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***Original article***

# Knowledge and practices of exclusive breastfeeding among postnatal mothers at Lira regional referral hospital, Lira city: A cross-sectional study.

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## ABSTRACT

### Background

In sub-Saharan Africa, just 38% of babies are exclusively breastfed; in East Africa, 33%; while in Uganda, the percentage is even lower at 42%. Studies have revealed that the key drivers that hinder exclusive breastfeeding include a lack of adequate knowledge and education about breastfeeding benefits, cultural beliefs, and practices that discourage exclusive breastfeeding. Therefore, this study in Northern Uganda is still investigating the level of knowledge and practices of exclusive breastfeeding among postnatal mothers at Lira Regional Referral Hospital.

### Methods

The study conducted was a hospital-based cross-sectional study among 272 postnatal mothers. Data was collected using a semi-structured questionnaire and analyzed with SPSS version 25. Univariate and bivariate analyses were conducted, with the significance level set at a p-value of less than 0.05.

### Results

A total of 272 postnatal mothers were involved in the study. Of these, 186 (68.4%) had good knowledge, and 204 (75%) had good practices. 171 (62.9%) were between 18 to 25 years old, 104 (38.2%) were housewives, 120 (44.1%) had primary Education, 240 (88.2%) were married, and 129 (47.4%) had 1 child. Factors that were found significantly associated with knowledge of exclusive breastfeeding at a P-value<0.05 included; age ($p<0.001$), occupation ($p<0.001$), Education level ($p<0.001$), marital status ($p=0.048$), number of children ($p=0.005$) and place of residence ($p=0.017$). Religion ($p=0.003$) and overall knowledge ($p<0.001$) were significantly associated with practices of Exclusive breastfeeding.

### Conclusion

This study found that awareness about EBF was high, with about 1 in 4 having low levels of knowledge regarding EBF. These findings highlight the importance of continued education and support to further improve knowledge and practices related to exclusive breastfeeding.

### Recommendation

There should be development of educational programs that go beyond knowledge transmission, incorporating skill building and addressing common challenges faced by mothers.

***Keywords:*** *knowledge, practices, exclusive breastfeeding, Lira Regional Referral Hospital, Lira City.*
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## Background of the study

EBF) is defined as giving only breast milk to the infant with no other liquids or solids, including water, except for oral rehydration solution or syrups of vitamins, minerals, or medicines for their first six months of life (Dukuzumuremyi, Acheampong, Abesig, & Luo, 2020). Zhang, Zhu, Zhang, and Wan (2018) found that Exclusive breastfeeding is recommended for the first six months by the World Health Organization (WHO) even though the initiation rate is 75%, with 33% being exclusively breastfed at three months and 13% at six months according to the data published by the US Department of Health and Human Services.

The composition of breast milk is approximately 87-88% water, 3.8% fats, 7% carbohydrates (mainly lactose), 1% proteins (casein and whey), minerals (sodium, calcium, magnesium, and phosphorous), most vitamins (apart from vitamin K and vitamin D), iron and zinc (low concentration, high bioavailability and absorption), and bioactive substances (white blood cells, cytokines, growth factors, hormones, and antimicrobial substances). These differ according to the food of the mother, the physiology of the

mammary glands, and numerous other environmental factors. (Kim & Yi, 2020).

Exclusive breastfeeding helps in growth and development, decreases the risk of being obese, develops the nervous system, increases intelligence quotients, and protects the infant from respiratory infections and diarrheal diseases. For the mother, it helps the uterus contract to return to its normal size, creates a strong bond between a mother and a baby, and also lowers the risk of ovarian and breast cancer and spacing pregnancies (Muluneh, 2023).

The practice of Exclusive breastfeeding has remained far low, less than the WHO recommended level in developing countries since it is associated with high suboptimal infant feeding practices and exclusive breastfeeding is also estimated to improve the quality of lives of millions of children and prevent over 800, 000 under-five deaths annually if scaled up to near universal level (Senghore, Omotosho, Ceesay, & Williams, 2018). Consequently, this suggests that strict guidelines from WHO on exclusive breastfeeding could be beneficial in preventing childhood illnesses worldwide.

However, adequate knowledge about exclusive breastfeeding is said to be a fundamental tool that can direct the course of Exclusive breastfeeding practice among mothers and only 64.6% have adequate knowledge on the importance of Exclusive breastfeeding for the first six months, and showed that the knowledge level of participants was 35.7% (Nukpezah, Nuvor, & Ninnoni, 2018).

Dukuzumuremyi et al. (2020) found that globally, only 38% of babies are exclusively breastfed; to raise the percentage of EBF for babies under six months old, the World Health Assembly (WHA) requires that this number rise to at least 50% between 2012 and 2025. Low- and middle-income nations, where only 37% of infants under six months old are exclusively breastfed, have longer exclusive breastfeeding periods than high-income nations like the United States (19%), the United Kingdom 1%), and Australia 15%.

In sub-Saharan Africa, the average prevalence is 33% of infants who are exclusively breastfed. Exclusive breastfeeding practices have remained suboptimal in many low to middle-income countries (Ejie et al., 2021). As a result, this has led to high infant morbidities and mortality in the whole region and worldwide.

In East Africa, only 53.5% of newborns receive exclusive breastfeeding, falling short of the WHO recommendation that a baby should have exclusive breastfeeding for a maximum of six months, and 20.1% of the women have good practice of exclusive breastfeeding (Rotich, 2023).

Even with the increased awareness of the advantages of exclusive breastfeeding brought about by several governmental and non-governmental groups, the practice is still less common than at the internationally advised level, particularly in underdeveloped nations (Ihudiebube-Splendor et al., 2019).

In Uganda, just 42% of infants are exclusively breastfed, even though 98% of them begin breastfeeding at birth. As a result, malnutrition is common, and life expectancy is short (Sewannonda, Medel-Herrero, Nankabirwa, & Flaherman, 2022). Omute and Kirungi (2022) found that the occurrence of exclusive breastfeeding in Northern Uganda, the region that includes Lira City, is still low, despite initiatives by the Ugandan government and other stakeholders to promote the practice. Early discontinuation, mixed feeding, employment, and other socio-demographic characteristics are, therefore, the key determinants influencing exclusive breastfeeding (Wataka, Tumukunde, Kawala, Nekaka, & Nteziyaremye, 2021).

To enhance exclusive breastfeeding in Uganda, the Ministry of Health has promoted the establishment of community health organizations such as nutrition groups, village health teams, and mother care groups. These organizations will receive training to enable them to support the promotion of health-seeking behaviors, including exclusive breastfeeding. Few mothers, even multiparous women who are supposed to know more than primigravidae mothers, do not adhere to exclusive breastfeeding practices. This study will highlight the crucial need to assess postnatal mothers' level of knowledge and practices of exclusive breastfeeding at Lira Regional Referral Hospital in Lira City, and by understanding the current state of exclusive breastfeeding practices, we shall develop effective interventions to improve maternal and child health outcomes in Lira City.

## Methodology

### Study design

The study was a hospital-based cross-sectional study design involving the quantitative method of data collection. This involved administering a structured questionnaire to postnatal mothers. It was a cross-sectional study where the participants were selected based on variables of interest. This allowed the researcher to use numerous characteristics at once, and it provided information about the current occurrences within the population within a short time.

### Study site and setting

### Study site

The study was conducted at Lira Regional Referral Hospital located in Lira City West division in Lira City, Northern Uganda. It caters to populations of the Lango subregion encompassing the districts of Lira, Alebtong, Amolatar, Dokolo, Otuke, Apac, Oyam, Kole, and Kwania. Lira City is located in the Mid Northern Uganda approximately 337 km from Kampala, the capital City of Uganda. It shares borders with Pader in the North, Dokolo in the South, Alebtong in the East, and Kole in the West, and covers a total area of 1,368.9 km2. It is mainly occupied by the Lango people who are the natives, and these are mainly farmers and business people. It has

several schools, colleges, institutions, and universities. It also has health centers and Lira Regional Referral Hospital, where the study was conducted.

## Study setting

The study was conducted at Lira Regional Referral Hospital, located in Lira City West Division in Lira City, Northern Uganda. It is a public hospital funded by the Government of Uganda, and all care is free. Lira Regional Referral Hospital is located along Police Road in the central business district of the city of Lira, approximately 101 kilometers (63 mi), southeast of Gulu Regional Referral Hospital in Gulu City.

It offers a multiple of health services including postnatal care services. This study was conducted in postnatal ward which has a daily attendance of about 30 postnatal mothers receiving care throughout the day from Monday to Monday.

## Study population

### Target population

Postnatal mothers who were receiving care in Lira City.

### Accessible population

Postnatal mothers who were receiving care at Lira Regional Referral Hospital during the study period.

## Eligibility criteria

### Inclusion criteria

All postnatal mothers who were receiving care at Lira Regional Referral Hospital

### Exclusion criteria

Postnatal mothers who were very ill and needed emergency treatment.

Postnatal mothers who were mentally sick since they could not provide valid data.

## Sample size

The sample size was calculated using a formula by Keish and Leslie (1965)

$n=z2pq/e2$

Where n=sample size in this study

Z = value corresponding to a 95% level of significance, which is 1.96

P= Practice of EBF in Hoima = 20.1% (Rotich, 2023).

q is a constant= 1-p(1-0.201=0.779)

e is the margin of error (5%) = 0.05;

$n=(1.96)2(0.201)(0.779)/(0.05)2$

n =247 postnatal mothers.

Non response rate of 10%= 10% of 247=24.7~ 25

n = 247+25 = 272 postnatal mothers.

## Sampling procedure

A consecutive sampling technique was used and this involved conducting the study with all those who met the inclusion criteria and were conveniently available. It was a fast sampling technique, cost-effectiveness, and the sample was selected with ease when the study participants were available.

## Variables

### Dependent variables

Knowledge of exclusive breastfeeding.

Practices of exclusive breastfeeding.

### Independent variables

These included maternal age, occupation, and religion, level of education, marital status, and number of children, tribe and place of residence.

## Data collection

### Data collection methods

A pre-tested interviewer-administered structured questionnaire was used for data collection on socio-demographic characteristics, and on knowledge and practices of EBF and it had 27 questions. The questionnaire was developed by the researcher after requesting and adapting questions from a study in a similar context in order not to miss out on any information (Rotich, 2023). The survey method was used to collect primary quantitative data concerning postnatal mothers receiving care at Lira Regional Referral Hospital regarding their knowledge and practices of EBF.

Eligible participants were recruited in the study using a consecutive sampling method. They were given information about the study, consented to participate in the study and data collection commenced. On a daily basis postnatal mothers were recruited depending on their availability at the health facility until the sample size was attained.

### Data collection instruments

Data was collected using a pre-tested interviewer-administered structured questionnaire. The questionnaire had three sections. Section one included Socio-demographic data such as age, education level, parity, and marital status. Section two was determining the level of knowledge among postnatal mothers and then section three included practices associated with exclusive breastfeeding. The questionnaires asked about all those parameters and responses were grouped and analyzed to conclude the findings.

### Data collection procedure

A permission letter was obtained from Lira University, Faculty of Nursing and Midwifery, Department of

Midwifery, to allow data to be collected from the study site. Permission from the Hospital Director of Lira Regional Referral Hospital was sought, and then the postnatal mothers who were eligible for the study were given adequate information about the study and asked to sign consent forms if they agreed to take part. They were then given questionnaires that consisted of close-ended, structured questions. Those who would be illiterate or unable to write were asked by the researcher as their responses were filled in the questionnaires. The questionnaire lasted for about 20 minutes, they were crosschecked at the end of data collection to ensure completeness. Questionnaires were coded and kept under lock and key by the researcher.

### Data analysis plan

Data collected was checked for completeness, data entry and cleaning was done computerized, tabulated and analyzed using SPSS version 25. Both Univalent and bivariate analysis was done to determine the level of knowledge and practices of exclusive breastfeeding among postnatal mothers. Categorical variables were analyzed and presented as mean, mode, and frequency then computed at confidence interval of 95%. Logistic regression was used to identify the association between independent variables and outcome variables.

### Quality control

### Validity

The researcher used face validity to assess the validity of the questionnaire. To ensure face validity, an expert on the research subject and the research supervisor reviewed the questionnaire to check whether the items in the questionnaire would be a valid measure of the concept that was being measured as the level of knowledge and practices of EBF among the study participants.

### Reliability

A pretested interviewer administered structured questionnaire was used and it was pretested on 20 postnatal mothers who were receiving care at Lira University Teaching Hospital, Lira City. Cronbach's alpha was used and any discrepancies in the tool were identified and corrected to ensure that the collected data would be relevant.

### Ethical considerations

### Approvals

The researcher got approval from the department of Midwifery, Lira University, Lira University Research Ethics Committee on 24/04/2024 and a letter which allowed the researcher carry out data collection was obtained.

Administrative clearance was sought from the Hospital Director of Lira Regional Referral Hospital, where the study was conducted.

### Informed consent

Participants were given information about the purpose of the study and then written consent form before receiving questionnaires and given a chance to participate in the study at willing basing on the way they interpreted the study. Participants were informed that they would withdraw from the study anytime and it was not punishable.

### Privacy

The researcher secured privacy by securing the data storage by putting restricted access to data storage systems as entered data was kept on a personal computer with a password and even a folder with a password. An interviewer-administered questionnaire was also used one-on-one with the mother in a quiet place, and the questionnaires were kept under lock and key by the researcher.

### Confidentiality

Questionnaires did not have participant's direct identifiers such as name and the data collected was kept safely in the researcher's personal computer with a password. Identifiers used were a place of residence, parity, and age group which would not easily identify a mother directly.

## Results

### Response rate

A total of 272 study participants were recruited, and this was a 100% response rate.

### Socio-demographic characteristics of study participants (N=272)

Majority 171 (62.9%) of the postnatal mothers were between 18 to 25 years, 104 (38.2%) were housewives, 113 (41.5%) Anglicans, 120 (44.1%) with primary Education, 240 (88.2%) married, 129 (47.4%) had 1 child and 123 (45.2%) had 2 to 3 children, 229 (84.2%) were Lango people and 235 (86.4%) from urban places. However, 30 (11.0%) were civil servants, 64 (23.5%) were peasants, 95 (34.9%) were Catholics, 13 (4.8%) were Muslims, 93 (34.2%) and 59 (21.7%) had secondary and tertiary Education respectively, 32 (11.8%) were single, 21 (7.7%) were Acholi and 22 (8.1%) were from other tribes like the Bantu ethnic group and 37 (13.6%) were from the village.

**Table 1: shows the socio-demographic characteristics of the study participants (N=272)**

| Variable | Frequency | Proportion (%) |
|---|---|---|
| Age | | |
| <18 | 6 | 2.2% |
| 18-25 | 171 | 62.9% |
| 26-35 | 82 | 30.1% |
| >35 | 13 | 4.8% |
| Occupation | | |
| Peasant | 64 | 23.5% |
| Housewife | 104 | 38.2% |
| Civil servant | 30 | 11.0% |
| Others | 74 | 27.2% |
| Religion | | |
| Catholic | 95 | 34.9% |
| Anglican | 113 | 41.5% |
| Muslim | 13 | 4.8% |
| Born again | 47 | 17.3% |
| Others | 4 | 1.5% |
| Education level | | |
| Primary | 120 | 44.1% |
| Secondary | 93 | 34.2% |
| Tertiary | 59 | 21.7% |
| Marital status | | |
| Single | 32 | 11.8% |
| Married | 240 | 88.2% |
| Number of children | | |
| 1 | 129 | 47.4% |
| 2-3 | 123 | 45.2% |
| >3 | 20 | 7.4% |
| Tribe | | |
| Lango | 229 | 84.2% |
| Acholi | 21 | 7.7% |
| Others | 22 | 8.1% |
| Place of residence | | |
| Urban | 235 | 86.4% |
| Rural | 37 | 13.6% |

*Source: primary data (2024)*

## Knowledge of postnatal mothers about exclusive breastfeeding

The overall knowledge was obtained by summing up 12 questions about knowledge into a single variable, which was later computed to get the mean to code those less than the mean with poor and those with and above the mean with good knowledge. There was a total of 272 postnatal mothers. Majority of them, 186 (68.4%) had good knowledge, and 86 (31.6%) with poor knowledge.

The questions focused on the general knowledge of postnatal mothers about EBF; the importance of EBF, including the importance of breastfeeding and breast milk alone, was enough for the baby for the first six months, which showed 219 (80.5%) and 200 (73.5%), respectively. 219 (80.5%) preferred to feed the baby for the first 6 months, 206 (75.7%) knew EBF, 208 (76.5%) had heard about EBF, 180 (66.2%) said bottle feeding was dangerous for the baby, 173 (63.6%) also said that EBF prevented the baby from illnesses, 179 (65.8%) were aware that EBF protected the mother from pregnancy, 157 (57.7%) a pregnant woman would breastfeed her baby, 227 (83.5%) a baby would be fed on demand and sucking the breast by the newborn helped in milk production 256 (94.1%).

**Table 2: Showing the knowledge of postnatal mothers about Exclusive breastfeeding**

| Variable | Frequency(n) | Proportion (%) |
|---|---|---|
| Importance of breastfeeding | | |
| Yes | 219 | 80.5 |
| No | 53 | 19.5 |
| Prefer to feed the baby for the first 6 months. | | |
| Breast milk only | 219 | 80.5 |
| Breast milk with plain water | 47 | 17.3 |
| Breast milk with butter | 6 | 2.2 |
| Know Exclusive breastfeeding | | |
| Yes | 206 | 75.7 |
| No | 66 | 24.3 |
| Heard about Exclusive breastfeeding | | |
| Yes | 208 | 76.5 |
| No | 64 | 23.5 |
| Source of information about Exclusive breastfeeding | | |
| Health facility | 167 | 61.4 |
| Media | 2 | 0.7 |
| Friends | 9 | 3.3 |
| Relatives | 28 | 10.3 |
| Others | 2 | 0.7 |
| None | 64 | 23.5 |
| EBF alone is enough for infants <6 months | | |
| Yes | 200 | 73.5 |
| No | 72 | 26.5 |
| Breast milk alone can sustain the baby for 6 months. | | |
| Yes | 200 | 73.5 |
| No | 72 | 26.5 |
| Bottle feeding is dangerous for the baby. | | |
| Yes | 180 | 66.2 |
| No | 92 | 33.8 |
| EBF prevents the baby from illnesses | | |
| Yes | 173 | 63.6 |
| No | 99 | 36.4 |
| EBF protects the mother from pregnancy | | |
| Yes | 179 | 65.8 |
| No | 93 | 34.2 |
| A pregnant woman can breastfeed her baby. | | |
| Yes | 157 | 57.7 |
| No | 115 | 42.3 |
| A baby should be fed on demand. | | |
| Yes | 227 | 83.5 |
| No | 45 | 16.5 |
| Sucking the breast by the newborn helps in milk production. | | |
| Yes | 256 | 94.1 |
| No | 16 | 5.9 |
| Overall knowledge | | |
| Good | 186 | 68.4 |
| Poor | 86 | 31.6 |

*Source: primary data (2024)*

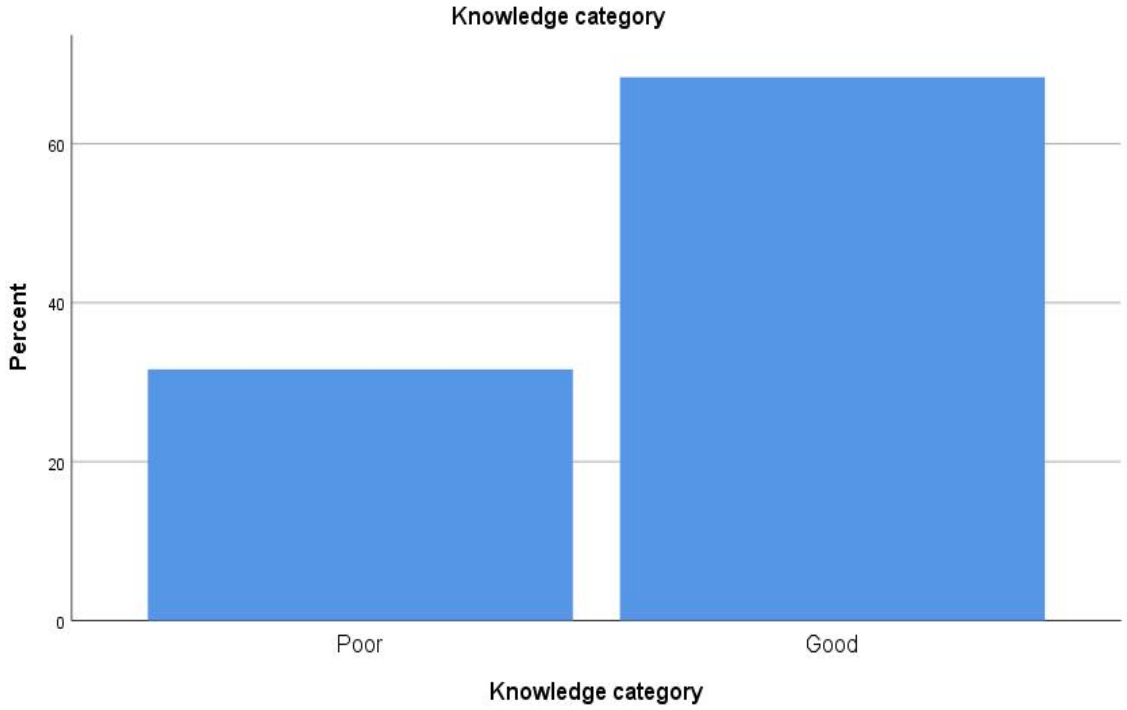


**Figure 1: showing overall knowledge of EBF**

## Practices of exclusive breastfeeding

The overall practice was done by summing up 6 questions about practices into a single variable, which was later computed to get the mean to code those less than the mean with poor and those with and above the mean with good practices.

Among the 272 postnatal mothers, the majority, 204 (75%), had good practices, whereas 68 (25%) had poor practices. 235 (86.4%) initiated breastfeeding within the first hour, 253 (93%) fed the baby immediately on colostrum, 222 (81.6%) would put the baby in a sitting position while breastfeeding, and 219 (80.5%) would introduce other foods to the baby at 6 and above months. 187 (68.8%) knew it was time to breastfeed the baby when it would cry, and 188 (69.1%) breastfed the baby every hour.

**Table 3: Practices associated with exclusive breastfeeding among postnatal mothers**

| Variable | Frequency (n) | Proportion (%) |
|---|---|---|
| When did you initiate breastfeeding? | | |
| <1 | 235 | 86.4 |
| 1-2 | 31 | 11.4 |
| After a day | 6 | 2.2 |
| How often do you breastfeed the baby? | | |
| 1 hourly | 62 | 22.8 |
| 2 hourly | 20 | 7.4 |
| 4 hourly | 2 | 0.7 |
| Anytime the baby needs | 188 | 69.1 |
| What do you do with the first milk or colostrum? | | |
| Discard | 19 | 7.0 |
| Feed immediately | 253 | 93.0 |
| When do you know it is time to breastfeed the baby? | | |
| When the baby cries | 187 | 68.8 |
| When the baby wakes up from sleep | 42 | 15.4 |
| After a specific time from a previous meal | 41 | 15.1 |
| Others | 2 | 0.7 |
| When will you start introducing other foods to the baby's diet? | | |
| 3-5 | 53 | 19.5 |
| >=6 | 219 | 80.5 |
| Which position do you put the baby in while breastfeeding? | | |
| Sitting | 222 | 81.6 |
| Lying | 50 | 18.4 |
| Overall practices | | |
| Good | 204 | 75 |
| Poor | 68 | 25 |

*Source: primary data (2024)*

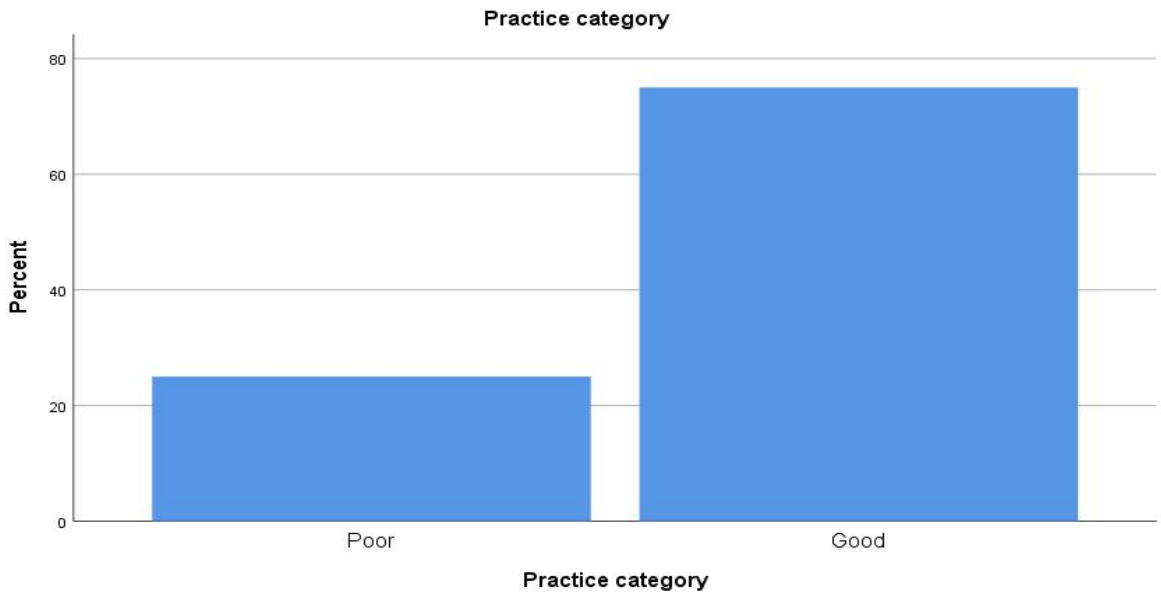


**Figure 2: showing overall practices of EBF**

### Relationship between demographic factors with Knowledge of Exclusive breastfeeding

In bivariate analysis, p<0.05; age (p<0.001), occupation (p<0.001), Education level (p<0.001), marital status (p=0.048), number of children (p=0.005) and place of residence (p=0.017) were significantly associated with knowledge of Exclusive breastfeeding. However, Religion (p=0.090) and tribe (p=0.135) were not significant.

**Table 4: showing the relationship between demographic factors with Knowledge of Exclusive breastfeeding**

| Variable | Knowledge of exclusive breastfeeding | | $X^2$(df) | P value |
|---|---|---|---|---|
| | Poor n (%) | Good n (%) | | |
| Age (years) | | | | |
| <18 | 2 (33.3) | 4 (66.7) | 23.200(3) | <0.001* |
| 18-25 | 71 (41.5) | 100 (58.5) | | |
| 26-35 | 13 (15.9) | 69 (84.1) | | |
| >35 | 0 (0.0) | 13 (100) | | |
| Occupation | | | | |
| Peasant | 30 (46.9) | 34 (53.1) | 37.999(3) | <0.001* |
| Housewife | 46 (44.2) | 58 (55.8) | | |
| Civil servant | 2 (6.7) | 28 (93.3) | | |
| Others | 8 (10.8) | 66 (89.2) | | |
| Religion | | | | |
| Catholic | 33 (34.7) | 62 (65.3) | 8.050(4) | 0.090 |
| Anglican | 41 (36.3) | 72 (63.7) | | |
| Muslim | 4 (30.8) | 9 (69.2) | | |
| Born again | 8 (17.0) | 39 (83.0) | | |
| Others | 0 (0.0) | 4 (100) | | |
| Education level | | | | |
| Primary | 72 (60.0) | 48 (40.0) | 80.271(2) | <0.001* |
| Secondary | 10 (10.8) | 83 (89.2) | | |
| Tertiary | 4 (6.8) | 55 (93.2) | | |
| Marital status | | | | |
| Single | 15 (46.9) | 17 (53.1) | 3.905(1) | 0.048* |
| Married | 71 (29.6) | 169 (70.4) | | |
| Number of children | | | | |
| 1 | 52 (40.3) | 77 (59.7) | 10.616(2) | 0.005* |
| 2-3 | 32 (26.0) | 91 (74.0) | | |
| >3 | 2 (10.0) | 18 (90.0) | | |
| Tribe | | | | |
| Lango | 78 (34.1) | 151 (65.9) | 4.004(2) | 0.135 |
| Acholi | 4 (19.0) | 17 (81.0) | | |
| Others | 4 (18.2) | 18 (81.8) | | |
| Place of residence | | | | |
| Urban | 68 (28.9) | 167 (71.1) | 5.745(1) | 0.017* |
| Rural | 18 (48.6) | 19 (51.4) | | |

*Source: primary data (2024), $X^2$=Pearson Chi-square; df=Degrees of Freedom; *means significant variable*

### Relationship between the knowledge and demographic factors with practices of exclusive breastfeeding

Using a p-value <0.2 to be significant, occupation (p=0.122), religion (0.003), education level (0.199), and overall knowledge (p<0.001) were significantly associated

with practices of Exclusive breastfeeding. However, Marital status (p=0.385), number of children (p=0.555), tribe (p=0.328), and place of residence (p=0.919) were not significant.



**Table 5: Showing the relationship between the knowledge and demographic factors with practices of exclusive breastfeeding**

| Variable | Practice of exclusive breastfeeding | | $X^2$(df) | P value |
|---|---|---|---|---|
| | Poor n (%) | Good n (%) | | |
| Age (years) | | | | |
| <18 | 0 (0.0) | 6 (100) | 2.987(3) | 0.394 |
| 18-25 | 46 (26.9) | 125 (73.1) | | |
| 26-35 | 20 (24.4) | 62 (75.6) | | |
| >35 | 2 (15.4) | 11 (84.6) | | |
| Occupation | | | | |
| Peasant | 20 (31.3) | 44 (68.8) | 5.791(3) | 0.122* |
| Housewife | 30 (28.8) | 74 (71.2) | | |
| Civil servant | 4 (13.3) | 26 (86.7) | | |
| Others | 14 (18.9) | 60 (81.1) | | |
| Religion | | | | |
| Catholic | 32 (33.7) | 63 (66.3) | 15.994(4) | 0.003* |
| Anglican | 29 (25.7) | 84 (74.3) | | |
| Muslim | 3 (23.1) | 10 (6.9) | | |
| Born again | 2 (4.3) | 45 (95.7) | | |
| Others | 2 (50.0) | 2 (50.0) | | |
| Education level | | | | |
| Primary | 36 (30.0) | 84 (70.0) | 3.231(2) | 0.199* |
| Secondary | 18 (19.4) | 75 (80.6) | | |
| Tertiary | 14 (23.7) | 45 (76.3) | | |
| Marital status | | | | |
| Single | 6 (18.8) | 26 (81.2) | 0.756(1) | 0.385 |
| Married | 62 (25.8) | 178 (74.2) | | |
| Number of children | | | | |
| 1 | 36 (27.9) | 93 (72.1) | 1.176(2) | 0.555 |
| 2-3 | 28 (22.8) | 95 (77.2) | | |
| >3 | 4 (20.0) | 16 (80.0) | | |
| Tribe | | | | |
| Lango | 54 (23.6) | 175 (76.4) | 2.227(2) | 0.328 |
| Acholi | 8 (38.1) | 13 (61.9) | | |
| Others | 6 (27.3) | 16 (72.7) | | |
| Place of residence | | | | |
| Urban | 59 (25.1) | 176 (74.9) | 0.010(1) | 0.919 |
| Rural | 9 (24.3) | 28 (75.7) | | |
| Overall knowledge | | | | |
| Good | 29 (15.6) | 157 (84.4) | 27.774(1) | <0.001* |
| Poor | 39 (45.3) | 47 (54.7) | | |

*Source: primary data (2024), $X^2$=Pearson Chi-square; df=Degrees of Freedom; *means significant variable*

## Multivariate analysis of knowledge and demographics with practices of Exclusive breastfeeding.

Using p<0.2, Occupation (p=0.182), Religion (p=0.071), Education level (p=0.039), and knowledge level (p<0.001) were significantly associated with practices of Exclusive breastfeeding.

**Table 6: showing multivariate analysis of knowledge and demographics with practices of Exclusive breastfeeding**

| Variable | Odds ratio at 80%CI | P value |
|---|---|---|
| Occupation | 0.502 (0.259-0.973) | 0.182* |
| Religion | 7.345 (1.783-30.263) | 0.071* |
| Education level | 3.130 (1.539-6.364) | 0.039* |
| Knowledge level | 0.182 (0.108-0.307) | <0.001* |

*Source: primary data (2024), CI=confidence interval; * means significant variable.*



## Discussion

### The current level of Exclusive breastfeeding among postnatal mothers at Lira Regional Referral Hospital, Lira City

This study found that 219 (80.5%) of the postnatal mothers would introduce other foods such as porridge to the baby after six months, and 235 (86.4%) initiated breastfeeding within the first hour. This result was high, and a study conducted in Asosa town, Ethiopia, found that 76% of the mothers exclusively breastfed their babies after delivery (Kumera & Haidar, 2021). This can be attributed to the various strategies that were implemented, such as providing health education, support on the benefits of exclusive breastfeeding, lactation support services, ensuring access to proper nutrition and hydration for mothers, creating breastfeeding-friendly environments in workplaces and public spaces, healthcare provider training, and implementing policies that support breastfeeding mothers.

Similarly, the result of this study was high compared to the global average of 43%, and a study conducted in Woldia Town, Northwest Ethiopia, about the practice of exclusive breastfeeding among children aged 6–23 months found that the rate of exclusive breastfeeding was 51.3%. (Yimer et al., 2021). A study conducted about exclusive breastfeeding practices among mothers in the Mbale district of Eastern Uganda also found a low exclusive breastfeeding rate of 32.7%. (Wataka & Nteziyaremye, 2021). This can be attributed to increased health education campaigns about EBF among postnatal mothers.

Efforts to promote and support exclusive breastfeeding are crucial in improving babies' health outcomes and reducing the risk of malnutrition and infectious diseases. Therefore, by prioritizing and investing in breastfeeding promotion programs, we shall strive towards achieving higher rates of exclusive breastfeeding and improving the health and well-being of babies worldwide.

### Knowledge of Exclusive breastfeeding among postnatal mothers at Lira Regional Referral Hospital, Lira City

This study found that 186 (68.4%) of the postnatal mothers demonstrated good knowledge of EBF. This was high compared to the study done in East Africa about knowledge, attitude, and practice of EBF among mothers, which found that 49.2% of the mothers had good knowledge. (Dukuzumuremyi et al., 2020). This can be attributed to comprehensive health education and awareness campaigns on the benefits of exclusive breastfeeding for both the mother and the baby, access to accurate and up-to-date information through health care providers, community support groups, online resources, and the promotion of breastfeeding-friendly policies in health care facilities and workplaces. These initiatives aim to increase awareness, dispel myths, and provide evidence-based information to support postnatal mothers in making informed decisions about babies' feeding. Therefore, by empowering individuals with accurate information and resources, we shall promote EBF and contribute to better health outcomes for both mother and baby.

### Practices of Exclusive breastfeeding among postnatal mothers at Lira Regional Referral Hospital, Lira City

This study found that the majority of 204 (75%) of the postnatal mothers had good practices of EBF. This result was higher than that for a study conducted in Hoima, Uganda, about Practices of Exclusive Breastfeeding among Lactating Mothers Attending Care at Hoima Regional Referral Hospital, which found that only 20.1% of the women had good practice of exclusive breastfeeding. (Rotich, 2023). This can be attributed to a combination of factors like adequate health education, support of postnatal mothers on the importance of exclusive breastfeeding, access to skilled lactation support services, encouragement from healthcare providers and community members, the establishment of breastfeeding-friendly environments in healthcare facilities, and workplaces, implementation of supportive policies that promote and protect breastfeeding rights.

This will encourage and enable more postnatal mothers to practice EBF, hence leading to improved health outcomes for both the mother and the baby. This result is below the WHO recommendation because of limited access to breastfeeding support, misinformation about breastfeeding, aggressive marketing of breast milk substitutes, and societal barriers that discourage breastfeeding in public or workplaces. Therefore, efforts to improve EBF should focus on addressing these barriers and providing a supportive environment for breastfeeding mothers.

## Selection bias
The study participants were not representative of the entire population of interest since the study was done among mothers who were receiving postnatal care from a government-aid health facility, and this was dealt with by selecting mothers from different geographical locations.

## Conclusion
This study examined the knowledge and practices of Exclusive breastfeeding among postnatal mothers. While the findings were 186 (68.4%) with good knowledge and 204 (75%) of the postnatal mothers with good practices; a gap exists between knowledge and practices. This highlights the need for interventions that address not only knowledge but also various factors that influence breastfeeding behavior.

## Recommendations
There should be development of educational programs that go beyond knowledge transmission, incorporating skill building and addressing common challenges faced by mothers and implementation of interventions that address social support networks and access to lactation consultants.

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## List of abbreviations
**CDC** : Centers for disease control and prevention
**EBF** : Exclusive breastfeeding
**MOH** : Ministry of Health
**SPSS** : Statistical product and service solutions
**UNICEF** : United Nations international children's emergency fund
**WHA** : World Health Assembly
**WHO** : World Health Organisation

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There is no conflict of interest

## Author Biography
Necton Kibira Masereka is a student Midwife from Lira University.
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## Authors` contribution
Necton Kibira Masereka, the principal investigator.
Raymond Tumwesigye, the study supervisor.

## Data availability
The datasets used and analyzed during the current study are available from the author upon reasonable request.

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