7).
- Coffey, P.S. Brown, S.C. (2017). Umbilical cord care practices in low and middle income countries: A systematic review. *BMC pregnancy and childbirth* 17, 68. <https://www.usaid.gov/news-information/frontlines/march-april-2017/nigeria-commits-scaling-use-antiseptic-gel>. Accessed on 19/08/2020.
- Karumbi, J., Mulaku, M., Aluvada, J., English, M., Opiyo, N. (2018). Topical umbilical care for prevention of infection and neonatal mortality. *Pediatr Infect Dis J*. 32(1).
- Kinanu, L., Odhiambo, E., James, M., Habtu, M. (2017). Cord care practices and omphalitis among neonates aged 3-28 days at Pumwani maternity Hospital, Kenya. *Journal of Biosciences and Medicines*. 4; 27-36.
- London, M.L., Ladewig, P.W., Ball J.W., & Bindler, R.C. (2018). Maternal and child

- nursing care. Latest edition. Upper Saddle River. Pearson.
- Mitul, A.R. (2019). Surgical neonatal sepsis in developing countries. *Journal of Neonatal surgery* 4(4): 41-45.
- Mohammed, A., Envuladu, E.A., Osagie, I.A., & Difa, J.A. (2020). Assessment of knowledge and cord care practices among pregnant women in selected PHCs in Jos Metropolis. Plateaus State. *Int. J. Community Med. Public Health*; 7:1215-9.
- Moran, A.C., Kerber, K., Sitrin, D., Guenther, T., Morrissey, C.S., Fishel, J. (2020). Measuring coverage in MNCH: Indicators for global tracking of newborn care. *PLOS med.* 10(5): e1001415. Accessed 02/05/2020 from www.plosmedicine.org.
- Ndikom, C., Abimola, O. (2020). Umbilical cord care knowledge and practices of mothers attending selected primary health centres in Ibadan, Nigeria. 1-143.
- Osuchukwu, E.C., Ezeruigbo, C.S.F., Eko, J.E. (2018). Knowledge of standard cord management among mothers in Calabar South Local Government Area, Cross River State, Nigeria. *International Journal of Nursing Science.* 7(3):57-62.
- Udosen, I.E., Olaoye, T., Okondu, E., Udosen, G.E., & Amaechi, D. (2019). Knowledge and attitude of nursing mothers towards umbilical cord care in Calabar Metropolis, Cross River State. *Asian Journal of case reports in Medicine and Health.* 2(1): 1-16. Article No: AJCRMH, 48968.
- United States Agency for International Development (2017). Nigeria commits to scaling up use of antiseptic gel to reduce newborn deaths.
- World Health Organization (2018). Newborns: reducing mortality factsheet. Accessed 26/05/2020.

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APPENDIX 1

QUESTIONNAIRE.
SCHOOL OF POST BASIC NURSING
PAEDIATRIC NURSING PROGRAMME
UNIVERSITY OF BENIN TEACHING HOSPITAL.
KNOWLEDGE AND PRACTICE OF UMBILICAL CORD CARE AMONG
POST-NATAL MOTHER IN UNIVERSITY OF BENIN TEACHING HOSPITAL, BENIN CITY.
EDO STATE.

Dear Respondent,

I am a student of the above mentioned institution conducting a study on the knowledge and practices of umbilical cord care among post-natal mother in UBTH, Edo State.

I solicit your assistance in answering the questions in the questionnaire which aimed obtaining information necessary for the study.

I promise that data obtained from you will be treated with confidentiality and strictly used for academic purpose only.

Yours faithfully,

AKHAME SANDRA

Section A: Personal Data

1. Age as at last birthday of mother: 15-20 [], 21- 25 [], 26-30 [], 31-35 []
2. Marital Status: Married [], Single [], Divorced [], Widowed []
3. Number of Children: 1 [], 2 [], 3 [], 4 [], 5 and above []
4. Position of Present Infant: 1 [], 2 [], 3 [], 4 [], 5 and above
5. Age of Infant: 0-7 [], 8 -14 days []
6. Educational Level: None [], Primary [], Secondary [], Tertiary []



7. Place of Birth of the Last Baby: Govt. Hospital [], Private [], Church [], Home [],
Traditional Birth Attendant []

Section B: Knowledge of Standard Umbilical Cord Care

8. What do you understand by umbilical cord care?
- a. Involves the use of herbs []
 - b. Tying, cutting and cleaning with methylated spirit only []
 - c. Keeping the cord clean and dry and free from infection []
 - d. Rubbing toothpaste on the cord []
 - e. Others specify _____
9. What materials should be used in tying the umbilical cord
- a. String of cloth []
 - b. Cord band []
 - c. Rubber band []
 - d. Hair thread []
 - e. Others Specify _____
10. Do you exposed and keep dry? Yes [], No []
11. A smelling cord is a sign of infection Yes [], No []
12. What is the advantage of clean cord care?
- a. To prevent infection Yes [], No []
 - b. To fasten cord separation Yes [], No []

Section C: Standard cord Care Practices

13. Hand washing before and after cord cleaning is very essential for infection prevention and control? Yes [], No []



14. I use a cord clamp to tie cord? Yes [], No []
15. I kept the cord exposed and dry? Yes [], No []
16. I clean the cord base before the stump? Yes [], No []
17. How often do you clean the cord
- a. Once daily []
 - b. Twice daily []
 - c. 3 Times daily []
 - d. 4 times daily []

Section D: Material Used For Cord Care

18. Please choose the material(s) you used for the cord care
- ❖ Methylated spirit only []
 - ❖ Chlorhexidine []
 - ❖ Toothpaste []
 - ❖ Massage with hot water []
 - ❖ Vaseline []

INFORMED CONSENT FORM

TITLE OF STUDY: Knowledge And Practice Of Umbilical Cord Care Among Post-Natal Mothers In University Of Benin Teaching Hospital, Benin City, Edo State.

INSTITUTION: School Of Post Basic Nursing Studies Paediatric Nursing Programme University Of Benin Teaching Hospital Benin City, Edo State.

PRINCIPAL INVESTIGATOR: Akhame Sandra



PARTICIPATION: Participation in this study is voluntary. Refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled. You may discontinue your participation at any time without penalty or loss of benefits. The principal investigator may decide to withdraw you from the study if we are unable to obtain the necessary information.

INTRODUCTION: I'm interested in examining Knowledge And Practice Of Umbilical Cord Care Among Post-Natal Mothers In University Of Benin Teaching Hospital, Benin City, Edo State. I will only ask questions on knowledge and practice of umbilical cord care among mothers, standard cord care practice, materials used for cord care.

PROCEDURES TO BE FOLLOWED

QUESTIONNAIRE: If you agree to participate, I will ask you questions about your age, sex, number of children, occupation and frequency of hospitalization.

BENEFITS: You will be enlightened on the benefits of child hospitalization

COMPENSATION: There is no compensation to volunteers for their participation.

DURATION OF PARTICIPATION: This study only requires the questionnaire. There is no follow-up or further information needed.

WHO CAN PARTICIPATE IN THIS STUDY: Parents especially mothers of children admitted to Pediatric Medical, Special Care Babies Unit, Pediatrics Surgical and Children Emergency room will be participating in the study.

ASSURANCE OF CONFIDENTIALITY OF VOLUNTEER'S IDENTITY: Records relating to your participation in the study will remain confidential. Your name will not be used in any report resulting this study. All questionnaires, computerized records, and analysis of data will contain only a unique study number, not your name.

PERSONS AND PLACES FOR ANSWERS REGARDING YOUR RIGHTS AS A RESEARCH

SUBJECT: If during the course of this study you have questions concerning the nature of the



research or you believe you have sustained a research-related injury or assault, you should contact;

Akhame Sandra

Department of Paediatric Nursing

School of Post Basic Nursing Studies

Benin City

Edo State,

Nigeria.

Phone number: 08141392841

Email: akhamesandra2013@gmail.com.

Ethics and Research Committee,

University of Benin Teaching Hospital

Phone: 07063331337

Email: ubthresearchethic@gmail.com



APPENDIX II

RELIABILITY TESTING

	X	Y	XY	X ²	Y ²
1	8	6	48	64	36
2	5	4	20	25	16
3	6	5	30	36	25
4	5	4	20	25	16
5	6	4	24	36	16
6	5	3	25	25	9
	$\Sigma X = 35$	$\Sigma Y = 26$	$\Sigma XY = 157$	$\Sigma X^2 = 211$	$\Sigma Y^2 = 118$

$$r = \frac{n\Sigma XY - (\Sigma X)(\Sigma Y)}{\sqrt{[n\Sigma X^2 - (\Sigma X)^2][n\Sigma Y^2 - (\Sigma Y)^2]}}$$

$$r = \frac{(6 \times 157) - (35 \times 26)}{\sqrt{[6 \times 211 - (35)^2][6 \times 118 - (26)^2]}}$$

$$r = \frac{942 - 910}{[1266 - 1225][708 - 676]}$$

$$r = \frac{32}{\sqrt{(41)(32)}} = \frac{32}{\sqrt{1312}} = \frac{32}{\sqrt{36.2}}$$

$$r = 0.88$$





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DIRECTOR OF ADMINISTRATION: M.O. JIMOH-KADIR
B. Sc. (Hons)FJPM, Dip. Theo.AHAN

ETHICS AND RESEARCH COMMITTEE APPROVAL

PROTOCOL NUMBER: ADM/E 22/A/VOL. VII/148306628

PROPOSAL TITLE: "KNOWLEDGE AND PRACTICE OF UMBILICAL CORD CARE AMONG POST-NATAL MOTHERS IN UNIVERSITY OF BENIN TEACHING HOSPITAL, BENIN CITY, EDO STATE"

PRINCIPAL INVESTIGATOR(S): AKHAME SANDRA

DEPARTMENT/INSTITUTION: PAEDIATRIC NURSING PROGRAMME, SCHOOL OF POST BASIC NURSING STUDIES, UNIVERSITY OF BENIN TEACHING HOSPITAL, BENIN CITY, EDO STATE

DATE CONSIDERED: SEPTEMBER 27TH 2022

DECISION OF THE COMMITTEE: APPROVED

THIS APPROVAL DATES 27/9/2022 TO 26/9/2023. IF THERE IS DELAY IN STARTING THE RESEARCH, PLEASE INFORM THE E&RC SO THAT THE DATES OF APPROVAL CAN BE ADJUSTED ACCORDINGLY

REMARK:

CHAIRMAN: PROF. (MRS) A.N. OFILI

SIGNATURE & DATE: *[Signature]* 27/09/2022



SUPERVISOR(S): MRS ITSEGHOSIMHE

DECLARATION BY INVESTIGATOR(S):

PROTOCOL NUMBER (please quote in all enquiries)

Note that no participant accrual or activity related to this research may be conducted outside of these dates. All informed consent forms used in this study must carry the E&RC assigned number and duration of E&RC approval of the study. In multiyear research, endeavor to submit your annual report to the E&RC early in order to obtain renewal of your approval and avoid disruption of your research. No changes are permitted in the research without prior approval by the E&RC except in circumstances outlined in the Code. The E&RC reserves the right to conduct compliance visit your research site without previous notification.

Signature & Date: *[Signature]* 6-10-2022

