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Knowledge and Practices on Infant and Young Child Feeding among HIV Infected and Uninfected Mothers in Vihiga County, Kenya

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Abstract

Background: Growth faltering among HIV exposed children is still a major health concern. Counseling on infant and young child feeding (IYCF) is one of the most important interventions to reduce mother-to-child transmission of HIV and assure optimal growth and survival of the HIV exposed child. The aim of this study was to establish the knowledge and practices on IYCF among HIV infected and uninfected mothers with children of age 3-23 months, attending MCH clinic at Vihiga Referral Hospital in Vihiga County, Kenya.

Methods: This was a cross-sectional study with mixed methods in data collection and analysis. A total of 93 randomly sampled mother-child pairs participated in this study; HIV infected (44.1%) and uninfected mothers (55.9%). Face-to-face interviews were conducted with mothers using a researcher-administered questionnaire while focus group discussions were later conducted among a proportion of mothers who had been interviewed.

Results: Mothers were less knowledgeable on; appropriate time that a HIV-infected mother should opt to stop breastfeeding (12.9%), replacement feeding as an option for the HIV-exposed children at 31.2% and on available alternative feeding options for <6 months HIV-exposed children (12.5%). Exclusive breastfeeding was poorly practiced (22.7%) while minimum dietary diversity was attained at 49.3%; the mean dietary diversity score was below ≥4 food groups. There was no significant association between maternal IYCF knowledge and practices.

Conclusion: Mothers were less knowledgeable on appropriate breastfeeding practice in the context of HIV infection and practiced mixed feeding among children below 6 months.

Keywords: Infant and young child feeding; Maternal Knowledge and Practices; HIV/AID

Abbreviations

ANC: Antenatal Clinic; IYCF: Infant and Young Child Feeding; MAD: Minimum Adequate Diet; MCH: Mother and Child; MDD: Minimum Dietary Diversity; MMF: Minimum Meal Frequency; WHO: World Health Organization

Background

In Kenya, the National Strategy on Infant and Young Child Feeding (2007-2010) provides a strong framework for accelerating action to improve IYCF practices that are proven to play a major role in enhancing the health, nutrition, survival and development of infants and young children. The Ministry of Health standard procedures recommend health education to mothers during pregnancy at the ANC (antenatal clinic), at delivery and after delivery at MCH clinics for both HIV infected and uninfected mothers. The ANC programme aims at assuring optimal growth of all children born including, prevention of HIV infection in women and from mother to child.

Among other challenges, more often, HIV infected mothers are left in a dilemma of choosing the right infant feeding option in trying to prevent HIV transmission to their infants while not exposing them to the risk of malnutrition and other illnesses due to lack of breastfeeding [1]. New HIV infections among newborns, and infants have remained unacceptably high, with mother-to-child transmission (MTCT) persisting as the most common route of new pediatric infections globally [2,3]. Although majority of HIV infected mothers opt for exclusive breastfeeding (EBF) for the first 6 months, research evidence has revealed mixed feeding among HIV exposed children. A study in Uganda [4] found that exclusive breastfeeding was uncommon among the HIV-infected women

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Table 1: Demographic and socio-economic characteristics of HIV infected and uninfected mothers and their children.

Index	HIV infected N=41		HIV uninfected N=52		Total N=93	
	N	%	N	%	N	%
Respondents age in years						
15-19	5	12.2	2	3.8	7	7.5
20-24	17	41.5	15	28.9	32	34.4
25-29	10	24.4	13	25	23	24.7
30-34	5	12.2	12	23.1	17	18.3
35-39	3	7.3	7	13.5	10	10.8
40-44	1	2.4	2	3.9	3	3.3
45-49	0	0	1	1.9	1	1.1
Marital status						
Married	36	87.8	45	86.5	81	87.1
Single	5	12.2	7	13.5	12	12.9
Level of education						
No formal schooling	0	0	1	1.92	1	1.1
Primary level	18	43.9	13	25	31	33.3
Secondary level	18	43.9	30	57.7	48	51.6
College/university	5	12.2	8	15.4	13	14
Employment						
Employed (formal or non-formal)	20	48.8	26	50	46	49.5
Not employed	21	51.2	26	50	47	50.5
Child's' age in months						
5-Mar	7	17.1	15	28.9	22	23.7
11-Jun	21	51.2	20	38.5	41	44.1
17-Dec	5	12.2	11	21.2	16	17.2
18-23	8	19.5	6	11.5	14	15.1
Childs' sex						
Male	22	53.7	22	42.3	44	47.3
Female	19	46.3	30	52.7	49	52.7

who had opted to breastfeed. At Kitale District Hospital, in Western Kenya it was found that 50% of the HIV-exposed infants were on replacement feeding (RF), 35% on EBF and 14% on mixed feeds [5]. The HIV infected and uninfected but exposed children are a high-risk group with special needs; the risk of malnutrition among these children requires regular nutritional assessment and early nutrition interventions [6,7]. Intervention strategies should aim at; pre and post-natal prevention of mother to child transmission (PMTCT) of HIV including maintaining appropriate weight gain in pregnancy, avoiding the risk of low birth weight and length and further, support for subsequent optimal growth for the child.

Counseling on infant feeding is one of the most important interventions to reduce mother-to-child transmission of HIV and assure optimal growth and survival of the HIV exposed child [8]. Awareness is an important step that is expected to influence change, cognizant of the fact that not all knowledge leads to appropriate behavioral changes. A study conducted in Malawi [9] indicated that there was a positive correlation between knowledge and correct practice. Another study [10] in Baitadi District, Nepal indicated 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. However, in Nigeria, it was found that maternal knowledge and awareness did not translate to practice of exclusive breastfeeding [11]. Similarly a study in Nairobi, Kenya indicated no significant relationship between maternal knowledge and practice [12].

Optimal infant and young child feeding practices rank among the most effective interventions to improve child health [13]. There is limited literature comparing IYCF knowledge and practice among HIV infected and uninfected African women and none has been conducted in Vihiga County. The findings of this study shall benefit stakeholders such as the Ministry of Health, Vihiga County, as well as other organizations concerned with infant and young child health in the context of HIV, as it highlights the gaps in IYCF knowledge and practices among mothers (HIV infected and uninfected) within the County.

Methods

Research design and location

The study adopted a comparative cross-sectional design applying mixed methods (qualitative and quantitative techniques) in data collection, analysis and presentation. The study was carried out at Vihiga Referral Hospital in Vihiga County, Kenya from 28th Sept 2015 to 11th Dec 2015. Vihiga referral hospital was selected for the study because of its location in the county and since it is the only referral hospital in the county hence provides services to the larger population of the county. Vihiga County borders Kakamega County to the North, Nandi County to the East, Kisumu County to the South and Siaya County to the west. It lies between longitudes 340 30´ and 350 0´ east of the prime meridian and latitudes 0105´ north. The Equator cuts across the southern tip of the County. It covers a total area of 201.0 km² with a total population of 618,742 persons according to 2015 projections; 280,013 males and 311,125 females [14] with a population density of 1,044 persons per square kilometer. It is one of the densely populated counties in Kenya and also one among areas with a slightly high prevalence of HIV/AIDS among women (5.3%) with about 41% of its population living below poverty level [15,16].

Study population

HIV infected and uninfected mothers with children of ages 3-23 months participated in this study; only mothers with ages 15-49 years who had attended the MCH clinic for at least 3 months were enrolled into the two arms of the study; arm A (HIV infected) and arm B (HIV uninfected) respectively. Those excluded included grandmothers and other relatives that were fostering the HIV exposed children whose mothers had passed on or were away from the child.

Sample size

The total sample size of the study was 93 mother-child pairs; a minimum of 30 subjects per arm was considered [18], however to increase the power of the study the sample was increased to 40 per each arm to give a minimum sample of 80 participants. The power effect size was calculated based on the primary outcome [17].

Sampling techniques

Purposive sampling was used to select the county since it has a slightly high HIV prevalence rate (6.0%) compared to the national prevalence of 5.6% and increasing poverty situation. The study adopted a double blind sampling technique to protect participant confidentiality and minimize researcher bias. The researcher engaged

Table 2: IYCF knowledge among HIV infected and uninfected mothers.

Aspect of IYCF knowledge assessed	HIV infected N=41		HIV uninfected N=52		Total N=93	
	n	%	n	%	n	%
Initiate breastfeeding within 30 minutes	33	80.5	38	73.1	71	76.3
EBF for six months	31	75.6	36	69.2	67	72
HIV infected mother continue breastfeeding until an adequate and safe diet is available	5	12.2	7	13.5	12	12.9
Mother to continue ARVs during breastfeeding	39	95.1	43	82.7	82	88.2
HIV infected child breastfeed for at least 2yrs	8	19.5	4	7.7	12	12.9
Replacement feeding for the HIV exposed	16	39	13	25	29	31.2
Alternative feeding options for HIV exposed children < 6 months	10	24.4	10	19.2	20	21.5
When is heated breast milk an alternative feeding option	20	48.8	29	55.8	49	52.7

the assistance of a hospital nutritionist within the MCH clinic-Nutrition department to recruit and code all mothers willing to participate in the study. Participants were coded as either eligible for enrollment into arm A or B; this was done by the nutritionist so as to blind both the researcher and the enumerators on the HIV status of the mothers. Systematic random sampling (at an interval of 3n) was used to select mothers into the study. On a daily basis, the first mother to be interviewed was selected by simple random sampling technique using a table of random numbers to select a number between 1 and the sampling interval of 3. The next respondent was selected by adding the sampling interval to the number selected. This procedure was used to select the rest of the mothers to be interviewed during the day. The same procedure was conducted on the subsequent days until the required sample size was attained over an 8-week period. Enrollment was continued until the arm with the least enrolment reached the target number of 40 participants. The nutritionist then provided the researcher with the coded list to group the mothers into the two arms of the study. The researcher then coded each participant's questionnaires for appropriate arm of the study before data entry.

Data collection instruments and procedures

One time face to face interviews were conducted with mothers within the hospital facility using a validated researcher-administered questionnaire which elicited information on: Maternal and child socio-economic and demographic characteristics; Maternal IYFC knowledge with focus areas including; appropriate breastfeeding including in context of HIV; replacement feeding and breastfeeding options for the HIV exposed < 6 months on ART prophylaxis; and complementary feeding and food groups. Maternal IYCF practices included early initiation of breastfeeding, exclusive breastfeeding from birth to six months, continued breastfeeding for at least one year, timely initiation of appropriate complementary feeds, dietary diversity and frequency of feeding.

To enhance the validity and reliability of the questionnaire, a pretest was conducted with 5 mothers who did not participate in the main study, but had similar characteristics as the study participants. During the pre-test, data was collected twice at an interval of three days from the same participants. A comparison was then made between the responses obtained from both interviews and correlation coefficient of 0.89 was achieved. This indicated adequate reliability of the questionnaire.

Data analysis and presentation

Data was analyzed using Statistical Package for Social Sciences (SPSS) version 20.0. Descriptive statistics including frequencies and percentages were generated for demographic and socio-economic characteristics of the study participants, as well as their knowledge and practices. Chi-square was used to determine the association between categorical data such as the IYCF knowledge and practices while t-test was used to determine significant differences on knowledge levels between HIV exposed and unexposed. Statistical significance was set at $p<0.05$. The focus group discussions were transcribed verbatim and content analysis conducted by categorizing into key pre-determined themes: Sources and importance of mother and child health care information; Social-cultural influences on maternal knowledge; Support for mother in child care; and Management of common child ailments.

Table 3: Comparison of IYCF knowledge between the HIV infected and uninfected mothers.

Variable	HIV-Infected mothers N=41	HIV-Uninfected mothers N=52	*T* test P value*
IYCF knowledge	Mean 6.73	Mean 6.17	
	(±1.45)	(±1.52)	0.865

*significant at *p* value ≤ 0.05.

Logistical and ethical considerations

Ethical clearance was obtained from the Kenyatta University Ethical Review Committee; ethical review number KU/R/COMM/51/472 and research permit was obtained from the Kenyan National Commission for Science, Technology and Innovation (NACOSTI). Voluntary, informed consent in the form of signatures or thumb prints was solicited from all participants. Those who declined to participate were excluded from the study. The participants' confidentiality and anonymity was ensured by use of codes as identification rather than names.

Results

A total of 93 mothers were enrolled and interviewed upon consenting to participate in the study. For qualitative data, focus group discussions were later conducted among mothers who had been interviewed.

Demographic and socio-economic characteristics of the participants

Socio-demographic characteristics included age in years, educational level, and marital status of the respondents (Table 1). A higher proportion of the mothers were within ages 24-29 years; of whom 65.9% were HIV infected mothers compared to HIV uninfected mothers at 53.9%. Majority (87%) of the respondents were married, while 23% were single mothers. A higher proportion (57.7%) of the HIV uninfected mothers than HIV infected mothers 43.9% had

Table 4: IYCF practices among HIV infected and uninfected mothers.

Aspect of IYCF knowledge assessed	HIV exposed N=Varied		HIV unexposed N=Varied		Total N=Varied	
	n	%	n	%	n	%
Initiate breastfeeding within 1 hour of birth	37	90.2	42	80.8	79	84.9
Exclusive breastfeeding for 6 months	3	42.9	2	13.3	5	22.7
Minimum diet diversity	15	44.1	20	54.1	35	49.3
Minimum meal frequency	25	73.5	27	73	52	73.2

Table 5: Association between maternal IYCF knowledge and practices.

IYCF Practice	IYCF knowledge score	Chi square P value*
Early initiation breastfeeding		
>1 hour	5.79 (±1.89)	0.135
Within I hour	6.53 (±1.41)	
Minimum dietary diversity		
< minimum 4 foods	6.47 (±1.40)	0.273
≥ minimum 4 foods	6.33 (±1.67)	
Minimum meal frequency		
Not consumed	6.54 (±1.37)	0.435
Consumed	6.34 (±1.60)	
Minimum acceptable diet		
Not a achieved	6.52 (±1.41)	0.826
Achieved	6.47 (±1.37)	

*significant at p value ≤ 0.05.

secondary school education level. Similarly more of HIV uninfected mothers at 15.4% had post-secondary education compared to 12.2% of HIV infected. Those who had completed primary school were (33.3%); majority being the HIV infected mothers at 43.9% compared to 25.0% of HIV uninfected mothers. About half (49.5%) of the respondents were engaged in some kind of employment either formal or non-formal; of whom 50.0% were HIV uninfected mothers and 48.8% HIV infected mothers.

Majority (44.1%) of the children were between the ages 6-11 months, with a higher proportion being of HIV exposed children at 51.2% compared to 38.5% of HIV unexposed children. There were more female (52.7%) children than males 47.3%. A slightly higher proportion of the HIV exposed children were male 53.7% than female 42.3%. Among the HIV unexposed children the female were more at 57.7% than male 46.3%.

Maternal knowledge on infant and young child feeding

Overall, mothers were fairly knowledgeable on appropriate Infant and Young Child feeding practices (Table 2). On the aspect that tested whether a mother knew when to initiate breastfeeding, more HIV infected mothers (80.5%) than HIV uninfected mothers at 73.1% agreed that mothers should initiate breastfeeding within 1 hour of birth. More HIV infected mothers 75.6% stated that exclusive breastfeeding should continue for 6 months compared to 69.2% of HIV uninfected mothers. Both the HIV infected at 12.2% and HIV uninfected mothers at 13.5% were less knowledgeable on the aspect that tested on appropriate time that an HIV infected mother should opt to stop breastfeeding.

A higher proportion of HIV infected mothers at 95.1% compared to 82.7% of HIV uninfected mothers were more knowledgeable on the aspect that a HIV infected mother should continue with ARVs during breastfeeding. More HIV infected mothers (19.5%) compared to HIV uninfected mothers at 7.7% knew that HIV infected child should be breastfed for 2 years and beyond. Both HIV infected mothers and uninfected mothers at 39.0% and 25.0%, respectively, were less knowledgeable on the aspect of replacement feeding as an option for the HIV exposed children. Similarly both the HIV infected mothers at 24.4% and HIV uninfected mothers at 19.2% were less knowledgeable on the available alternative feeding options for <6 months HIV exposed children.

Information from the focus group discussion pointed out that the main source of knowledge on child care was the health facilities through MCH clinics and community health volunteers. Majority of mothers reported that they attended the ANC clinic session since they valued the information they received during the visits. One mother said "*I made sure that I attended my entire ANC clinic sessions because I knew the nurses were to give us important health talks.*" (*P5G3, 2015*). However, mothers reported that there was little information on nutritional care of children, provided during the ANC attendance; others reported that they had never known that nutrition counseling services were available at the MCH clinic. Another participant said ,"*the nutritional information is little, I have never known that I can get additional nutritional counseling if I needed, I always ask the nurse attending my child if I need any further guidance on child care.*" *(P2G1, 2015).*

Knowledge scores among the HIV infected and uninfected mothers

Mothers were scored on the 12 questions as shown in Table 3. Each correct response scored one point while an incorrect response was not awarded any score. A total score was calculated for each participant based on the right answers. Therefore, each mother could score a maximum of 12 points and a minimum of 0 points. Mothers had a fair level of knowledge on IYCF; the mean maternal knowledge score for all mothers' based on individual mother's total score was average; at 6.73 with a standard deviation of ±1.45 among the HIV infected mothers and 6.17±1.52 among the uninfected mothers.

A comparison of the two groups of mothers, indicated no significant difference on IYCF knowledge level between the HIV infected and uninfected IYCF (p=0.865).

Maternal Infant and young child feeding practices

Majority of the mothers initiated breast feeding within one hour of birth, with slightly more HIV infected mothers at 90.2% and HIV uninfected mothers at 80.8%. Exclusive breastfeeding was poorly practiced at 22.7% with a slightly higher proportion of HIV infected mothers at 42.9% compared to 13.3% HIV uninfected mothers. More HIV unexposed children at 54.1% than the HIV exposed children at 44.1% achieved recommended minimum diet diversity. Majority of the children from both arms (73.5% of HIV exposed and 73.9% of HIV unexposed), achieved the minimum meal frequently.

Findings from the focus group discussions noted that mothers' practice of child feeding was poor; even though they had some understanding of meal balancing, some ignorantly did not provide protein foods to their babies; a mother said "*my baby has no teeth, even if I was to chew meat first before I gave him, can he digest it?*" (*P3G4, 2015*). They also reported that practicing good nutrition was not practical since they felt they are food insecure and providing a balanced diet is not affordable. Similarly exclusive breastfeeding

was poorly practiced; one mother said though she was willing, it was challenging for her to practice exclusive breastfeeding due to hard economic situations. Another participant reported that "*There are times when a mother has not fed well so there is no production of adequate breast milk and would hence not breastfeed the child*" (*P4G4, 2015*). Because of the cited hard economic state mothers said they had to go out in search of casual jobs to enable them provide food for their families; this only meant that they had to leave their babies under another person's care with porridge or tea.

Association between maternal knowledge on IYCF and their practices

Chi-square test was used to test for association between maternal knowledge IYCF and their practices (Table 4). The following aspects of IYCF practices met the statistical threshold and were examined; early initiation of breastfeeding (≤1hr), minimum dietary diversity; minimum meal frequency; and minimum adequate diet. The results revealed no significant association between maternal IYCF knowledge and their practices

Discussion

This study indicated no significant difference in levels of IYCF knowledge between the HIV infected mothers and the uninfected mothers. This could be attributed to the fact that the main source of information was the MCH clinics and that majority of them had adequately attended the WHO recommended four ANC sessions The focus group discussions reported that the main source of maternal knowledge on general child care was the health facility through MCH clinics, and at community level through the Community Health Volunteers. Other studies conducted in Kenya that assessed maternal knowledge have also reported that the mother's main source of information on child care for mothers and other care givers is the health facilities [19,20]. However mothers reported during the FGD sessions that there was little nutritional information provided during the ANC visits. Some mothers reported that they had never known that nutrition counseling services were available at the MCH clinic. This was a similar finding to a study on IYCF knowledge conducted in Nairobi, Kenya [20]; mothers suggested the inclusion of complementary feeding information during ANC sessions.

Majority of the mothers understood very little about breastfeeding in HIV context and consequently exclusive breastfeeding was poorly practiced; mixed feeding is a proxy indicator to MTCT of HIV. It was worrying that less than a quarter of the mothers knew about the available alternative feeding options for HIV exposed children under 6 months. A recent study in Bomet, Kenya revealed that health workers had conflicting and inappropriate information on breastfeeding in HIV context [21]. This could be an indicator that the same misperception is conveyed to the mother during counseling. Mothers also cited hard economic situations to be the major challenge to exclusive breastfeeding. Low rates of exclusive breastfeeding have also been reported by other studies done in the recent past; in the informal settlement in Nairobi, EBF for the first six months was rare as only about 2% of infants were exclusively breastfed for six months [22,20]. In Nyando District Kisumu County, Kenya, the prevalence was also low at 35% [23]. The promotion and support of exclusive breastfeeding is a global priority because of the health, growth and developmental benefits it confers to children and community in general [24].

In this study, EBF was higher among the HIV exposed children; this is similar to finding of a study in Northwest Ethiopia [25] and in Kenya [5]. The recent guidelines by WHO 2010 [26] recommends that HIV-infected mothers and whose infants are HIV- uninfected or of unknown HIV status, should exclusively breastfeed for the first six months; breastfeeding should only stop once a nutritional adequate and safe diet without breast milk can be provided. Exclusive breastfeeding for the first six months is also recommended in case of HIV-infected child. Research evidence of mixed feeding among HIV exposed infants <6 months poses a worrying tendency due to the fact that mixed feeding during the first six months has been associated with increased risk of MTC HIV transmission. Though research evidence have revealed that it's difficult to achieve exclusive breastfeeding in many African settings due to family and cultural pressure, [27,28], high rate of exclusive breastfeeding have been achieved in some settings where mothers were provided with intensive counseling, education and support services [29,12].

A cross sectional study of 235 HIV-infected mothers in Uganda found that exclusive breastfeeding was uncommon among the HIV-infected women who had opted to breastfeed [4]. Only 8.5% of the mothers opted for replacement feeding however about 20% of the infants less than 6 months were on exclusive breastfeeding with the majority being on complementary feeding and breast milk. The author recommended that further efforts are needed to optimize the infant feeding counseling and increase feasibility of the recommendations for either exclusive breastfeeding or replacement feeding. Another study conducted in Bomet County, Kenya [21] that explored the feeding practices of HIV-exposed infants who are 0-5 months of age also gave similar recommendations. The findings from these studies indicate the difficulties in adherence to the recommended options of feeding by HIV positive mothers in Sub-Africa.

Generally, children in this study were fed on a variety of foods; however there was low consumption of protein (flesh) foods with as low as 1% consuming iron rich foods. A higher proportion of HIV unexposed than HIV exposed fed on diverse diets. Dietary diversity has long been recognized as a key element of high quality diets and increasing the variety of foods consumed is thought to ensure adequate intake of essential nutrients, thus promote good health and nutrition [30]. Majority of the children in this study ate meals mainly prepared from grains, tubers and roots like porridge, *ugali*, rice, potatoes and plantain. This is comparable to the Kenya national figures as reported in Kenya Demographic Health Survey 2014-15 [31]. Other studies have also reported that grains and tubers provide the bulk of meals consumed by children in low income communities [32,33]. A recent study in the county also reported that children consumed more of the cereals as compared to proteins, care givers fed children on porridge from maize flour because of convenience and affordability, as the meal would be cooked once and did not need many ingredients [34]. This can be explained by the fact, that being a low income community, the mothers would go for the cheaper foods which are usually grains/roots/tubers and their products and the fact that cereals form the staple food of most communities.

Consumption of iron-rich foods (meats) was also low; inadequate consumption of important minerals including iron has also been reported in other studies conducted within the county [35,34]. Being a resource poor community, foods of animal origin are most likely out of the financial reach for the majority of the households. The consumption of proteins was highest from dairy products mostly milk, concurring with the study findings of a study done in Batudu District

in Nepal and another in Gitega, Burundi; both studies reported that children received their protein mainly form milk [10,33]. Dry fish mostly herrings and tilapia provided protein for most children in this study. This could be attributed to the proximity of Vihiga County to the Lake Victoria hence easy accessibility to herrings and dried fish which are also cheaper and affordable alternatives to fresh fish. Egg consumption was low and this could be attributed to cultural beliefs; the large perception by the community that egg consumption interferes with speech development and walking [36,35]. The mean dietary diversity among the study children was below the recommended ≥4 food groups [37]. These results compared well with results of a study conducted within the county that indicated a low dietary diversity score among children 6-23 months of age [35].

From the FGD discussions, a mother had also reported that they choose to spare some extra food for the children even when other family members would have to miss a meal; subsequently, majority of children in this study were fed a minimum number of times as recommended for age [37]. These findings were in agreement with those of studies conducted in Kibera, Nairobi and in Western Kenya [38,36]. A slightly higher proportion of HIV exposed consumed more meals compared to HIV unexposed children. Frequent meals are required to ensure the child receives enough energy for their daily requirements [39].

Limitations of the Study

The study did not observe the IYCF practices but relied on information reported by the mothers and this could introduce recall bias therefore results were interpreted with caution.

Conclusions

IYCF knowledge was on the whole average among mothers. Gaps were identified in appropriate breastfeeding practice in the context of HIV infection including lack of information on the available alternative feeding options for HIV exposed child <6months. Overall, maternal knowledge on IYCF did not influence their practice and there was no significant difference of knowledge levels between the HIV infected and uninfected mothers. IYCF practice was generally appropriate; in terms of introduction of solids, semi-solids and soft foods to children 6-8 months and minimum meal frequency. Dietary diversity was fair because of the limited socio-economic capability of the respondents to access and afford a variety of foods.

Recommendations

The health care personnel in Vihiga County should improve on dissemination of information and promotion of existing strategies on breastfeeding in the context of HIV including awareness of the available alternative feeding options for HIV-exposed children <6months. HIV infected and breastfeeding mothers should be encouraged and counseled for ARVs adherence and where necessary support for replacement feeding for those who may choose not to breastfed.

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