

## BREASTFEEDING MOTHER'S KNOWLEDGE OF NEONATAL HYGIENE AT MUKONO GENERAL HOSPITAL IN MUKONO MUNICIPALITY: A CROSS-SECTIONAL STUDY.

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### Abstract

#### Background

Knowledge refers to the information, breastfeeding mothers have on how and when to clean breast-feeding bottles, the breast during the breast-feeding process, the neonates and their clothing, and how to keep the neonate's surroundings. The study aims to describe the knowledge of breastfeeding mothers on the hygiene of their neonates.

#### Methodology

A quantitative descriptive cross-sectional study involving only breast-feeding mothers with babies less than 28 days of life, both those who have gone through normal delivery and caesarian section irrespective of their age, tribe, and education level. Data was analyzed using SPSS version 24.0. A simple random method was used to select 296 respondents.

#### Results

93.3% (28/30) of the respondents managed to at least attend one or more than one level of education. 70.0% (21/30) of the mothers were assisted by midwives, 10.0% (3/30) were assisted by doctors, 6.7% (2/30) were assisted by traditional birth attendants, and 13.3% (4/30) were assisted by other people in the community while delivering their current babies. About 53.3% (16/30) of the mothers knew that the baby's cord should be cleaned with saline water, 40.0% reported bathing their neonates with soapy water and dry, majority 56.7% (12/30) knew that the mother's breast should first be wiped before breastfeeding. Concerning the prevention of diseases in babies, 53.3% of mothers reported that it is important to dry the baby after bathing.

#### Conclusion

The majority of the respondents had the right knowledge about Neonatal hygiene but the proportion of those who did not have relevant adequate knowledge is a threat to the general health of the children

#### Recommendations

Health workers need to bridge the gap between the community and health workers to encourage mothers to seek healthcare freely without fear.

**Keywords:** Knowledge, Neonatal hygiene, Breastfeeding mothers

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#### Background

Knowledge refers to the information, breastfeeding mothers have on how to clean breastfeeding bottles, when and how to clean the breast during the breastfeeding process, how and why to clean the neonates and their clothing, and how to keep the neonate's surroundings clean and free from dust. The extent of knowledge and its application in the daily life of pregnant and breastfeeding mothers is a major factor that influences maternal and child health. Approximately 1,700,000 babies are born in Uganda per year or around 4600 every day (UNICEF, 2015). About 81 babies will die

each day before reaching the first month, 96 stillbirths occur every day. Uganda's neonatal mortality rate (NMR) is 19 deaths per 1,000 live births. The neonatal mortality rate in rural areas is 30 deaths per 1000 live births and 31 deaths per 1000 live births in urban areas. The neonatal mortality rate among the poorest households is 26 neonatal deaths per 1000 live births, compared to 34 deaths per 1000 live births among the richest households (UNICEF, 2015).

Knowledge refers to what mothers know about personal hygiene, environmental hygiene, cleaning of neonates, and their clothing and utensils. When a mother is unable to carry

out the majority of the mentioned activities, she is considered to have less knowledge of hygiene. Mothers who never attended antenatal care are significantly more likely to have inadequate knowledge compared with those who have attended any antenatal care and mothers who never attended school are twice as likely to have poor knowledge regardless of their age, socioeconomic status, and area of residence (Essa, 2010). Most mothers who deliver from hospitals have more knowledge about the hygiene of their neonates compared to those who deliver from Traditional Birth Attendants (TBA) because, after delivery, nurses/ midwives and doctors teach these mothers about hygiene and danger signs in neonates before discharging them from post-natal departments. In Rural Sierra Leone, only 43.9% of mothers know the relationship between poor hygiene and diarrhea, 26.2% of mothers do not know about the prevention of diarrhea in their children and only 11.9% of the mothers know about the prevention of diarrhea in children (Joseph et al, 2014). In both rural and urban settings in the Rajanpur District of Punjab Province, Pakistan, found that working mothers, especially first-time mothers have less time for caring for their neonates (Zakar, 2018). The study aims to describe the knowledge of breastfeeding mothers on the hygiene of their neonates.

## **Methodology**

### **Study Design**

A quantitative descriptive cross-sectional study was designed to describe the knowledge breastfeeding mothers have on hygiene and the practices they do to maintain the hygiene of their neonates. Breastfeeding mothers were captured as they came for review, immunization, and medical checkups for their babies at a specific point in time of data collection. The findings of the study were recorded which helped to make a conclusion on neonate hygiene practices among breastfeeding mothers.

### **Study Setting**

The study was conducted at Mukono General Hospital which was known as Mukono Health Center IV in Butebe village in Mukono town (Uganda). Mukono General Hospital is located in the east of Kampala on the Kampala-Jinja highway in Mukono town under Mukono municipality approximately 21 kilometers (12 miles) from Kampala the capital city of Uganda. This hospital is owned and operated by the Government of Uganda, through Uganda's Ministry of Health though some of the operational funding is met by outside donors such as Finance Trust Bank. This hospital was founded and started in 1930 as Mukono Health Center IV until when it was made a general hospital on 1st, July 2019 by the government of Uganda. It covers the biggest population of patients in Mukono district because it's a government hospital offering free services or minimal prices

for some services like scan and laboratory services which makes it affordable for everyone in the community. According to Dr. Geoffrey Kasiry (medical officer in charge of the hospital), the hospital covers at least 200 outpatients every day and approximately 25 deliveries every day from counties of Mukono district. For example, Goma, Kasawo, Nabaale, Nama, Kkome islands, Kyampisi, Nagojje, Ntenjeru, Kimenyedde, Mukono TC, Nakisunga, and Ntunda, and Seeta covering a total population of Mukono district which stands at 807923 people among them 403117 are females and 141990 are males according to Uganda Bureau of statistics (UGOS), 2014. Its mission is to provide qualitative, affordable, curative, and preventive health services and also to provide for the emotional and spiritual needs of all irrespective of their tribe, nationality, gender, language, or need with the underlying principle. It operates under a vision "to be a health facility with a holistic model of health care that meets the health needs of humanity to the glory of God". The hospital covers approximately 15570patients (male and female) annually in both inpatient and outpatient departments with a bed capacity of 40beds and it offers the following services; Major and minor surgeries, dental, General laboratory services, HIV/AIDs care and prevention services, general treatment, Family planning, Antenatal, maternity, General outpatient department, Maternal child health, general inpatient services and general immunization. The hospital offers care to mothers with professions and those without professions doing different activities from their respective communities including traders, farmers, teachers, and casual workers (housemaids, cleaners, waitresses ... etc..). The study was conducted at the postnatal clinic in the postnatal building opposite the main operating theatre. This clinic attends to mothers who have undergone both normal delivery and cesarean section with babies below 28 days of life who have come for review after their discharge from post-natal wards or those who have gotten complications when at home like malaria, vomiting, and diarrhea. The clinic is open from 8:00 a.m. to 2:00 pm during weekdays from Monday to Friday covering an average of 10 mothers with their babies a day. The services at the clinic are provided by 3 health workers that are an enrolled midwife, a registered midwife, and a gynecological doctor in case of any complication. This study site was feasible for research because it was near, affordable, and convenient for the availability and accessibility of study participants as compared to other study sites around.

### **Study Population**

The target population for the research was breastfeeding mothers, the accessible population was breastfeeding mothers at Mukono General Hospital and the study population was breastfeeding mothers at postal natal clinic with children below 28 days of life.

### Inclusion Criteria

The study aimed to involve only breastfeeding mothers with babies less than 28 days of life, both those who have gone through normal delivery and caesarian section irrespective of their age, tribe, and education level. The study also aimed to exclude mothers who did not attend antenatal care during their pregnancy time, those who were mentally unstable, and those who were not willing to give information about the study.

### Sampling Method

A simple random method was used with replacement because it gave participants equal chances of participating in the study every time. Only mothers present on that day of data collection were considered and randomized using simple random sampling with replacement.

### Sample Size Determination

Step1; Sample size was determined using the Kish and Leslie formula

$n_0$  – desired sample size

Z – Was the z value at 95% confidence interval, 1.96

p – was the proportion in the target population estimated to have characteristics being measured (breastfeeding mothers with babies below of 28days of life), according to Sr. Alex Namara (senior nursing officer of Mukono General Hospital), she said that almost 95% of the mothers delivered at Mukono general hospital had attended at least one visit of antenatal services which brings our p estimate to 95% (0.95)

Q – Is the target population estimated to have characteristics not being measured  $Q = (1-p)$  also estimated at 5 and the level of precision level is e - standard error, 0.05

Desired sample size  $n_0 = (1.962 * 0.95 * 0.05) / 0.052$

The desired sample size was 72.9904

Step2: The sample size was determined using the following formula

$nf = n$

$(1+n)/N$

Where- was the desired sample size for breastfeeding mothers

n-was the desired sample size when the population of breastfeeding mothers is greater than 10,000

N- Was the estimated population size of breastfeeding mothers who attended at postnatal clinic

According to Dr. Kasirye Geoffrey (Doctor in charge of the hospital), a minimum of 10 mothers with babies below 28 days of life are received every day at the post-natal clinic making a total of approximately 300 mothers with their babies per month. These include those who have come for review, and immunization and those who have come for medical checkups of their babies. Thus  $N=300$

Desired sample,  $nf = n / ((1+n)/N)$

Desired sample =  $72.9904 / ((1+72.9904)/300)$

Desired sample  $nf = 295.9870$ ,

Therefore our desired sample was 296.

### Sampling Procedure

Simple random sampling with replacement was used to select participants as this gave equal and independent chances to each participant of being selected each time. In this, all participants who were present on that day of data collection were given numbers for identification, a sample frame was created where papers were put in the bowl shaken and the picked paper was recorded and taken back.

### Data Collection Method

Data collection took one week, and it was conducted using the questionnaire. The questionnaire was adapted from a quantitative cross-sectional survey on the assessment of practices and knowledge of breast-feeding mothers on maternal and child health in Rural Sierra Leone (Joseph Sam Kanu, Yuan Tang, Yawen Liu, 2014), and an email was sent to the concerned person to ask for the permission and response received. A structured questionnaire which was used consisted of both closed and open-ended questions. The questionnaire involved sections; demographic characteristics, antenatal history, post-natal and breast-feeding history, knowledge of hygiene and practices of hygiene in breastfeeding mothers, and assessment of support provided by employer, friends, family members, and healthcare providers. Consent was first obtained from mothers before the interviews began, all interviews were conducted both in English and Luganda since they were the commonly used languages in our target population. Questionnaires were distributed to participants by the researchers, and this took approximately 10 to 15 minutes in the waiting area of the post-natal clinic.

### Reliability and Validity

The investigators conducted a pilot study to test the clarity and acceptability of the instrument package to the participants. It was carried out in Mukono Church of Uganda hospital which was considered to have the same community characteristics as the study health facility, this helped the researchers to get an overview of what breastfeeding mothers do to maintain the hygiene of their neonates. The participants of this study were breastfeeding mothers seeking health services. Questionnaires were given to the participants and the collected data was analyzed using SPSS.

### Quality of Data Collection

After every field visit, raw data was inspected for completeness, correctness, and consistency, and questionnaires with missing information greater than 10%

of the total questions were eliminated. Meetings were conducted a day before the day of collection of data and adjusted where it was necessary. The data was coded and entered into access spreadsheet databases.

### Data Analysis

Data was analyzed using SPSS version 24.0. A descriptive analysis was conducted to summarize the characteristics of all mothers and their babies in the sample study. Analysis of the mother's demographic profile characteristics was done using measures of the central tendencies including mean and mode and were tabulated in the frequency table.

Antenatal and post-natal history of the most recent pregnancy including the healthcare they seek during pregnancy and health education on breastfeeding after childbirth were described by calculating the percentages of all mothers who reported to have been given health education about breastfeeding by their health workers.

Knowledge of hygiene of breastfeeding mothers was calculated in the percentage of mothers who knew at least

one maternal and infant benefit of personal hygiene. Knowledge was compared with maternal demographic characteristics including age and level of education.

Hygienic practices among breastfeeding mothers were described and compared with maternal demographic characteristics.

### Data Ethical Consideration

An introduction letter and clearance to conduct the study were obtained from the nursing department under the faculty of health sciences at Uganda Christian University and were presented to the hospital administration of Mukono General Hospital.

Each participant signed a consent form to take part in our study. The participants voluntarily participated, and confidentiality was maintained throughout the study.

After data collection, mothers were given health education concerning the benefits of breastfeeding and hygiene.

### Results

**Table 1: Socio-demographic information of the study respondents**

| Demographic data              |           |            |         |                    |
|-------------------------------|-----------|------------|---------|--------------------|
| Variable item                 | Frequency | Percentage | Mean    | Standard deviation |
| Age                           |           |            | 24.9333 | 4.94754            |
| 15-19                         | 5         | 16.7       |         |                    |
| 20-24                         | 11        | 36.7       |         |                    |
| 25-29                         | 8         | 26.7       |         |                    |
| 30-34                         | 5         | 16.7       |         |                    |
| 34-39                         | 1         | 3.3        |         |                    |
| Total                         | 30        | 100        |         |                    |
| Buganda                       | 13        | 43.3       |         |                    |
| Ankole                        | 4         | 13.3       |         |                    |
| Busoga                        | 5         | 16.7       |         |                    |
| Iteso                         | 1         | 3.3        |         |                    |
| Others                        | 7         | 23.3       |         |                    |
| Total                         | 30        | 100        |         |                    |
| Primary level                 | 8         | 26.7       |         |                    |
| O-level                       | 12        | 40.0       |         |                    |
| A-level                       | 6         | 20.0       |         |                    |
| Degree level                  | 2         | 6.7        |         |                    |
| Not applicable                | 2         | 6.7        |         |                    |
| Total                         | 30        | 100        |         |                    |
| Cannot read at all            | 7         | 23.3       |         |                    |
| Able to read part of sentence | 6         | 20.0       |         |                    |
| Able to read whole sentence   | 17        | 56.7       |         |                    |
| Total                         | 30        | 100        |         |                    |

Table 1 indicates that majority of the respondents were in age range of 20 to 24years 36.7% (11/30) with a mean age of 24.9333 and standard deviation of 4.9475, 43.3%(13/30) were from the Buganda region while 93.3% (28/30) of them managed to at least attend one or more than one level of education based on Uganda's ministry of education curriculum and 6.7% (2/30) did not manage to attend school at any level. The highest percentage of participants were

able to read and understand a whole sentence in English 56.7% (17/30), 20.0% (6/30) were able to read half sentence and the 23.3% (7/30) were unable to read and understand sentences in English.

### Pregnancy and Antenatal care

**Table 2 indicating the mother's experience in their pregnancy, antenatal and childbirth**

| Variable items                    | Frequency | Percentage |
|-----------------------------------|-----------|------------|
| Were delivery occurred?           | 2         | 6.7        |
| Husband's home                    |           |            |
| Parent's home                     | 1         | 3.3        |
| Someone else's home               | 1         | 3.3        |
| Traditional birth attendant       | 1         | 3.3        |
| Hospital                          | 25        | 83.3       |
| Total                             | 30        | 100        |
| Who attended delivery?            | 21        | 70.0       |
| Midwife                           |           |            |
| Doctor                            | 3         | 10.0       |
| Traditional birth attendant       | 2         | 6.7        |
| Others                            | 4         | 13.3       |
| Total                             | 30        | 100        |
| What was used to cut baby's cord? | 20        | 66.7       |
| Razor blade                       |           |            |
| Household knife                   | 2         | 6.7        |
| Scissors                          | 7         | 23.3       |
| Others                            | 1         | 3.3        |
| Total                             | 30        | 100        |
| How instruments used sterilized?  | 13        | 43.3       |
| Already                           |           |            |
| Alcohol                           | 2         | 6.7        |
| Heated                            | 3         | 10.0       |
| Washed                            | 3         | 10.0       |
| Machine                           | 8         | 26.7       |
| Others                            | 1         | 3.3        |
| Total                             | 30        | 100        |

Table 2 indicates that the highest number of mothers delivered from the hospital 83.3 % ( 25/30), only one mother reports to have been helped by the traditional birth attendant in her delivery 3.3 % ( 1/30), and 10.0 % ( 3/30) delivered from homes 2 from their husband's home while one from the parents' home. 70.0 % ( 21/30) of the mothers were assisted by the midwives, 10.0% (3/30) were assisted by the doctors, 6.7% (2/30) were assisted by the traditional birth attendants and 13.3%(4/30) were assisted by other people in

community while delivering their current babies. Majority of mothers report that their baby's cords were cut using razorblades which were already sterilized or new from packets however others did not have knowledge on how the instruments used to cut their baby's cord were sterilized.

### Knowledge of breastfeeding mothers on Hygiene of their neonates

**Table 3 shows the findings on questions asked to breastfeeding mothers towards the hygiene of their neonates.**

| Variable item  | Frequency | Percentage |
|--|-----------|------------|
| What was put on cord immediately after delivery?           | 2         | 6.7        |
| Alcohol  |           |            |
| Baby oil   | 24        | 80.0       |
| Cow dung   | 1         | 3.3        |
| Herbal remedies  | 1         | 3.3        |
| Others   | 2         | 6.7        |
| Total  | 30        | 100        |
| Drinking water should be kept in?                          | 8         | 26.7       |
| Any container  |           |            |
| Clean covered container                                    | 19        | 63.3       |
| Others   | 3         | 10.0       |
| Total  | 30        | 100        |
| Young babies sleep in?                                     | 6         | 20.0       |
| Clean and dry bed sheets                                   |           |            |
| Clean, dry and ironed bed sheets                           | 22        | 73.3       |
| Any bed sheet  | 2         | 6.7        |
| Total  | 30        | 100        |
| How often do baby's bed sheets washed?                     | 4         | 13.3       |
| The bed sheets do not need washing                         |           |            |
| The bed sheets are long term ones, they don't need washing | 3         | 10.0       |
| I wash the bed sheet whenever I see them dirty             | 11        | 36.7       |
| I wash bed sheets every day                                | 9         | 30.0       |
| Others   | 3         | 10.0       |
| Total  | 30        | 100        |
| How do you keep toilet?                                    | 15        | 50.0       |
| Clean  |           |            |
| Covered with a lid   | 5         | 16.7       |
| Has water for cleaning                                     | 5         | 16.7       |
| Has brush for cleaning                                     | 4         | 13.3       |
| Not applicable   | 1         | 3.3        |
| Total  | 30        | 100        |
| How often do baby's utensils washed?                       | 6         | 20.0       |
| After every giving a meal                                  |           |            |
| Twice a day  | 12        | 40         |
| Per day  | 5         | 16.7       |
| It depends   | 2         | 6.7        |
| I don't  | 5         | 16.7       |
| Total  | 30        | 100        |
| How often do you change diapers?                           | 8         | 26.7       |
| Once a day   |           |            |
| When full  | 5         | 16.7       |
| I clean and put back                                       | 2         | 6.7        |
| I don't use diapers  | 10        | 33.3       |
| When necessary   | 4         | 13.3       |
| Total  | 30        | 100        |
| How does baby's cord cared of?                             | 16        | 53.3       |
| Clean the cord with salty water                            |           |            |
| Clean cord with soapy water                                | 7         | 23.3       |
| Clean cord with plain water                                | 2         | 6.7        |
| Others   | 5         | 16.7       |

|   |    |      |
|---|----|------|
| Total   | 30 | 100  |
| How mother bathes the baby?                         |    |      |
| With soap and water then dry                        | 12 | 40.0 |
| Soapy water only                                    | 10 | 33.3 |
| Plain water and dry                                 | 6  | 20.0 |
| With plain water only                               | 2  | 6.7  |
| Total   | 30 | 100  |
| How prepare breast before breastfeeding?            |    |      |
| Clean water and dry                                 | 9  | 30.0 |
| Just wipe with clean cloth                          | 17 | 56.7 |
| Just breast feed without clean                      | 1  | 3.3  |
| Don't breast feed                                   | 2  | 6.7  |
| Others  | 1  | 3.3  |
| Total   | 30 | 100  |
| How keep child from dust?                           |    |      |
| Keep in clean environment                           | 8  | 26.7 |
| Rap in clean bed sheets                             | 21 | 70.0 |
| Just leave anywhere                                 | 1  | 3.3  |
| Total   | 30 | 100  |
| Why important to dry baby after bathing?            |    |      |
| Not applicable                                      | 5  | 16.7 |
| It's not important                                  | 1  | 3.3  |
| To keep baby clean                                  | 16 | 53.3 |
| To prevent diseases and improve hygiene of the baby | 8  | 26.7 |
| Total   | 30 | 100  |

On discharge from the maternity home, mothers are always advised to take care of their baby's cords. However, some mothers do not follow what they were advised to do. The assessment of knowledge of breastfeeding mothers on the hygiene of the neonates showed that 80 % ( 24/30) applied baby oil, 6.7 % ( 2/30) used alcohol, 3.3% (1/30) applied cow dung, 3.3% (1/30) used herbal remedies in care of their baby's cords. The majority of mothers 73.3%(22/30) rap their babies in clean, dry, and ironed bed sheets, 20% rap them in just dry and clean bed sheets while the rest of the population just use any bed sheet. About 53.3 % ( 16/30) of the mothers knew that the baby's cord should be cleaned with saline water, 40.0% reported bathing their neonates with soapy water and dry, majority 56.7% (12/30) knew that the mother's breast should first be wiped before breastfeeding. Concerning the prevention of diseases in babies, 53.3% of mothers reported that it is important to dry the baby after bathing though they did not give a clear reason as to why, while 26.7% of the participants explained why their babies should be dried after bathing as this keeps the baby clean and prevents infections. The majority of mothers 33.3 % (10/30) do not use diapers and those who use diapers always change them whenever they are full.

## Discussion

### Knowledge of breastfeeding mothers on the hygiene of their neonates

The results showed that the maternal knowledge and practice of hygiene of their neonates was influenced by the individual characteristics of the mother such as age, level of education, and type of employment. This is because age and level of education go with the experience of childbearing and the ability to access information respectively. However, all this can be affected by the mother's type of employment which always limits time for mothers to do their best. Similar findings from the study conducted in Kenyatta Hospital suggested that primiparous had significantly poorer knowledge compared to multiparous and poor knowledge was also associated with those who had a lower than tertiary level of education (Lucia Amolo, 2017). Young and less educated mothers were found to have less knowledge of the hygiene of neonates. This is because young people are always reluctant to seek health services for their sexual and reproductive health needs. These findings are like those of a study done in Uganda which revealed that the coverage of ANC visits among adolescent mothers is relatively lower (Rahman, 2022).

## Conclusion

Health workers give enough information on pamper use, cord, and skin care during post-natal and immunization clinics. Most mothers knew proper care of cords and skin plus pamper however their practice was affected by some

barriers like low socioeconomic status and overwhelming responsibilities.

### Recommendations

Health workers need to bridge the gap between the community and health workers to encourage mothers to seek healthcare freely without fear.

The Ministry of Health needs to evaluate the effectiveness of hygiene support provided by the health workers at health facilities to determine whether proper hygiene education needs strengthening.

There is a need to sensitize and guide the community on proper hygiene practices towards maternal and child health.

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### Abbreviations

AIDS-Acquired Immune Deficiency Syndrome  
ANC-Antenatal Care  
HIV-Human Immune Deficiency Virus  
NMR-Neonatal Mortality Rate  
SPSS-Statistical Package of Social Sciences  
TBA-Traditional Birth Attendants  
UNICEF-United Nations Children's Fund

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### Conflict of interest

There was no conflict of interest declared.

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