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Knowledge and Practices towards Complementary Feeding among Mothers with Children below 24 Months at Kihunda HC III-Sheema Municipality, Uganda

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ABSTRACT

The study assessed knowledge and practices towards complementary feeding among mothers with children below 24 months at Kihunda HC-III Sheema Municipality. The Specific objectives were; to assess the knowledge about complementary feeding among mothers with children below 24 months and to find out the practices of complementary feeding among mothers with children below 24 months at Kihunda HC-III Sheema municipality. This study used a descriptive cross-sectional study design. A cross-sectional and descriptive study is a type of observation study that analyzes data collected from a population or a representative at a given point in time. The study findings on mothers' responses on how often should they breastfeed their baby indicated that 68.8% gave on demand. It indicated that mothers lacked access to or awareness of medical services. The reasons for introducing complementary foods before 6 months include; the baby crying a lot given by 22%, work given by 38%. Concerning the best practices, mothers are encouraged to feed their infants with locally available home-prepared foods which contain calories, proteins, minerals, and vitamins (40%); clean hands, and utensils before feeding. The recommendation of the study includes; providing baby with a variety of foods and letting them decide how much they want to eat; starting offering complementary foods once a day and slowly building up to 3 times a day and preparing food ahead of time and freezing it in ice-cube trays or small individual containers for later use.

Keywords: Malnutrition, Complementary feeding, Diet, Breastfeeding, Food.

INTRODUCTION

Globally an appropriate diet is critical in the growth and development of children, especially in the first two years of life. World Health Organization (WHO) recommends exclusive breastfeeding (BF) for the first six months of age, and the addition of complementary feeds at six months with continued BF till two years. These feeding recommendations if followed appropriately can decrease infant mortality by 19 percent and prevent malnutrition, especially in developing countries like Uganda [1, 2]. Worldwide, undernutrition affects more than 50% of children especially those under 5 years of age [3, 4]. Malnutrition remains one of the most common causes of morbidity and mortality and it is an underlying cause of about 3.5 million children's deaths each year [5-7]. Feeding practices for infants and young children worldwide are not optimal. It is only 39% of all infants who are given complementary feeding at appropriate age worldwide. Globally, more than 10 million children under the age of two die each year, 41% of these deaths occur in sub-Saharan Africa and the other 34% in South Asia [8]. In Africa, the introduction of complementary foods to infants is often accompanied by stress and ill health [9, 10]. This is when the food is not

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tailored to the child's needs and the feeding practices deprive the child of the highly required nutrients. It is therefore, paramount that feeding and child care during this period be optimized, focusing mainly on the frequency of feeding, the energy density of the foods, the diversity of foods in the diet, the safety of the foods, and the feeding process [11]. In sub-Saharan Africa, complementary foods are introduced fairly early in a child's life with many infants and young children subsisting on gruel and porridge prepared from staples, accompanied by vegetables and legumes, and only occasionally, animal foods [12]. More than 50,000 children die in Nepal annually, and malnutrition contributes to more than 60 percent of these deaths. Complementary feeds bridge the energy, vitamin A, and iron gaps that arise in breastfed infants at 6 months of age. Vitamins, minerals, and proteins present in complementary foods are important in promoting growth, maintenance of tissues and aid in other biological processes [13-16]. It is very essential to initiate complementary feeding timely [17, 18]. In Eastern Kenya, by age 3 months, 90% of infants are already receiving complementary feedings of cow milk and maize or millet gruels with some evidence that introducing cereal gruel before age 4 months is associated with malnutrition [19]. Malnutrition undermines productivity resulting from weak physical status, indirect loss from fragile cognitive development, increased child morbidity and mortality, and loss incurred due to increased healthcare costs in treating infections [20, 21]. Inappropriate feeding practices are also responsible for growth faltering in infants. The first 1000 days of a child's life, from conception to 24 months of age are most vulnerable to the risk of malnutrition [9]. In Uganda, most malnutrition in children below 24 months happens during this period. About 13% of infants in Uganda are born with some malnutrition [22].

The Uganda Demographic Health survey reported that only 2.7% of children 6-23 months of age in western Uganda met the recommended infant and young child feeding practices [18]. The levels of undernutrition in children in this region (24.7% stunting, 12.3% underweight, and 3.4% wasting) were high compared to the national averages of 33%, 14%, and 5% for stunting, underweight, and wasting, respectively [22]. According to UBOS [23], levels of malnutrition among infants 6-23 months in Sheema District in Western Uganda were high. Stunting was at 27%, underweight at 31%, and wasting at 11%. The age bracket of 6-23 months is the complementary feeding phase and most infants in the districts are not meeting their recommendations indicated by the high malnutrition levels. Interventions to improve complementary feeding in the Sheema district such as; health and nutrition education were put in place but malnutrition still remains a challenge. Despite the Ministry of Health's interventions to fulfill the third sustainable development goal (SDGs) which aims at ensuring healthy lives and promoting well-being for all ages, there is still an increased rate of malnutrition in children under 5 years in western Uganda [9]. Therefore, this study assessed knowledge and practices of complementary feeding among mothers with children below 24 months at Kihunda HC-III Sheema Municipality, Uganda.

METHODOLOGY

Study Design

This study used a descriptive cross-sectional study design. A cross-sectional and descriptive study is a type of observation study that analyzes data collected from a population or a representative at a given point in time. It was preferred because it saves time and cost [24]. This used an in-depth interview to collect quantitative data to assess knowledge and practices towards complementary feeding among mothers with children below 24 months at Kihunda HC-III Sheema municipality.

Area of Study

The study was carried out at Kihunda HC III because the area served by this health unit has a high rate of undernutrition. Kihunda HC III is found in Sheema municipality, Western Uganda approximately 187km from Kampala. The facility has a bed capacity of 16 patients. It serves a population of 6355 with 400 of the population being between children within a range of 0-2 years. The health unit has an average of 3 admissions per day in the pediatric ward. The primary economic activity is agriculture on a subsistence scale with a focus on food crops such as beans, millet, matooke, cassava, potatoes, Coffee, and dairy farming.

Study Population

The study populations were mothers with children less than 24 months attending Kihunda HC III inpatient and outpatient departments. The researcher selected mothers with children less than 24 months because the first 1000 days of a child's life, from conception to 24 months of age are most vulnerable to the risk of malnutrition.

Sample Size Determination

The sample size was based on the literature on knowledge and practices of mothers with children aged below 24 months towards complementary feeding at Kihunda HC III. This formula was applied to obtain the sample size.

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

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Where; n_f = The desired sample size

N = Total population

e = Level of statistical confidence set

If e was estimated at 90% (0.9) and $N = 400$ people, then $(1-0.9) = 0.1$

$$n_f = \frac{400}{1 + 400(0.1)^2}$$

$$= \frac{400}{1 + 400(0.1)^2}$$

$$= \frac{400}{1 + 400(0.1)^2}$$

$$= \frac{400}{1 + 40}$$

$$= \frac{400}{5}$$

$$= 80 \text{ Respondents}$$

Therefore, the sample size of the study was 80 respondents.

Sampling Procedure and Rationale

The study participants were selected from the study population using a simple random sampling method, where each unit took equal chances of being selected for the study. This method involved the calculation of fraction intervals from the study population where papers written on one or two were folded and put in an open box and every mother who pick 2 was enrolled in the study. This method was best used when people were gathered in one place or are reporting at different intervals. This method was cheap, time-saving, and gave all participants equal chances of being selected. Purposive sampling was used to select the respondents.

Inclusion Criteria

- Mothers with children less than 24 Months, visiting outpatient department or admitted at Kihunda HC III Inpatient Department and has ever breastfed.
- Mothers who were willing to consent to take part in the study.

Exclusion criteria

- i. Mothers who declined to sign the consent.
- ii. Mothers who did not breastfeed their children prior to the introduction of complementary feed for one reason or another.

Dependent variable

Complementary feeding of children aged below 24 months.

Independent Variables

Knowledge and practices of mothers

Data collection methods

Data was collected using an approved semi-structured questionnaire which consisted of both open and closed-ended questions.

Data management

Data collected was physically counter-checked daily by the Principal investigator. This ensured clarity, completeness, consistency, and proper labeling. Filled questionnaires were kept safely. The results were integrated with the quantitative data. Data was stored in the computer as a backup plus a hard copy printed after the collections.

Data analysis

Quantitative data collected was summarized into tables and frequency distribution tables. Frequencies and percentages for categorical variables were calculated. Graphs, pie charts, and tables were used to display the data analyzed using micro soft office computer program. The themes identified were assembled using Microsoft Office in the form of tables in percentages and displayed by charts.

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Ethical Considerations

The researcher sought permission from the research board of Kampala international university's nursing department. An introductory letter was obtained from the research board to the District Health Officer (DHO). Written informed consent was obtained from each study participant after introducing them to the purpose of the study was informed about their rights to interrupt the interview at any time. Confidentiality was maintained at all levels of the study.

RESULTS

Socio-demographics of the Respondents

Table 1: Socio-demographics of the respondents

AGE	FREQUENCY	PERCENTAGE
15-25	11	13.8
26-35	38	47.5
36-45	29	36.3
46 and above	2	2.5
Total	80	100
Marital status		
Single	15	18.8
Married	65	81.2
Total	80	100
RELIGION		
Christian	46	57.5
Muslim	10	12.5
Other Religion	24	30.0
Total	80	100
Level of education		
Primary level	30	37.5
Secondary level	15	18.8
Tertiary institution	20	25.0
None	15	18.8
Total	80	100

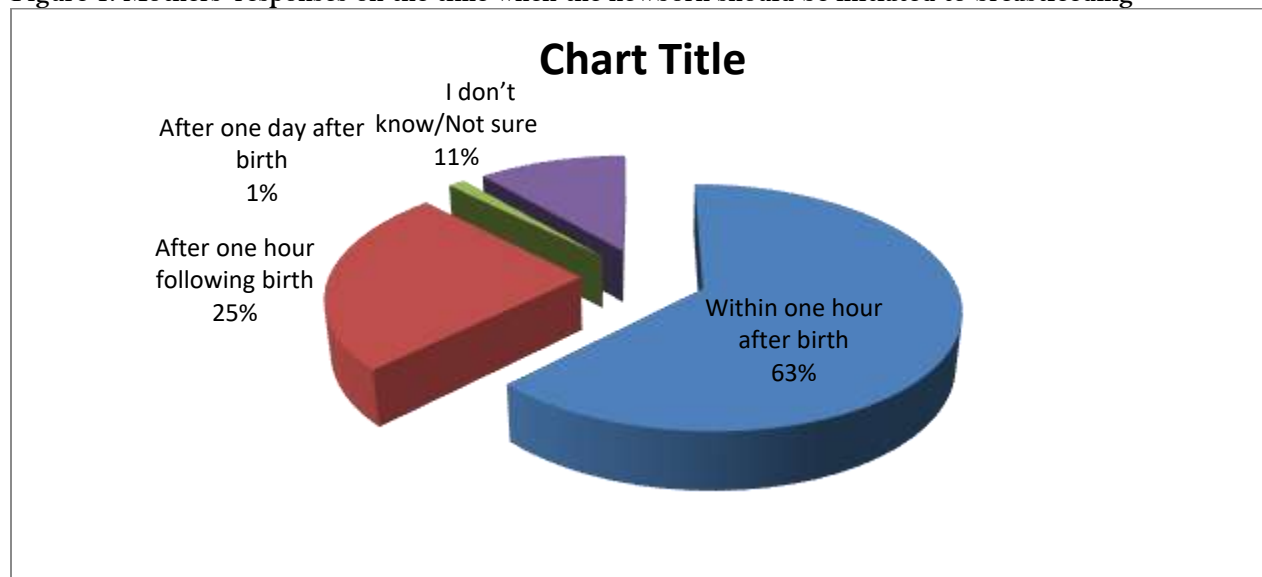
Most of the participants were between the age of 26-35 (47.5%), and 36-45 (36.3%) followed by those of 26-35 (47.5%), 46 and above (2.5%) and 15-25 (13.8%). Most of the participants were married (81.2%) followed by those living a single (18.8%) and widow (4%) life and then those who had separated/divorced (10%). Most of the respondents were of the Christian denomination (57.5%) followed by other religions (30%) and then Muslims (12.5%). For the case of education level, most of the mothers had attained primary level (37.5%), Secondary level (18.5%), Tertiary institution (25%) and none (18.8%).

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The knowledge about complementary feeding among mothers with children below 24 months at Kihunda HC-III Sheema municipality.

Figure 1: Mothers' responses on the time when the newborn should be initiated to breastfeeding



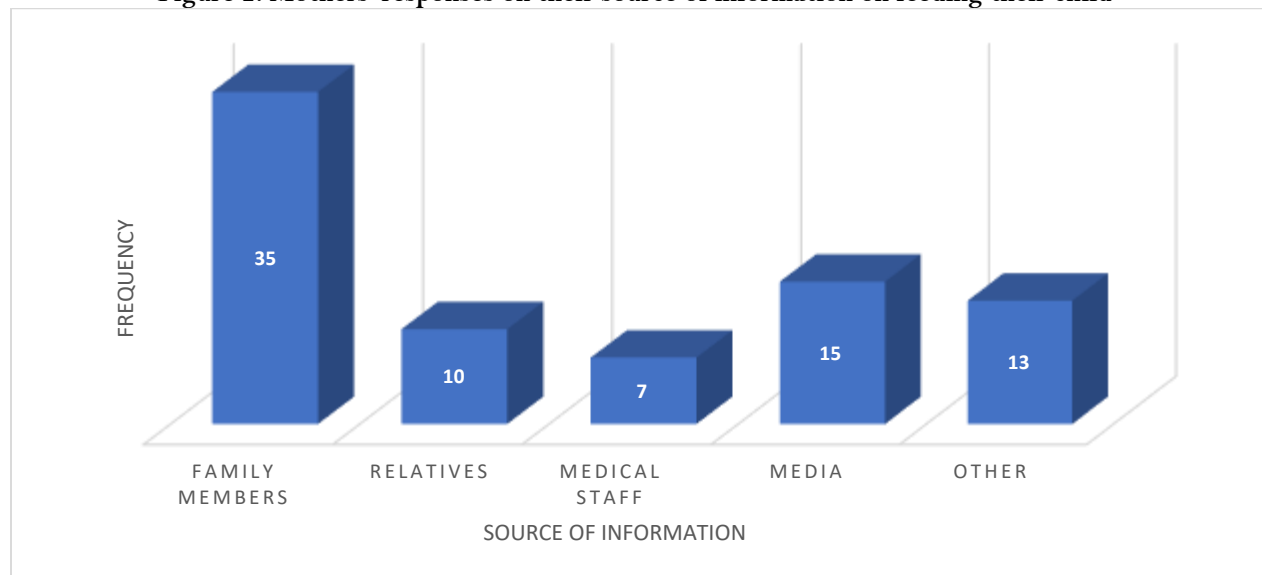
According to the figure above, mothers' responses on the time when the newborn should be initiated to breastfeeding showed that 63% believed that it should be done within one hour after birth.

Table 2: Mothers' responses on how often should they breastfeed their baby

Response	Frequency	Percentage
On-demand	55	68.8
According to the timetable	15	18.8
Not sure	10	12.5
Total	80	100

According to the table above, mothers' responses on how often should they breastfeed their baby indicated that 68.8% gave on demand, 18.8% according to the timetable and 12.5% were not sure.

Figure 2: Mothers' responses on their source of information on feeding their child



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From the figure above, mothers' responses on their source of information on feeding their children showed that 35 mothers got it from family members, 10 got it from relatives, 7 got it from medical staff, 15 got it from the media and 13 got it from other sources like at school.

Table 3: The role of mothers' knowledge towards complementary feeding among mothers with children below 24 months at Kihunda HC-III Sheema municipality

Responses	Frequencies	Percentage
Promotion of the child feeding practices	40	50.0
It provides mothers with knowledge about the appropriate time for the introduction of complementary feeding and the total time for breastfeeding	50	62.5
It prevents the child from malnutrition	52	65.0
Lack of knowledge and proper feeding practices contribute to higher childhood morbidity and mortality	60	75.0
Nutritional education to mothers to improve awareness about infant feeding in the variety, quantity, quality and consistency of complementary feeding.	25	31.3
Lack of adequate nutrition during this period can lead to impaired cognitive development, compromised academic performance, and low economic productivity which become difficult to reverse later in life.	19	23.8
Feeding awareness such as avoiding feeding bottles and improving dietary diversity.	34	42.5

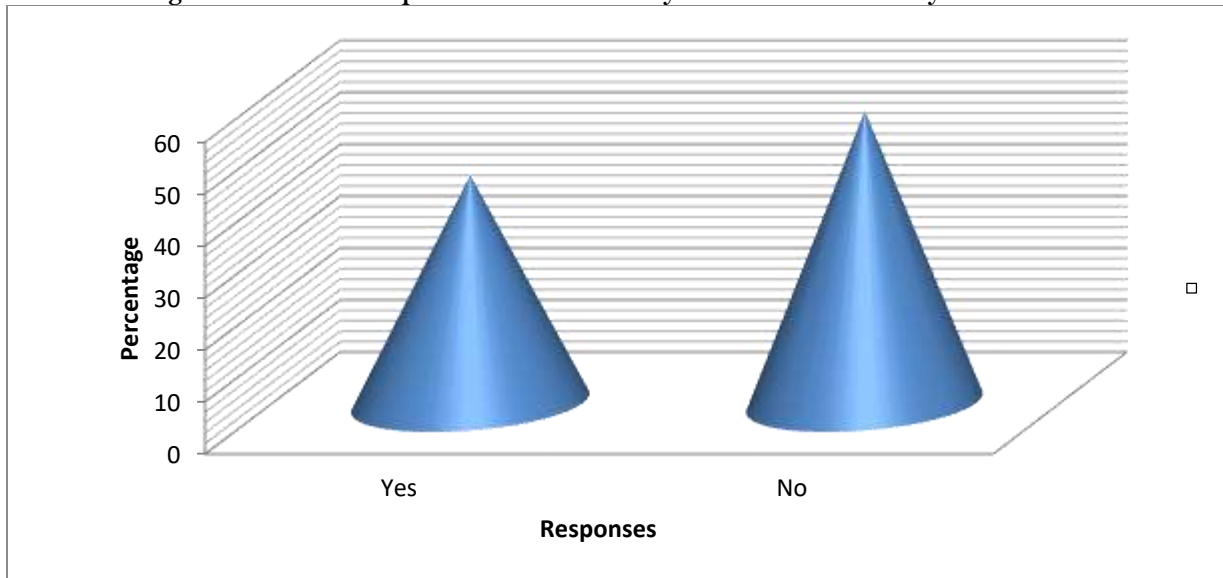
According to the table above, the role of mothers' knowledge towards complementary feeding among mothers with children below 24 months at Kihunda HC-III Sheema municipality include; promotion of the child feeding practices given by 50%, it provides mothers knowledge about appropriate time for introduction of complementary feeding and total time for breastfeeding given by 62.5%, it prevents the child from malnutrition given by 65%, lack of knowledge and proper feeding practices contribute to higher childhood morbidity and mortality given by 75%, nutritional education to mothers to improve awareness about infant feeding in the variety , quantity, quality and consistency of complementary feeding given by 31.3%, lack of adequate nutrition during this period can lead to impaired cognitive development, compromised academic performance, and low economic productivity which become difficult to reverse later in life given by 23.8% and feeding awareness such as avoiding feeding bottles and improved on dietary diversity given by 42.5%.The practices of mothers on complementary feeding among mothers with children below 24 months at Kihunda HC-III Sheema municipality.

Table 4: Mothers' responses on whether their babies receive anything else before receiving breast milk (any food or liquid other than breast milk)

Response	Frequency	Percentage
Yes	24	30
No	56	70
Total	80	100

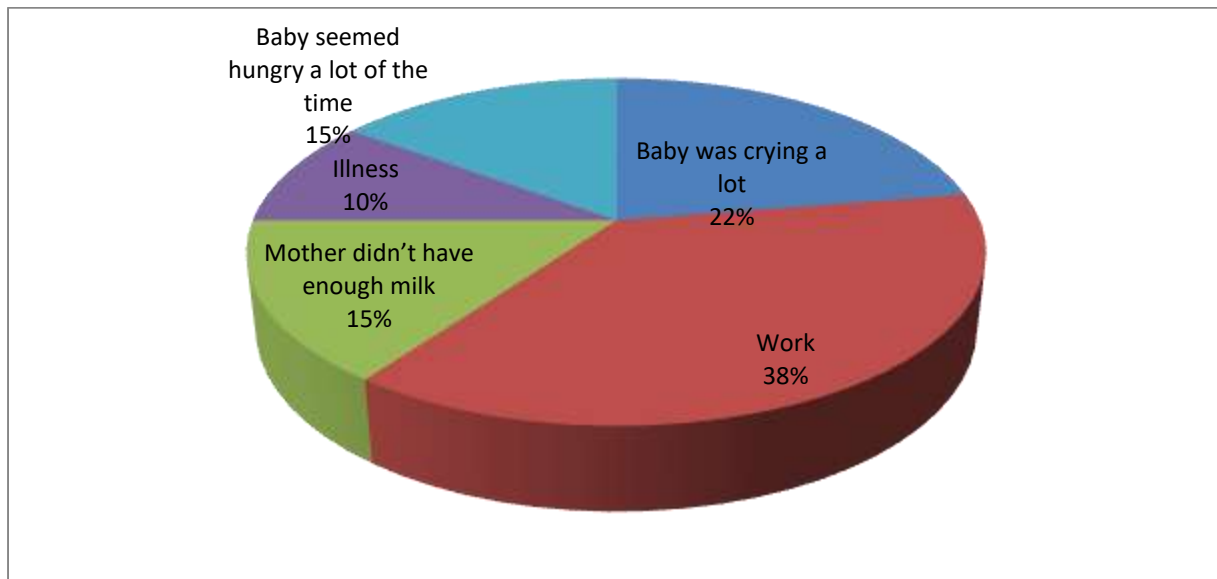
From the table above, most mothers' responses on whether their babies receive anything else before receiving breast milk (any food or liquid other than breast milk) showed that they did not give by 70%.

Figure 3: Mothers' responses on whether they breastfeed exclusively for six months



The majority of the mothers did not breastfeed exclusively for six months (56.2%) while 43.8% introduced their babies to complementary feeding before 6 months.

Figure 4: The reasons for introducing complementary foods before 6 months



From the figure above, the reasons for introducing complementary foods before 6 months include; the baby crying a lot given by 22%, work given by 38%, mother didn't have enough milk work given by 15%, illness given by 10%.

Table 5: The best practices of mothers towards complementary feeding among mothers with children below 24 months at Kihunda HC-III Sheema municipality

Responses	Frequencies	Percentage
Mothers are encouraged to feed their infants with locally available home-prepared foods which contain calories, proteins, minerals and vitamins.	32	40.0
Clean hands and utensils before feeding.	22	27.5
Wash the hands of children before feeding.	44	55.0
Cover foods after cooking.	15	18.8
Treatment/boiling of drinking water.	25	31.3
Use a feeding bottle to feed a child.	38	47.5
Prepare food ahead of time and freeze it in ice-cube trays or small individual containers for later use.	50	62.5
There is no need to add sugar or salt to foods.	29	36.3
Provide your baby with a variety of foods and let them decide how much they want to eat.	19	23.8
Start offering complementary foods once a day and slowly build up to 3 times a day.	25	40.0
Always supervise babies when they are eating.	28	27.5

From the table above, the best practices of mothers towards complementary feeding among mothers with children below 24 months at Kihunda HC-III Sheema municipality include; mothers are encouraged to feed their infants with locally available home-prepared foods which contain calories, proteins, minerals, and vitamins(40%), clean hands and utensils before feeding(27.5%), wash hands of children before feeding (55%), cover foods after cooking (18.8%), treatment/boiling of drinking water (31.3%), use feeding bottle to feed the child(47.5%), prepare food ahead of time and freeze it in ice-cube trays or small individual containers for later use (62.5%), there is no need to add sugar or salt to foods(36.3%), provide your baby with a variety of foods and let them decide how much they want to eat (23.8%), start offering complementary foods once a day and slowly build up to 3 times a day (40%) and always supervise babies when they are eating (27.5%).

DISCUSSION

Most of the participants were between the ages of 26-35 (47.5%) which was a result of the fact that this is the age bracket where most of the women are seriously engaged in giving birth. Most of the participants were married (81.2%) due to the fact most of the mothers who produce are married. The study findings on mothers' responses on how often should they breastfeed their baby indicated that 68.8% gave on demand. It indicated that mothers lacked access to or awareness of medical services. The role of mothers' knowledge towards complementary feeding among mothers with children below 24 months at Kihunda HC-III Sheema municipality includes; promotion of the child feeding practices given by 50%, it provides mothers knowledge about the appropriate time for the introduction of complementary feeding and total time for breastfeeding given by 63%, it prevents the child from malnutrition given by 65%, lack of knowledge and proper feeding practices contribute to higher childhood morbidity and mortality given by 75%, as much as mothers had some knowledge on the role of mothers' knowledge towards complementary feeding, few had awareness about the educative messages on variety, quantity, quality, consistency of complementary feeding, the effect of compromised complementary feeding on cognitive development and use of feeding bottles this also shows that the mothers had no access to this information from any source. To supplement the above, a study by Subedi *et al.* [25] on infant and young child feeding practices in Chepang communities in Nepal showed that, only 35% had knowledge about breastfeeding initiation within one hour, 62% had known about the exact time for exclusive breastfeeding and 81% mothers had knowledge about appropriate time for the introduction of complementary feeding and total time for breastfeeding. From the study findings, about 90% of the mothers initiated complementary feeding at the age of 6 months. This indicated that most of the mothers had knowledge about the right time for weaning their children [25]. This result is similar to that of Subedi *et al.* [25] who said that mothers who initiated breastfeeding within one hour were 37% and exclusive breastfeeding for up to 6 months was 82% and about 90% of the mothers who initiated complementary feeding at the age of 6 months. About the introduction of complementary foods before 6 months, the majority of the mothers 38% followed by 22% reasoned that it was done

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due to much work and crying of the baby respectively. This is an indication that mothers had not known clear reasons for weaning. These findings are in line with those of Hellen Keller International [26] which observed that a mother's nutritional knowledge is considered to have a great impact on the child's feeding practices as she has the capacity to take diet-related conscious decisions for the child. A study by Hellen Keller International [26] in Baitadi District, Nepal showed that 28% and 42.1% of mothers had the perception that children of 6-12 months should not be fed on eggs and flesh meats, this translated to only 2.1% and 4.4% of their children being fed on eggs and flesh meats respectively. The best practices of mothers towards complementary feeding among mothers with children below 24 months at Kihunda HC-III Sheema municipality include; mothers being encouraged to feed their infants with locally available home-prepared foods which contain calories, proteins, minerals, and vitamins(40%), clean hands and utensils before feeding (27.5%), wash hands of children before feeding (55%), cover foods after cooking (18.8%), treatment/boiling of drinking water (31%), use feeding bottle to feed child(48%), prepare food ahead of time and freeze it in ice-cube trays or small individual containers for later use (63%), there is no need to add sugar or salt to foods(36%), provide your baby with a variety of foods and let them decide how much they want to eat (23%), start offering complementary foods once a day and slowly build up to 3 times a day (40%) and always supervise babies when they are eating (24%). From the above findings, it can be deduced that there are so many reasons given by mothers as to why they introduce their complementary foods before 6 months but the major ones were mothers do such because of work and those babies who cry most of the time. This study is in agreement with the study carried out by Nankunda *et al.* [27] on the frequency of complementary feeding which showed that breastfed children 6-8months need 200kcal of complementary foods per day, those 9-11 months need 300kcal per day and those 12-23 months need about 550kcal per day. A key indicator of complementary feeding is the frequency of feeding. Because their stomach capacities are small infants and young children need to eat small frequent meals that are energy and nutrient dense every day [28, 29, 30, 31, 32, 33]. According to national guidelines on infant feeding breastfeeding infants 6-8 months should feed complementary foods 2-3 times away, while children 9-23 months should be given complementary foods 3-4 times away. Non-breast feed children should be fed at least 4 times away.

CONCLUSION

From the result of this study, mothers had low awareness of the educative messages on variety, quantity, quality, and consistency of complementary feeding, the effect of compromised complementary feeding on cognitive development, and the use of feeding bottles. This also shows that the mothers had no access to this information from any source. The reasons for introducing complementary foods before 6 months include; the baby was crying a lot and mothers believed that they were not getting satisfied by the breast milk which necessitated them to give them additional feeding like milk and porridges to make them stop crying. In addition to the above a big number of women also were engaged in different activities. Those mothers who were working could not be able to come back and feed their babies in time and due to that factor the babysitters could give them some complementary feeding since the child could be crying and even seemed hungry. The best practices of mothers towards complementary feeding among mothers with children below 24 months at Kihunda HC-III Sheema municipality include; The respondents still had poor practices on complementary feeding as indicated by their inadequate reasons of introducing their children to supplementary feeding. It is recommended that mothers should be encouraged to provide their babies with a variety of foods and let them decide how much they want to eat. Complementary feeding should be timely, adequate, and foods prepared and given in a safe manner.

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