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Knowledge, Attitude, And Practice Towards Exclusive Breastfeeding Among Postpartum Women at Gatunda District Hospital, Rwanda

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Abstract

Background: Inadequate infant nutrition is a leading contributor to childhood stunting and mortality, particularly in the first six months of life. The World Health Assembly aims to achieve at least 90% exclusive breastfeeding (EBF) among infants aged 0–6 months by 2025, recognizing EBF as crucial for child survival. Despite this, EBF rates remain suboptimal in low- and middle-income countries. In Rwanda, the 2019–20 Demographic and Health Survey reported a 16.2% stunting rate among infants under six months, highlighting ongoing nutritional challenges. Limited evidence exists on knowledge, attitudes, and practices (KAP) regarding EBF among rural mothers.

Methods: An institution-based cross-sectional study was conducted among 223 postpartum women attending maternal and child health services at Gatunda District Hospital, Nyagatare District. Participants were selected using systematic sampling. Data were collected via a pretested structured questionnaire and analyzed using SPSS version 26. Descriptive statistics summarized participant characteristics and KAP levels, while bivariate and multivariable logistic regression identified factors associated with EBF practice ($p < 0.05$).

Results: Among participants, 63.7% had high knowledge of EBF, 62.3% demonstrated positive attitudes, and 58.7% practiced exclusive breastfeeding. Good EBF practice was significantly associated with higher maternal education (AOR = 2.34; 95% CI: 1.10–4.95), positive attitudes (AOR = 3.12; 95% CI: 1.52–6.39), and high knowledge levels (AOR = 2.87; 95% CI: 1.39–5.93).

Conclusion: While knowledge and attitudes were generally adequate, EBF practice remains below national targets. Strengthened health education, counseling, and community awareness initiatives are essential to improve adherence in rural Rwanda.

Keywords: Knowledge, Attitude, Practice, Exclusive breastfeeding

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1.Introduction

Exclusive breastfeeding (EBF) refers to providing an infant solely with human milk for the first six months of life, excluding water, juice, non-human milk, or solid foods, except for medically necessary supplements (Tadele, 2016). Maintaining EBF during this critical period is vital for both maternal and child health. Infants who are not exclusively breastfed face higher risks of gastrointestinal infections, malnutrition, and increased morbidity and mortality, especially in low-resource settings (Luo, 2021). For mothers, EBF promotes postpartum recovery, strengthens the mother-child bond, and reduces the risk of postpartum depression, breast and ovarian cancers, cardiovascular diseases, and type 2 diabetes, potentially preventing up to 20,000 maternal deaths from breast cancer annually (Quiera, 2020; Dukuzumuremyi, 2020).

Maternal and infant health factors influence breastfeeding outcomes. Delayed initiation and inadequate maternal knowledge can impair lactation by reducing prolactin production, lowering milk supply, and contributing to infant illness and mortality (Shewasinad, 2017; Dukuzumuremyi, 2020). Global initiatives, such as the International Labour Organization's Convention C183 and WHO's Breastfeeding Counselling and Training (BCT) programs, provide maternity leave, workplace support, and community guidance to encourage EBF. Nevertheless, adherence remains below recommended levels (Neves et al., 2021; Alamirew et al., 2017).

Evidence indicates a gap between awareness and practice. In developed countries, while 64.6% of mothers knew about EBF and 71% understood its six-month duration, only 33.3% practiced it correctly (Cascone, 2019). Similar trends exist in the UAE, where maternal education and employment status influenced EBF practices (Isam et al., 2018). In Rwanda, studies at Masaka District Hospital and nationwide surveys show that although mothers possess knowledge and positive attitudes toward EBF, actual practice often falls short due to cultural norms, work obligations, and misconceptions about milk adequacy (Claude & Prince, 2021; Mukamana et al., 2019; Nkurunziza et al., 2021).

Rwanda has implemented policies and programs to promote EBF, including the National Health Sector Strategic Plan, health facility-based breastfeeding support, and 12-week paid maternity leave, yet challenges such as work demands, inadequate community support, and misinformation hinder adherence (Ministry of Health Rwanda, 2018; WHO & UNICEF, 2020; Rwanda Labour Law, 2019). Addressing these barriers through targeted education, male partner engagement, and breastfeeding-friendly workplaces remains essential. This study aims to explore knowledge, attitudes, and practices regarding EBF among postpartum women at Gatunda District Hospital to inform effective interventions, improve maternal and child health outcomes, and contribute to Rwanda's national nutrition objectives

1.1 Statement of the Problem

Exclusive breastfeeding (EBF) is recognized globally as a key strategy for improving infant survival, growth, and immune development (WHO, 2021). In Rwanda, the government has introduced several supportive measures, including the National Health Sector Strategic Plan, which prioritizes maternal and child nutrition, and the Rwanda Labour Law, providing mothers with 12 weeks of paid maternity leave to facilitate early breastfeeding (Ministry of Health Rwanda, 2018; WHO & UNICEF, 2020; Rwanda Labour Law, 2019). Despite these initiatives, adherence to EBF remains suboptimal. National data indicate that although 87% of mother's initiate EBF, many introduce other foods or liquids before six months due to cultural beliefs, maternal workload,

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and insufficient family support (NISR, 2020). Misconceptions regarding milk adequacy and limited counseling from healthcare provider's further compromise adherence (Nkurunziza et al., 2021; Mukamana et al., 2019). Studies from neighboring countries highlight additional barriers, including workplace constraints and socio-economic challenges (Kakuru et al., 2020; Kebede et al., 2021). However, evidence on knowledge, attitudes, and practices (KAP) regarding EBF in rural healthcare settings like Gatunda District Hospital is limited. This study seeks to fill this gap by assessing the KAP of postpartum women on EBF, evaluating the effectiveness of existing policies at the local level, and identifying context-specific barriers. The findings will inform interventions to enhance breastfeeding support, improve maternal and child health outcomes, and strengthen policy implementation in rural communities.

1.2 Purpose

The purpose of this paper is to examine the levels of knowledge, attitudes, and practices related to exclusive breastfeeding among mothers with infants aged 0–6 months who seek postpartum care services at Gatunda District Hospital in Rwanda.

1.3 Objectives

- i. To evaluate the mothers' level of knowledge regarding exclusive breastfeeding for infants aged 0–6 months attending postpartum services at Gatunda District Hospital, Rwanda.
- ii. To explore the attitudes held by these mothers toward exclusive breastfeeding.
- iii. To analyze the actual exclusive breastfeeding practices among mothers of children aged 0–6 months receiving postpartum care at Gatunda District Hospital.

2.Literature Review

2.1 Empirical Literature

2.1.1 Knowledge of Mothers Toward Exclusive Breastfeeding

Recent research demonstrates that maternal knowledge of exclusive breastfeeding (EBF) has improved globally. A study in Abu Dhabi, United Arab Emirates, assessed breastfeeding knowledge, attitudes, and practices among women attending primary healthcare clinics. Findings indicated that 51.2% of mothers had good knowledge of EBF, 43.3% had fair knowledge, and only 5.5% had poor knowledge. The majority (81.2%) practiced breastfeeding, and common information sources included family (66.5%), health professionals (58.5%), nurses/midwives (50.1%), and the internet (40.7%) (Isam et al., 2018). In Ethiopia, a cross-sectional study in Bedelle Town revealed that 87.3% of lactating mothers were knowledgeable about EBF, whereas 12.7% lacked awareness. Despite this knowledge, 5.45% introduced complementary feeding before four months due to perceived insufficient milk (4.55%) or work-related challenges (62.73%) (Wolde, Tessema, & Ejeta, 2014). Similarly, research in Dabat Health Center, Northwest Ethiopia, found that 60.9% of mothers recognized EBF's role in preventing diarrheal and respiratory diseases, while 61.5% acknowledged that infants under six months should receive only breast milk. However, 29.4% believed that water or sugar should accompany breast milk, and 1.8% preferred formula feeding (Alamirew et al., 2017).

A study in Techiman, Ghana, showed that 78.26% of mothers correctly identified six months as the recommended duration for EBF, while 10.43% thought it should last longer and 11.3% shorter.

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Healthcare providers were the primary source of this information (90.4%) (Alamirew et al., 2017). A systematic review of East African mothers found that 95.9% were aware of EBF and its six-month recommendation, while 86% acknowledged early initiation within one hour and 72.5% recognized EBF's role in birth spacing (Claude & Prince, 2021). Factors influencing maternal EBF knowledge include higher education, employment, living with family members, previous breastfeeding experience, and encouragement from caregivers. Mothers with only one child or prior successful breastfeeding experience demonstrated greater awareness and understanding (Isam et al., 2018).

2.1.2 Attitudes of Mothers Toward Exclusive Breastfeeding

Positive maternal attitudes toward EBF are crucial for successful implementation. Globally, studies indicate strong recognition of EBF benefits. In Italy, 91.1% of mothers acknowledged EBF as optimal for infant nutrition, 61.9% considered it convenient for mothers, and 76.3% believed it strengthened the mother-child bond. However, only 28.8% associated EBF with postpartum weight loss, and 39.2% thought it delayed returning to work (Cascone et al., 2019). In Bedelle Town, Ethiopia, 87.3% of mothers perceived EBF as adequate for infants under six months, while 12.7% saw it as insufficient. A small proportion (1.82%) feared breastfeeding accelerated aging, and 0.91% deemed it old-fashioned (Wolde et al., 2014). In Lagos, Nigeria, 94.5% of mothers expressed support for EBF, rejecting notions that breastfeeding was inappropriate in public or incompatible with employment (Osibogun, Olufunlayo, & Oyibo, 2018). In Rwanda, Masaka District Hospital revealed that 93.7% of mothers preferred breastfeeding over artificial feeding, 92.3% recognized its contribution to mother-infant bonding, and nearly all (94.8%) considered breast milk the ideal infant food. Despite these positive attitudes, 50.5% supported early complementary feeding, 87.9% believed breastfeeding could cause breast sagging, and 45.3% felt it might alter physical appearance (Claude & Prince, 2021).

2.1.3 Practices of Exclusive Breastfeeding Among Mothers

Globally, EBF prevalence is low, with variations across regions. In Italy, 59.7% of mothers practiced exclusive breastfeeding, 17.6% supplemented with formula, and 6.2% relied entirely on formula. Around 40.9% ceased breastfeeding before six months, while 34.5% continued beyond six months (Cascone et al., 2019; Wolde et al., 2014). In Mizan Aman Town, Ethiopia, all mothers breastfed, with 59.9% initiating immediately after delivery. While 66.6% breastfed on demand and 77.4% avoided prelacteal feeds, only 26.4% adhered strictly to EBF, and 50.2% introduced cow's milk before six months (Claude & Prince, 2021). In Ghana, despite high awareness (92.4%), early cessation occurred due to discomfort, lack of support, and work pressures (Boateng, 2018). In Rwanda, historical breastfeeding practices involved nursing until at least two years. However, barriers such as fear of insufficient milk, cultural norms, maternal workload, economic hardship, and prior experiences limit EBF adherence. Factors promoting adherence include maternal awareness, confidence, and support from healthcare workers and relatives (Ahishakiye et al., 2020; Dusingizimana et al., 2021). Kigali-based studies indicate 56% of mothers exclusively breastfeed for six months, influenced by work status, use of milk alternatives, and breastfeeding plans, highlighting the need for enhanced education and support (Rutagumba, Hitayezu, & Kalimba, 2021).

Maternal employment significantly affects EBF. Self-employed mothers often practice EBF more consistently due to flexible schedules and the ability to bring infants to work, whereas formally employed mothers adjust practices to fit work hours (Boateng, 2018). Maternal age also influences EBF, with mothers aged 25–49 breastfeeding longer than younger mothers, though findings vary (Mensah et al., 2017; Mangrio et al., 2017; Eyasu, 2021). Number of children, marital status, and prior breastfeeding experience also affect adherence. Studies in South Sudan and Ethiopia indicate that mothers with fewer children are more likely to breastfeed exclusively, while marital status shows minimal impact due to support from extended families (Eyasu, 2021).

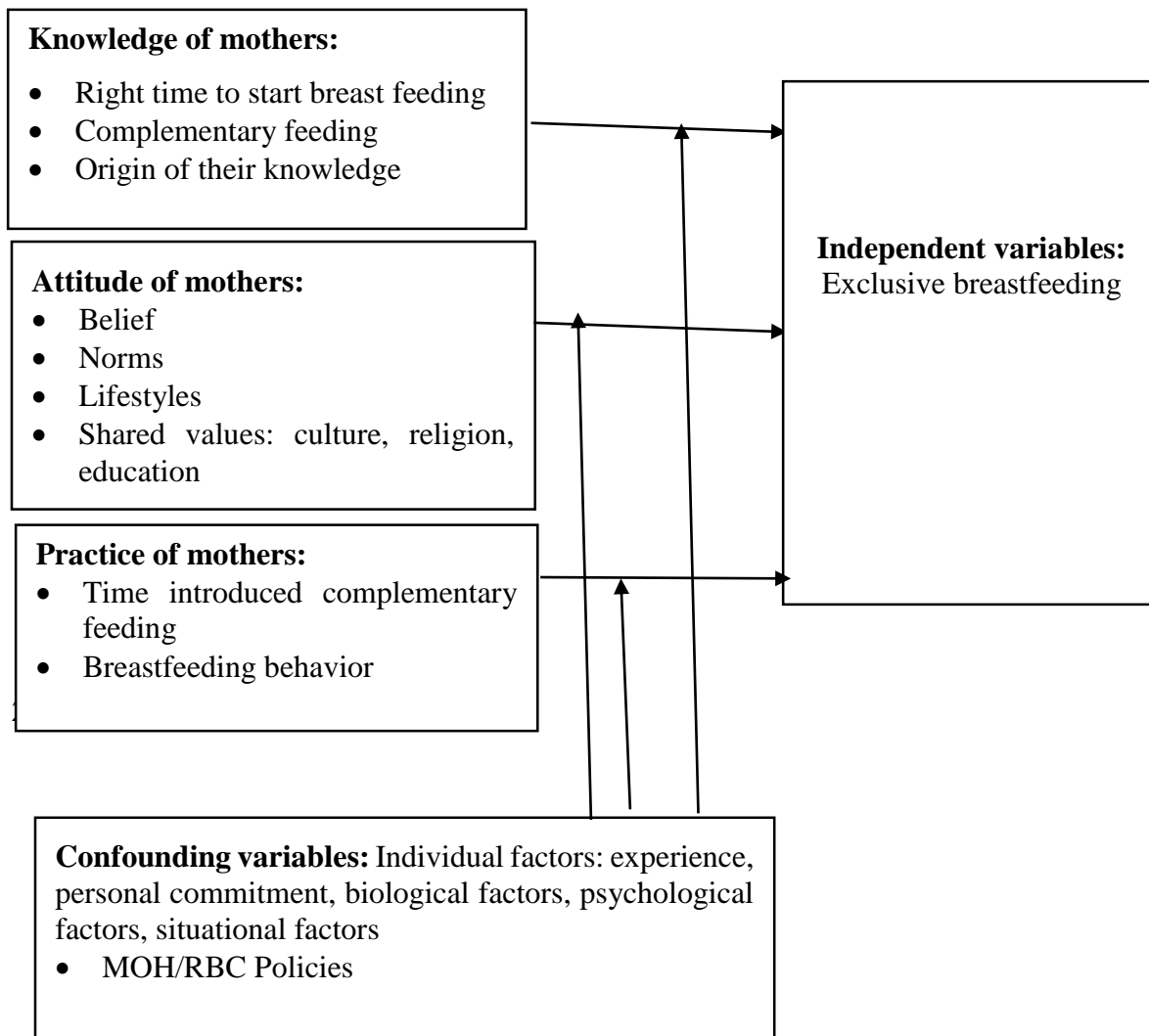
2.2 Theoretical framework

This study is supported by three key theories: The HPT, developed by American nursing theorist Nola J. Pender in the early 1980s, aims to prevent and address factors that could hinder optimal health. The TPB is a broad theory in social psychology that examines individual behaviors. It posits that behavior results from a conscious, reasoned decision and is influenced by cognitive thinking and social pressures.

The Social Cognitive Theory was selected for this study because it suggests that mothers with children aged 0-6 months will alter their attitudes toward exclusive breastfeeding and its practice once they understand the benefits, as they gain more knowledge, as recommended in this research. This theory, also known as Social Learning Theory, was developed by psychologist Albert Bandura in 1989. Bandura's well-known Bobo doll experiments, conducted in 1961 and 1963, aimed to explore the reasons behind aggressive behavior in children. The theory posits that people learn behaviors through observation, imitation, and positive reinforcement. Role models play a crucial role in this process, as individuals often repeat behaviors they have seen others perform, whether in person or through media.

2.3 Conceptual framework

Figure 1. Conceptual framework



2. Research Gap Identification

Research on exclusive breastfeeding (EBF) consistently indicates that while mothers generally have strong awareness and positive attitudes toward the practice, there remains a significant disparity between knowledge and actual implementation. Studies have identified multiple challenges that hinder exclusive breastfeeding, including concerns about inadequate milk supply, familial influence, prior experiences, worries about infant health, demanding workloads, and socio-economic difficulties such as poverty and food insecurity. On the other hand, key factors that encourage exclusive breastfeeding include mothers' understanding of its benefits, their confidence in breastfeeding, and the support they receive from both healthcare providers and family members. In Rwanda, various studies have explored the understanding, perspectives, and behaviors surrounding exclusive breastfeeding, primarily concentrating on urban groups. Yet,

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there is scarce research addressing these elements among mothers in rural settings. Consequently, additional research is needed to gain deeper insight into the factors shaping exclusive breastfeeding habits in rural regions throughout Rwanda.

3. Research Methodology

This portion outlines various methodological components that guided the execution of this research project.

3.1 Research Design

This research adopted a quantitative descriptive cross-sectional study framework. This approach is fitting because it gathers data from participants at one specific moment, offering a glimpse into the population without needing to infer causality or time-based connections. Cross-sectional frameworks are especially appropriate for population-wide surveys and are commonly employed to evaluate the occurrence of diseases or conditions within a group (Maninder, 2016). Moreover, this method is beneficial for its streamlined process and affordability, rendering it a sensible option for research with restricted funding and tight schedules (Maninder, 2016).

3.2 Study Population

This study was conducted at Gatunda District Hospital of Rwanda. Rwanda is one the countries that compose the East African Community. Gatunda hospital provide primarily a maternal-child care with 203 beds and an average occupancy rate of 68.6%. It currently serves a population of 318,581 persons (Gatunda District Hospital, 2024). The target population of this study was mothers of children aged 0-6 months attending postpartum care services at Gatunda District Hospital in Rwanda over a one-month period.

3.3 Sample Design

Sample size was calculated by using the Solvin's Formula for sample size calculation in smaller population in the prevalence studies (Glen, 2023). The formula is $n=N/[1+N(e)^2]$. The sample size of 223 mothers were used. The sample of 223 participants is large enough to represent the population of 500 mothers. To obtain the required sample of 223 participants from mothers attending postpartum services at Gatunda District Hospital, systematic random sampling will be used. This approach ensures that the sample is representative while being easy to implement in a hospital setting (Glen, 2023). Firstly, the researcher identified the total number of mothers attending postpartum services at Gatunda District Hospital during the study period then will calculate the sampling interval (k) by dividing the target population by the required sample size. $k=Target\ Population\ (300)/Sample\ Size\ (172) \approx 2$. This means that from a random starting point, every 2nd mother in the attendance register will be selected.

3.4 Research Instrument

The tool for gathering data was a questionnaire administered by an interviewer, crafted by the researcher according to the study's specific goals and informed by a review of existing literature. It was created because no pre-existing standardized questionnaire aligned with this study was found. The questionnaire was initially designed in English, reflecting the study's specific aims, and will subsequently be translated into Kinyarwanda to enhance comprehension.

3.5 Data Analysis Techniques and Presentation

Data was manually reviewed to ensure it was fully complete. Initial recording and verification was performed, followed by entry into SPSS software version 26 for statistical evaluation. A descriptive analysis was conducted. During the analysis, variables were measured using frequencies and percentages. Demographic traits were presented statistically. The Pearson test was calculated to examine the relationships between independent and dependent variables. A p-value below 0.05 was deemed statistically significant. A multivariate analysis will be applied to the significant variables. The final findings were displayed in tables and charts.

4 Results

This section is made up of tables presenting demographic characteristics of participants. In addition, it represents the study results according to the specific objectives of this study. Finally, it shows the discussion of the current study results

4.1 Socio-demographic characteristics of respondents

Sociodemographic characteristics of the participants were collected from the participants, and Table 4.1 shows. With regard to education, about one-third (30.5%) had completed primary education, while 18.4% had incomplete primary education. A further 15.2% had completed secondary school, 17.5% had not completed secondary school, and 8.1% had attained university education. Approximately one in ten women (10.3%) had no formal education, the majority of respondents were married (79.8%), while 13.9% were single, and 3.1% each were divorced or widowed. Parity distribution showed that 43.5% of women had 1–2 children, 41.3% had 3–5 children, and 15.2% had six or more. The mean number of children was 3.2 (SD = 1.7), with a minimum of one and a maximum of eight children. Religious affiliation was dominated by Catholics (43.5%), followed by Protestants (18.8%) and ADEPR members (17.0%). Adventists accounted for 9.0% of respondents, Muslims 5.4%, while 4.0% belonged to other denominations and 2.2% reported no religion or traditional beliefs. Regarding occupation, nearly half (46.2%) of the women were engaged in agriculture or farming, while 17.5% were unemployed and another 17.5% were involved in business. About 10.7% had full-time jobs and 8.1% were working part-time.

Table 4.1 Socio-demographic characteristics of study participants (N = 223)

Variables	Frequency (n)	Percentage (%)
Age (years)		
15–25	61	27.4
26–35	106	47.5
36–45	46	20.6
>45	10	4.5
Mean age = 29.8 years, SD = 6.4, Minimum = 17, Maximum = 46		
Education		
No education	23	10.3
Primary incomplete	41	18.4
Primary complete	68	30.5
Secondary incomplete	39	17.5
Secondary complete	34	15.2
University	18	8.1
Marital status		
Divorced	7	3.1
Married	178	79.8
Single	31	13.9
Widowed	7	3.1
Number of children		
Small (1–2)	97	43.5
Medium (3–5)	92	41.3
Large (≥6)	34	15.2
Mean = 3.2 children, SD = 1.7, Minimum = 1, Maximum = 8		
Religion		
No religion/Traditional	5	2.2
Catholic	97	43.5
Protestant (Anglican/Presbyterian)	42	18.8
Muslim	12	5.4
ADEPR (Pentecostal)	38	17.0
Adventist	20	9.0
Others	9	4.0
Occupational status		
Unemployed	39	17.5
Agriculture/Farmer	103	46.2
Business	39	17.5
Part-time job	18	8.1
Full-time job	24	10.7

Source: primary data, 2025

4.2 Level of knowledge towards exclusive breastfeeding among the study participants

As Table 4.2 indicates, most participants (75.3%) correctly reported that breastfeeding should be initiated within the first hour after birth, while 18.4% mentioned after one hour and 6.3% indicated after 24 hours. The majority (80.3%) knew that exclusive breastfeeding should be practiced for six months, although 9.4% thought it was less than six months and 10.3% believed it should be continued beyond six months. When asked how they could tell that a child had received adequate breast milk, nearly half (48.9%) mentioned when the infant appeared satisfied, 27.8% when the child stopped sucking, and 16.6% when the baby slept; only 6.7% considered hiccups as a sign. Regarding the protective benefits of EBF, 68.2% of respondents recognized that it prevents diarrhea, while 18.8% were not aware and 13.0% did not believe in this benefit. More than half (53.4%) knew that EBF helps to prevent the next pregnancy, whereas 25.6% disagreed and 21.1% did not know. Finally, 72.2% affirmed that breast milk alone is sufficient for the first six months of life, while 15.2% disagreed and 12.6% were uncertain.

Table 4.2 Participants' knowledge of exclusive breastfeeding (N = 223)

Variables	Frequency (n)	Percentage (%)
When to start breastfeeding		
Within first hour	168	75.3
After 1 hour	41	18.4
After 24 hours	14	6.3
For how long EBF is needed		
< 6 months	21	9.4
For 6 months	179	80.3
> 6 months	23	10.3
What tells you that the child received adequate breastmilk		
When satisfied	109	48.9
When stopped sucking	62	27.8
When sleeps	37	16.6
Other sign (hiccup)	15	6.7
EBF prevents diarrhea		
Yes	152	68.2
No	29	13.0
I don't know	42	18.8
EBF prevents next pregnancy		
Yes	119	53.4
No	57	25.6
I don't know	47	21.1
Breast milk only is enough for six months		
Yes	161	72.2
No	34	15.2
I don't know	28	12.6

Source: Primary data, 2025

Table 4.3 presents the overall knowledge score of participants regarding exclusive breastfeeding (EBF). The score was derived from SIX questions assessing participants' EBF understanding. Each question was marked with ten points. Each participant's total score was converted to a percentage out of 100. Based on their scores, knowledge levels were categorized into three groups: low (<50%), moderate (50%–75%), and high (>75%). The overall knowledge score of participants regarding exclusive breastfeeding showed that almost half (49.8%) of the women had moderate knowledge, while 35.0% demonstrated high knowledge and 15.2% had low knowledge levels. The mean knowledge score was 68.7% (SD = 14.5), with individual scores ranging from a minimum of 30% to a maximum of 95%.

Table 4.3 Overall score of participants' knowledge on EBF (N = 223)

Knowledge level	Number (n)	Percentage (%)
Low (<50% score)	34	15.2
Moderate (50–75% score)	111	49.8
High (>75% score)	78	35.0

Mean score = 68.7% , SD = 14.5 , Minimum = 30% , Maximum = 95%

Figure 4.1 illustrates the various sources through which participants acquired information on Exclusive Breastfeeding. Among 223 participants, the most frequently cited source was Community Health Workers (CHWs), reported by 92.1% of respondents, followed by health centers or hospitals (84.0%, and radio broadcasts (79.1%. Community meetings or Umuganda were also significant sources, mentioned by 53.9% of participants. Television was noted by 30.9%, while social media had the lowest reach, cited by only 22.8% of respondents.

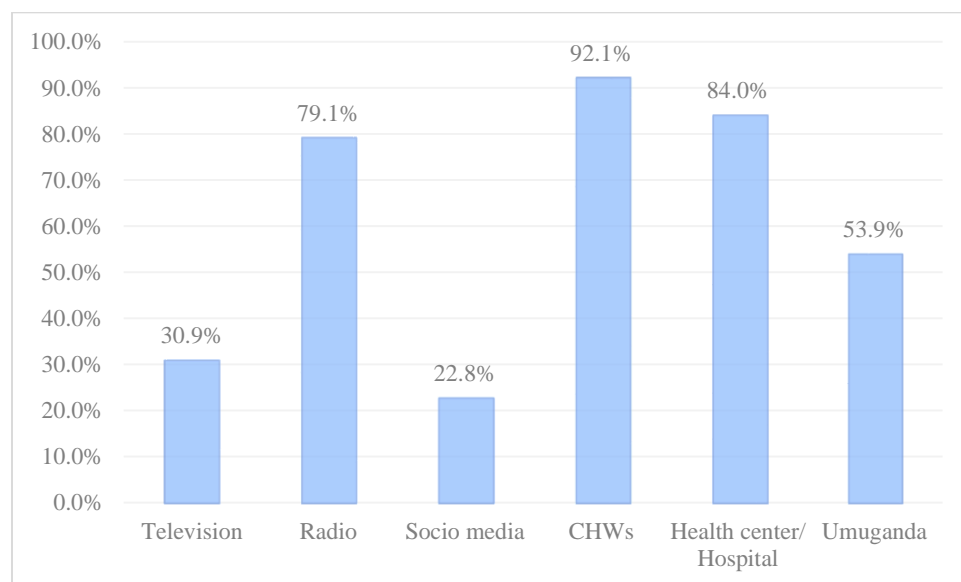


Figure 2. Source of information about Exclusive breastfeeding among participants

4.4. Level of attitudes towards Exclusive Breastfeeding among the study participants

As Table 4.4 indicates, the majority of participants expressed positive attitudes toward exclusive breastfeeding. More than 80% either agreed or strongly agreed that EBF causes happiness to the child (82.9%), makes the child look good and strong (82.1%), and gives them a positive feeling (84.8%). Similarly, most participants (83.4%) believed breast milk is better than artificial or cow’s milk, while 74.4% considered breast milk alone to be enough for a child before six months. Furthermore, 79.4% agreed that an exclusively breastfed child is healthier compared to a non-EBF child. Only a small proportion of mothers disagreed with these positive statements, while about 8–13% remained neutral.

Table 4.4 Participants’ attitudes towards exclusive breastfeeding (N = 223)

Attitude assessing question	Strongly Disagree n (%)	Disagree n (%)	Neutral n (%)	Agree n (%)	Strongly Agree n (%)
1. Exclusive breastfeeding a child causes happiness	6 (2.7)	10 (4.5)	22 (9.9)	118 (52.9)	67 (30.0)
2. EBF makes a child look good and strong	4 (1.8)	11 (4.9)	25 (11.2)	115 (51.6)	68 (30.5)
3. I have a positive feeling on EBF	5 (2.2)	8 (3.6)	21 (9.4)	119 (53.4)	70 (31.4)
4. Breast milk is better than artificial/cow milk	7 (3.1)	12 (5.4)	18 (8.1)	110 (49.3)	76 (34.1)
5. Breast milk alone is enough for a child before 6 months	9 (4.0)	18 (8.1)	30 (13.5)	108 (48.4)	58 (26.0)
6. An exclusively breastfed child is healthier than a non-EBF child	6 (2.7)	13 (5.8)	27 (12.1)	111 (49.8)	66 (29.6)

Table 4.5 presents the overall score of participants’ attitudes toward EBF. To assess these attitudes, participants were asked 6 questions depending on whether they disagreed or agreed with a positive or a negative attitude question. This means the possible minimum total score a participant could obtain was 6 (if they scored 1 on all items), and the maximum possible total score was 30 (if they scored 5 on all items). Based on these scores, participants were categorized as having a positive attitude if their total score was 20 or above, a moderate attitude if their score was between 15 and 19, and a negative attitude if it was below 15. The majority of participants expressed positive attitudes toward exclusive breastfeeding. More than 80% either agreed or strongly agreed that EBF causes happiness to the child (82.9%), makes the child look good and strong (82.1%), and gives them a positive feeling (84.8%). Similarly, most participants (83.4%) believed breast milk is better than artificial or cow’s milk, while 74.4% considered breast milk alone to be enough for a child before six months. Furthermore, 79.4% agreed that an exclusively breastfed child is healthier compared to a non-EBF child. Only a small proportion of mothers disagreed with these positive statements, while about 8–13% remained neutral.

Table 4.5 Overall score of participants’ attitudes towards exclusive breastfeeding (N = 223)

Level of Attitudes	Frequency (n)	Percentage (%)
Negative (<15 scores)	21	9.4
Moderate (15–19 scores)	64	28.7
Positive (≥20 scores)	138	61.9
Mean score = 21.4 , SD = 4.2 , Minimum = 12 , Maximum = 29		

4.5. The level of practices towards Exclusive Breastfeeding among the study participants

Table 4. 6 Participants’ practices towards exclusive breastfeeding (N = 223)

Variable	Frequency (n)	Percentage (%)
Did you exclusively breastfeed your child all 6 months?		
Yes	148	66.4
No	75	33.6
When did you start breastfeeding (in the first hour after delivery)?		
Yes	163	73.1
No	60	26.9

Table 4.7 presents the overall score of participants’ practices toward EBF. To evaluate the practice, participants responded to 1 question asking EBF offering two possible answers: “Yes,” and “No,” which were scored as 0, and 1 respectively. This scoring system yielded a minimum possible total score of 0 and a maximum possible score of 1. Based on the total scores, participants were categorized as having good practice if they scored 1, and poor practice if they scored 0. The overall practice score showed that 66.4% of the participants had good EBF practice, while 33.6% had poor practice. The mean practice score was 0.66 (SD = 0.47), with a minimum of 0 and a maximum of 1.

Table 4.7 Overall score of participants’ practices towards EBF (N = 223)

Level of Practice	Frequency (n)	Percentage (%)
Good (1 score)	148	66.4
Poor (0 score)	75	33.6
Mean score = 0.66 , SD = 0.47 , Minimum = 0 , Maximum = 1		

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4.6. Factors associated with the participants' Practices towards Exclusive Breastfeeding

Table 4.10 presents the analysis of factors associated with participants' practices towards Exclusive Breastfeeding. A statistically significant association found that education, occupational status, knowledge level, and attitude level were significantly associated with good EBF practices ($p < 0.05$). Mothers with higher education and those with full-time employment were more likely to exclusively breastfeed compared to their counterparts with lower education or who were unemployed. Similarly, women with high EBF knowledge and positive attitudes were significantly more likely to report good breastfeeding practices. Conversely, age, marital status, number of children, and religion were not statistically associated with EBF practice ($p > 0.05$).

Table 4.8 Factors associated with participants' practice towards Exclusive Breastfeeding (N = 223)

Variable	Good practice n (%)	Poor practice n (%)	χ^2 Value	p-value
Age (years)				
15–25 (n=61)	35 (57.4)	26 (42.6)	3.52	0.318
26–35 (n=98)	71 (72.4)	27 (27.6)		
36–45 (n=49)	35 (71.4)	14 (28.6)		
>45 (n=15)	7 (46.7)	8 (53.3)		
Education			14.21	0.007*
No education (n=18)	7 (38.9)	11 (61.1)		
Primary incomplete (n=39)	21 (53.8)	18 (46.2)		
Primary complete (n=64)	43 (67.2)	21 (32.8)		
Secondary incomplete (n=32)	21 (65.6)	11 (34.4)		
Secondary complete (n=47)	36 (76.6)	11 (23.4)		
University (n=23)	20 (87.0)	3 (13.0)		
Marital status			6.27	0.098
Divorced (n=9)	4 (44.4)	5 (55.6)		
Married (n=176)	122 (69.3)	54 (30.7)		
Single (n=30)	18 (60.0)	12 (40.0)		
Widowed (n=8)	4 (50.0)	4 (50.0)		
Number of children			1.42	0.491
Small (1–2, n=87)	57 (65.5)	30 (34.5)		
Medium (3–5, n=105)	72 (68.6)	33 (31.4)		
Large (≥ 6 , n=31)	19 (61.3)	12 (38.7)		
Religion			7.11	0.311
No religion/Traditional (n=10)	5 (50.0)	5 (50.0)		
Catholic (n=84)	58 (69.0)	26 (31.0)		
Protestant (n=43)	30 (69.8)	13 (30.2)		
Muslim (n=18)	10 (55.6)	8 (44.4)		
ADEPR (n=33)	22 (66.7)	11 (33.3)		
Adventist (n=25)	18 (72.0)	7 (28.0)		
Others (n=10)	5 (50.0)	5 (50.0)		
Occupational status			11.87	0.018*
Unemployed (n=33)	17 (51.5)	16 (48.5)		
Agriculture/Farmer (n=84)	53 (63.1)	31 (36.9)		
Business (n=41)	29 (70.7)	12 (29.3)		
Part-time job (n=24)	16 (66.7)	8 (33.3)		
Full-time job (n=41)	33 (80.5)	8 (19.5)		
Knowledge level			22.14	<0.001*
Low (<50%) (n=42)	18 (42.9)	24 (57.1)		
Moderate (50–75%) (n=94)	61 (64.9)	33 (35.1)		
High (>75%) (n=87)	69 (79.3)	18 (20.7)		
Attitude level			27.46	<0.001*
Negative (<15) (n=20)	6 (30.0)	14 (70.0)		
Moderate (15–19) (n=63)	33 (52.4)	30 (47.6)		
Positive (≥ 20) (n=140)	109 (77.9)	31 (22.1)		

*Significant associations at $p < 0.05$

The multivariate logistic regression revealed that maternal education, occupational status, knowledge level, and attitude level were independent predictors of good EBF practice. Mothers with secondary complete education (AOR = 4.31, 95% CI: 1.37–13.54, $p = 0.012$) and university education (AOR = 6.42, 95% CI: 1.48–27.77, $p = 0.013$) were significantly more likely to practice EBF compared to those with no education. Similarly, mothers engaged in full-time jobs were more than three times more likely to exclusively breastfeed than unemployed mothers (AOR = 3.56, 95% CI: 1.17–10.84, $p = 0.025$). Knowledge and attitude also showed strong effects: women with high knowledge were four times more likely to practice EBF (AOR = 4.12, 95% CI: 1.68–10.07, $p = 0.002$), while those with positive attitudes were over five times more likely (AOR = 5.42, 95% CI: 1.78–16.52, $p = 0.003$).

Table 4.9 Multivariate Logistic Regression of Factors Associated with Participants' Practice Towards Exclusive Breastfeeding (N=223)

Variable	COR (95% CI)	AOR (95% CI)	P-value
Education			
No education (ref)	1.0	1.0	–
Primary incomplete	1.65 (0.58–4.71)	1.42 (0.47–4.29)	0.528
Primary complete	3.12 (1.16–8.39)	2.75 (0.98–7.74)	0.054
Secondary incomplete	3.37 (1.11–10.27)	2.98 (0.91–9.71)	0.071
Secondary complete	5.14 (1.76–14.98)	4.31 (1.37–13.54)	0.012*
University	8.57 (2.12–34.65)	6.42 (1.48–27.77)	0.013*
Occupational status			
Unemployed (ref)	1.0	1.0	–
Agriculture/Farmer	1.55 (0.66–3.64)	1.39 (0.54–3.56)	0.492
Business	2.35 (0.90–6.16)	2.01 (0.72–5.62)	0.181
Part-time job	2.09 (0.72–6.04)	1.88 (0.61–5.80)	0.266
Full-time job	4.07 (1.43–11.60)	3.56 (1.17–10.84)	0.025*
Knowledge level			
Low (<50%) (ref)	1.0	1.0	–
Moderate (50–75%)	2.46 (1.13–5.34)	2.18 (0.96–4.98)	0.063
High (>75%)	4.85 (2.09–11.26)	4.12 (1.68–10.07)	0.002*
Attitude level			
Negative (<15) (ref)	1.0	1.0	–
Moderate (15–19)	2.00 (0.67–5.92)	1.79 (0.56–5.70)	0.321
Positive (≥ 20)	6.35 (2.30–17.53)	5.42 (1.78–16.52)	0.003*

* Significant at $p < 0.05$

5 Discussion

This study assessed the knowledge, attitudes, and practices (KAP) toward exclusive breastfeeding (EBF) among 223 postpartum women attending Gatunda District Hospital. Overall, participants demonstrated moderate to high knowledge (mean score 68.7%, 49.8% moderate, 35.0% high), largely positive attitudes (mean attitude score 21.4; 61.9% positive), and reasonably good practices, with 66.4% exclusively breastfeeding for six months and 73.1% initiating breastfeeding within the first hour. Multivariable analysis identified maternal education (secondary and tertiary),

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full-time employment, high knowledge, and positive attitudes as independent predictors of good EBF practice.

The observed EBF prevalence (66.4%) aligns with many facility-based and district studies in Rwanda and East Africa, though it is slightly lower than some national estimates. The Rwanda Demographic and Health Survey (RDHS 2019–20) reports higher early initiation and EBF coverage ($\approx 81\%$ for younger infants) (National Institute of Statistics of Rwanda, 2020). Differences likely reflect sample selection, measurement methods, and local contextual factors (Nyirahirwa et al., 2023; Ahishakiye et al., 2020). Across sub-Saharan Africa, pooled EBF prevalence is lower ($\sim 40\text{--}50\%$), with Rwanda consistently achieving higher rates (Koray et al., 2025). The relatively high early initiation in this study (73.1%) mirrors prior Rwandan findings and suggests that hospital-based support at delivery effectively promotes timely breastfeeding (Gato et al., 2022; Ameyaw et al., 2023).

Participants' knowledge levels ($\approx 68.7\%$) indicate good awareness of EBF recommendations, with 80.3% correctly identifying the six-month duration and 75.3% recognizing initiation within the first hour. These findings align with other East African studies reporting strong knowledge of EBF benefits, such as diarrhea prevention, though gaps remain between knowledge and practice (Dukuzumuremyi et al., 2020; Sabo et al., 2023). In Rwanda, similar facility-based surveys report high awareness but variable detailed knowledge (Ahishakiye et al., 2020; Nyirahirwa et al., 2023). The relatively high knowledge observed may reflect effective antenatal education, postnatal counseling, and active community health worker programs.

Attitudes toward EBF were largely positive, consistent with regional evidence (Dukuzumuremyi et al., 2020; Sokan-Adeaga et al., 2023). Most mothers acknowledged breast milk's superiority and its contribution to child health. However, 28.7% had moderate attitudes, and 9.4% held negative views, highlighting that knowledge alone does not guarantee positive attitudes. Cultural beliefs, elder family influence, social norms, and perceived maternal capacity can moderate attitudes and contribute to ambivalence (Ejie et al., 2021).

Two-thirds of mothers practiced EBF to six months, which exceeds many sub-Saharan Africa pooled estimates ($\sim 49\%$) but remains below some national claims. Facility-based samples may overestimate adherence due to better access to health messaging, though measurement methods (e.g., 24-hour recall) influence prevalence (Ahishakiye et al., 2020). One-third of mothers did not practice full EBF, consistent with evidence that perceived insufficient milk, return to work, infant illness, and social pressures often lead to early cessation (Kalhor et al., 2025; Ejie et al., 2021).

Maternal education, knowledge, and positive attitudes independently predicted EBF practice, confirming the psychosocial pathway where knowledge shapes beliefs, attitudes, and self-efficacy, which in turn influence behavior (Kalhor et al., 2025). Full-time employment was unexpectedly associated with better EBF, likely reflecting formal employment with maternity leave or supportive workplace policies, whereas informal work can impose practical barriers (Mohammed et al., 2025). Strengths of this study include the comprehensive KAP assessment and multivariable modeling, while limitations include the cross-sectional design, self-reported measures susceptible to recall bias, and a single-facility sample limiting generalizability.

Actionable implications include: (1) continued investment in maternal education and antenatal counseling to improve knowledge and attitudes; (2) implementation of maternity-friendly policies and community support to facilitate EBF among working mothers; and (3) social and family-level

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interventions, including partner and grandmother engagement, to translate knowledge and attitudes into sustained practice (Ejje et al., 2021; Dukuzumuremyi et al., 2020).

6 Conclusion and Recommendations

This study demonstrates that postpartum women attending Gatunda District Hospital possess generally good knowledge and positive attitudes towards EBF, with the majority practicing exclusive breastfeeding for six months and initiating breastfeeding early. Education, full-time employment, high knowledge, and positive attitudes were key predictors of EBF practice. Despite encouraging findings, one-third of mothers did not practice EBF fully, highlighting gaps that require targeted interventions. The study emphasizes the importance of leveraging education, maternal knowledge, and attitudinal reinforcement to improve breastfeeding practices. Furthermore, workplace and policy support can play a crucial role in sustaining EBF, particularly for working mothers. These findings provide valuable evidence to guide local health promotion strategies and strengthen national EBF programs in Rwanda.

There is a need to implement antenatal and postnatal visits to reinforce knowledge and positive attitudes towards EBF. There should be an organization of peer-support groups and mother-to-mother forums within the hospital catchment area to share experiences and practical strategies for maintaining EBF. The ministry of health should promote nationwide media campaigns to highlight the benefits of EBF and address common misconceptions. It must strengthen workplace policies to support breastfeeding mothers, including maternity leave, lactation breaks, and safe breastfeeding spaces.

Other stakeholders should support community-level initiatives, including home visits and CHW-led education, to reach mothers with limited access to health facilities. Therefore, should allocate resources for research and interventions targeting mothers facing socio-economic barriers, such as informal workers or those with low educational attainment. Further research should conduct longitudinal studies to assess the sustainability of EBF practices over time and the impact of interventions on maternal knowledge, attitudes, and practice. Investigate socio-cultural determinants and family influences on EBF practices, including partner and elder involvement, in both urban and rural Rwandan contexts. Evaluate workplace and community-based interventions designed to improve EBF rates among employed mothers, with a focus on feasibility and effectiveness in rural settings.

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