

Full Length Research Paper

Challenges of infant feeding option of babies born of HIV positive mothers within the Buea Health district, Fako Division, SW Region Cameroon

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Challenges of infant feeding options for babies born of HIV positive mothers was carried out to identify difficulties encountered with taking care of babies born of HIV positive mothers who must eat in order to grow. The feeding options may be hampered by ignorance, poverty and inability to care for the materials used in the process. A successful feeding option with no breast feeding is one way of curbing mother to child transmission (MTCT) of HIV /AIDS. The study looked at challenges from the mother or significant others' point of view taking into consideration knowledge, attitudes and practices. A cross-sectional study aimed at exploring and explaining the variables was used. The study population was made up of 112 women in three facilities using convenient sampling and a structured questionnaire adapted from the World Health Organization's (WHO's) approach. Data was analysed using Microsoft Excel and Stata statistical software version 10 were used. Awareness on the prevention of MTCT of HIV ($P<0.003$), water source ($P<0.002$) and ownership of a fridge (AOR=3.1, $p<0.01$) were significantly associated with a safe feeding option. Mixed feeding (64%) was still highly practiced. Feeding the mother (37%), money (33%), frequent sucking by baby (20%) and adequate hygienic conditions (36%) were challenges of a safe feeding option. Strengthening infant feeding counselling and encouraging health promotion interventions at all levels are essential to curb vertical transmission and enhanced child survival.

Keywords: HIV/AIDS, MTCT, infant feeding options, challenges

INTRODUCTION

Mother-to-child transmission of HIV/AIDS is a serious public health still affecting children. In 2007, a total of 33.2 million people were living with HIV, among which were 15.4 million women and 2.5 million children (Park, 2009). In these numbers, some of the children got infected by MTCT see from the infections and a total of 1.7 million adults and 330 000 children died from the disease. In 2008, an estimated 430 000 children were newly infected and over 90% through mother-to-child transmission (WHO, 2010).

It has been documented that among HIV+ women who attend ANC, 30% used exclusive breastfeeding, 34.2% practice either exclusive breastfeeding or exclusive replacement feeding while 65.8% still use mixed feeding despite its risk of mother-to-child transmission of HIV (MOH,2008). The same document reveals that the risk of mother-to-child transmission of HIV during pregnancy

stands at 5-10%, during labour and delivery 10-20%, during breastfeeding 5-20%, but the rate for breastfeeding up to 6 month is 25-35% while the rate for breastfeeding up to 18-24 months stands at 30-45%.

The prevention of mother-to-child transmission is done through the four components below:

1. Primary prevention of HIV among youths and women of childbearing age through: promoting safe and responsible sexual practices; facilitating access to condoms; carry out early diagnosis and treatment of STIs; render HIV testing and counselling largely available and provide appropriate counselling to HIV-negative women.

2. Prevention of unwanted pregnancies among HIV-infected women through: provide family planning services; promote access to reliable and effective contraception; and promote safe sexual practices particular-

ly the systematic use of condoms

3. Prevention of MTCT through: providing HIV counselling and testing; providing prophylaxis and antiretroviral treatment; promote good delivery practices and provide advice on the safe feeding of infants

4. Provide treatment, management services and support to HIV-infected women with their children and families through: treatment, care and support to women living with HIV and their families (MOH, 2008)

Statement of problem

Feeding babies is often an assignment of mothers and significant others around the mothers. The easiest method of feeding neonates is breast feeding which may be disturbed by the condition of the mother. The infection with HIV/AIDS is one of the conditions that stop a mother from breast feeding. When this happens, alternative ways of feeding or other feeding options are sought. The alternative method may be very challenging causing the mother to revert to breast feeding despite the risk of exposure of the baby to HIV/AIDS. These challenges may even include the lack of knowledge of MTCT, or better feeding options; poor practices in feeding options and attitudes towards the prevention methods in place. All these may culminate into the practice of prolong breastfeeding for up to 24 months and more and even among HIV+ mothers in the community, which may increase the risk of transmission of HIV to the baby. There may also be erratic water, electricity, and gas supply disturbance posing as other challenges.

Research question

What is the level of knowledge, attitudes and practices of HIV+ mother on infant feeding options?

What are some of the challenges experienced when practicing an infant feeding option?

Research Hypotheses

Adequate knowledge on the transmission and prevention of mother-to-child transmission of HIV may result to the practice of a safe infant feeding option.

Challenges when practicing a safe feeding option may result to mix feeding.

Objectives:

To describe knowledge, attitudes, and practices of HIV+ mothers on infant feeding options

To identify actual or potential challenges encountered with the feeding option.

Literature

Mother -to -child transmission of HIV is one of the methods of HIV/AIDS transmission among sexual contact such as unprotected sexual intercourse, anal or oral sex; use of intravenous drugs and sharp contaminated objects like syringes and razor blades and transfusion of contaminated blood. In MTCT it could be from an infected mother to her child during pregnancy, labour and delivery, and breastfeeding.

Factors promoting the spread of HIV in Cameroon

Many factors promote HIV/AIDS transmission. These factors may be related to knowledge and information, for example ignorance of HIV status joint with barriers to education on reproductive and sexual health and HIV/AIDS; factors related to social and economic situation: poverty creates a conducive environment to the spread of the infection through limited access to health services, lack of bargaining power, and priority giving to survival through risk behaviour.

Mother-to-child transmission

HIV can be transmitted from the mother to her child during pregnancy, labour and delivery, and breastfeeding period. The risk of transmission during pregnancy with no intervention is 5-10%, during labour and delivery is 10-20%. However the rate of transmission without breastfeeding is 15-30%, but with breastfeeding up to six months the rate stands at 25-35% and with breastfeeding up to 18-24 months the rate stands at 30-45 % (MOH, 2008). Therefore the majority of transmission occurs during labour and delivery but the scenario is worst during breastfeeding for up to 24 months with no intervention.

The role of the health personnel in PMTCT

The healthcare provider has a major role as far as vertical transmission of HIV is concern. These roles includes; providing diagnosis and clinical care to those who need it, inform, educate, motivate and counsel people to practice safe sex, go for voluntary counselling and testing; motivating communities to develop capacity to inform, educate, motivate and support each other to adopt safe sexual practices and care for the sick including safe and adequate infant feeding; and the fight against stigma and discrimination associated with feeding options practiced by HIV-infected women.

MATERIALS AND METHODS

The study was a cross-sectional descriptive study that

involved HIV+ mothers of less than twenty-four months postpartum receiving care in the three healthcare facilities used. The study used the quantitative research technique: An interview with a structured questionnaire was used in the healthcare facilities.

The study was carried out among HIV+ mothers receiving care and treatment in the selected healthcare facilities. Only HIV+ pregnant woman or HIV+ mother below 24 months postpartum receiving care or treatment in the selected site were included in the study. A non-probability sampling method was adopted. It entailed the systematic recruitment of volunteers as they come to selected sites to seek services (convenience sampling) but all volunteers met with the inclusion criterion. The sample size was calculated using the formula in studies designed to measure a characteristic in terms of a proportion (Eng, 2003.)

$$N = \frac{4 \times (Z_{crit})^2 \times p(1-p)}{D^2}$$

Where

N=minimum sample size

P=proportion of HIV+ pregnant women aged 15-45 with adequate knowledge on infant feeding. We do not have an estimate for this proportion, so we use 50% which is the proportion that would yield the maximum sample size needed.

Z=standard normal deviation for 95% Confident interval (Z_{crit}) =1.96

d=degree of precision=0.1

$$n = \frac{4 \times 0.5 \times 0.5 \times 1.96 \times 1.96}{0.1 \times 0.1}$$

N=385 HIV Women.

Data was collected in two phases, the first with the use of a structured questionnaire for the HIV+ women at the health facilities. The 55-variables questionnaire had both closed and open-ended questions in the following sections: Socio-demographic data; housing; finance; obstetric history; knowledge, attitude and practices and challenges for using a feeding option. The questionnaire was pre-tested in an Integrated Health Centre and readjusted to suit the objectives of the study. The main sections of the guide were knowledge and awareness and challenges encountered. The questionnaire was drawn up based on a questionnaire published by the World Health Organization and adapted for the study (Wilke, 2004)

(www.who.int/reproductivehealth/publications/RHR_01_12_chap6.en.html)

Data was analysed using the univariate and logistic regression to identify socio-demographic, environmental, economic, level of awareness, and cultural predictors of a safe infant feeding option. A univariate analysis was first carried out to evaluate individual predictors. The outcome or dependent variable used in the study was safe or unsafe infant feeding option. Variables concerning knowledge were further categorized as having adequate or inadequate knowledge.

Simple descriptive statistics were used to show the frequency distribution of various predictors, and measures of central tendency. Bivariate analysis was used to investigate associations between the independent variables and the dependent variable. In the model p-values, odds ratio, and confidence interval were estimated for predictor variables. In a second step good predictors identified during the Bivariate analysis were entered in a multiple logistic regression analysis to identify key predictors of a safe infant feeding option. A P-value of below 0.05 was set as the level of significance difference.

RESULTS

One hundred and twelve HIV- infected women were recruited in the quantitative arm. Their ages ranged from 21 to 46 years with a mean of age of 32.17 years

(Table 1). The highest proportion of the respondents was of the age group 25-34 years (58.04%) followed by 35-44 years (33.935). Close to 80% were married (41.07%) and single (39.29%). Fifty –four (48.21%) had attained primary education and thirty-five (31.25%) were in secondary school. While 58.56% were born in an urban area, 41.445% were delivered from a rural zone. English (44%) and Pidgin (34%) were mostly spoken at home. Close to 42% were Catholics while 245 and 23% were respectively from the Pentecostal and Presbyterian denominations

Concerning environmental factors 67(59.82) currently stay in an urban setting while 45(41.18%) reside in a rural area. Close to half 45.5% live in plank houses while 42.8% live in a brick house. More than 70% had a kitchen (75.4%) and toilet (72.3%) but ownership of a fridge was low (31.2%). About half 45.5% use communal taps while 31.2% had taps in their houses. Firewood or saw dust (51.3%) and cooking gas/ kerosene were mostly use to boil water. More than half, 60.7% live with immediate family members and 58% live with two to four people in the household (Table 2).

Public transport (91.96%) was the most used means of transport to the hospital. Less than 50% spend more than 500FCFA to get to the hospital also more than 50% had salaries less than 50 000FCFA. Forty-six (41.07%) hadn't any financial support, while 37.5% and 13.38%, were supported by spouse and parents respectively (Table 3).

Knowledge, attitudes and practices

Eighty-two (73.21%) of respondents had insufficient knowledge on mother-to-child transmission of HIV for just thirty (26.79%) who had adequate knowledge (Table 4).

Table 1: Socio-demographic characteristics of respondents (n=112)

Variable	Categories	Frequency	Percentage (%)
Age	15-24	8	7.14
	25-34	65	58.04
	35-44	38	33.93
	>45	1	0.89
Range 21-46	, Mean= 32.17,	SD=5.58	
Marital status	Single	44	39.29
	Divorce	7	6.25
	Married	46	41.07
	Widow	15	13.39
Education	No formal education	1	0.89
	Primary	54	48.21
	Secondary	35	31.25
	High school	7	6.25
	Professional school	10	8.93
	University	5	4.46
Place of birth	Urban(city)	65	58.56
	Rural(country side)	47	41.46
Language used at home mostly	English	49	44.14
	French	7	6.31
	Pidgin	38	34.24
	Dialect	17	15.31
Religion	No religion	2	1.79
	Catholic	47	41.96
	Presbyterian	26	23.21
	Baptist	10	8.93
	Pentecostal	27	24.11

Table 2: Environmental characteristics of respondents (n=112)

Variable	Categories	Frequency	Percentage (%)
Current residence	urban(city)	67	59.82
	rural(country side)	45	41.18
Type of house	brick house	48	42.86
	mud –tarch house	3	2.68
	plank house	51	45.54
	self-contain house	10	8.93
	Water source	tap in the house	35
	tap outside	18	16.07
	communal tap	51	45.54
	stream, river , well	7	6.25
	spring, borehole	1	0.89
Toilet facility	yes	81	72.32
	no	31	27.68
Fridge in the house	yes	35	31.25
	no	77	68.75
Kitchen	yes	89	79.46
	no	23	20.54
Waste disposal	dump in stream /river/pit	35	31.25
	community waste dump	20	17.86
	council removes it	57	50.89
Energy use	electricity	3	2.70
	kerosene/gas	51	45.95
	firewood/sawdust	57	51.35
People living with respondent	Immediate family member	68	60.71
	others	44	39.29
Number of people	2-4	65	58.04
	5-7	34	30.36
	8-10	7	6.25
	>11	6	5.36

Table 3: Financial characteristics of respondents (n=112)

Variable	Categories	Frequency	Percentage (%)
<i>Means of transport to hospital</i>	<i>public transport</i>	103	91.96
	<i>own transport</i>	6	5.36
	<i>walk</i>	3	2.68
<i>Cost</i>	<i>100-500 FCFA</i>	63	56.25
	<i>500-1000</i>	19	16.96
	<i>1000- 1500</i>	6	5.36
	<i>1500 -2000</i>	8	7.14
	<i>>2000</i>	16	14.29
<i>Financial support</i>	<i>self</i>	46	41.07
	<i>husband/boyfriend/fiancée</i>	42	37.50
	<i>parent</i>	15	13.39
	<i>grand parents</i>	1	0.89
	<i>siblings</i>	7	6.25
	<i>friends</i>	1	0.89
<i>Monthly salary</i>	<i>< 15000 FCFA</i>	14	12.50
	<i>15000-50 000</i>	46	41.07
	<i>51000-100 000</i>	44	39.29
	<i>101000-150 000</i>	7	6.25
	<i>151000-200 000</i>	1	0.89
	<i>> 200 000</i>		

Table 4: Knowledge on mother-to-child transmission of HIV (N=112)

Variable	Categories	Frequency	Percentage (%)
<i>Knowledge on transmission</i>	<i>adequate</i>	30	26.79
	<i>inadequate</i>	82	73.21
<i>Total</i>		112	100.00

For the prevention of mother-to-child transmission of HIV 73.21% against 26.79% had adequate and inadequate knowledge respectively for prevention during pregnancy and during delivery while during the breastfeeding period 44.64% had adequate knowledge against 55.36% who had insufficient knowledge (Table 5).

For the risk of early replacement feeding, sixty-nine (61.61%) had sufficient knowledge against 38.39% who had inadequate information (Table 6).

Close to 61% of respondents revealed that for an HIV-infected mother who breastfeed, the baby will be

infected (60.71%) while 20.57% of others said she lacks money to buy artificial fed and 10.71% acknowledge that she will be suspected of HIV if she do not breastfeed (Table 7).

One hundred and four (92.86%) were of the opinion that HIV-infected women should bear children for it is their right (52.68%) while 40.18% said it is up to the woman (Table 8).

Dialogue about mother-to-child transmission of HIV was mostly between the health worker (58.93%) and the sister (11.61%) (Table 9).

Table 5: Knowledge on prevention of mother-to-child transmission of HIV

Variable	Categories	Frequency	Percentage (%)
Prevention during pregnancy	adequate	82	73.21
	inadequate	30	26.79
Total		112	100.00
Prevention during delivery	adequate	82	73.21
	inadequate	30	26.79
Total		112	100.00
Prevention during Breastfeeding period	adequate	50	44.64
	inadequate	62	55.36
Total		112	100.00

Table 6: Knowledge on risk of replacement feeding

Variable	Categories	Frequency	Percentage (%)
Knowledge on risk of replacement feeding	adequate	69	61.61
	inadequate	43	38.39
Total		112	100.00

Table 7: Perceptions of respondents on an HIV+ mother who breastfeed

Variable	Categories	Frequency	Percentage (%)
opinions	Baby will be HIV infected	68	60.71
	Lack of money for formula	23	20.57
	Baby can die	4	3.57
	She will be suspected of HIV if she doesn't breastfeed	12	10.71
	Don't know	5	4.46
	TOTAL		112

Table 8: Opinion on why HIV+ mothers should bear children (n=112)

Variable	Categories	Frequency	Percentage (%)
opinion	yes	104	92.86
	no	8	7.14
TOTAL		112	100.00
Reasons	A waste of time ,baby will get HIV	7	6.25
	Increase number of orphans		
	It is her right	1	0.89
	It is up to her		
		59	52.68
		45	40.18
TOTAL		112	100.00

Table 9: Discussion about mother-to-child transmission of HIV (N=112)

Variable	Categories	Frequency	Percentage (%)
Discussion about mother-to-child transmission of HIV	Health worker	66	58.93
	Sister	13	11.61
	Brother	2	1.79
	spouse/partner	5	4.46
	mother	1	0.89
	father	2	1.79
	peer/friend	11	9.82
	religious leader	2	1.79
	community member	10	8.93
	Total		112

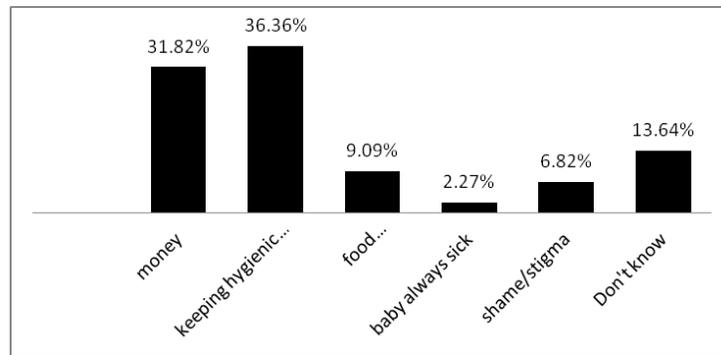


Figure 1: Challenges of replacement feeding.

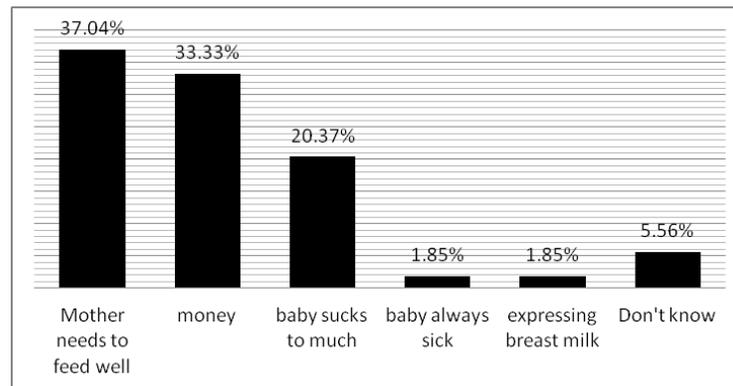


Figure 2: Challenges of exclusive breastfeeding

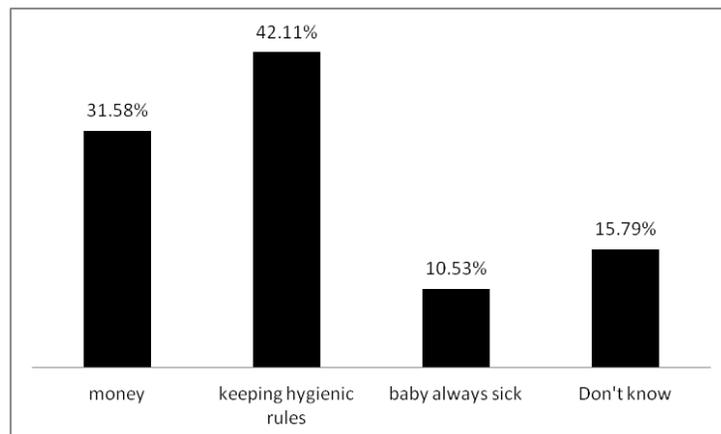


Figure 3: Challenges of practicing Mixed Feeding.

Challenges of each feeding method

Keeping hygienic rules (36.36%) and money (31.82%) were the main challenges of replacement feeding (Figure 1).

Sustaining mother's nutritional status (37.04%), money (33.33%), and the fact that baby sucks too much (20.37%) were the major challenges of exclusive breastfeeding

Baby's sickness (10.53%) differentiates the challenges of mixed feeding from replacement feeding (Figure 2,3).

There was no association between socio-demographic variables and a safe feeding option ($p > 0.05$) (Table 10).

There was a statistical significant difference between Water source ($p < 0.002$) and availability of a fridge ($p < 0.01$) and the use of a safe infant feeding option (Table 11).

Other factors that showed no difference were: type of house, availability of toilet, kitchen, energy use, waste disposal and number of people living per family.

Knowledge on the prevention of mother-to-child transmission of HIV during pregnancy ($p < 0.003$),

Table 10: Bivariate analysis of association between socio-demographic variable and feeding option practiced.

Variable	Categories	Safe n (%)	Unsafe n (%)	Total (%)	P-value
Age	15-24				0.41
	25-34	5(11.90)	3(4.29)	8(7.14)	
	35-44	23(54.76)	42(60.00)	65(58.04)	
	>45	14(33.33)	24(34.29)	38(33.93)	
		00(00)	1(1.43)	1(0.89)	
Marital status	Single				0.61
	Divorce	18(42.86)	26(37.14)	44(39.29)	
	Married	3(7.14)	4(5.71)	7(6.25)	
	Widow	14(33.33)	32(45.71)	46(41.07)	
		7(16.67)	8(11.43)	15(13.39)	
Education	No formal education	1(2.38)	0(00)	1(0.89)	0.50
	Primary	19(45.24)	35(50.00)	54(48.21)	
	Secondary	12(28.57)	23(32.86)	35(31.25)	
	High school	4(9.52)	3(4.29)	7(6.25)	
	Professional school	3(7.14)	7(8.93)	10(8.93)	
	University	3(7.14)	2(2.86)	5(4.46)	
Place of birth	Urban(city)				0.43
	Rural(country side)	26(63.41)	39(55.71)	65(58.56)	
	2	15(36.59)	31(41.44)	46(41.44)	
religion	No religion				0.08
	Catholic	2(4.76)	0(00)	2(1.79)	
	Presbyterian	17(40.48)	30(42.86)	47(41.96)	
	Baptist	7(16.67)	19(27.14)	26(23.21)	
	Pentecostal	2(4.76)	8(11.43)	10(8.93)	
		14(33.33)	13(18.57)	27(24.11)	
TOTAL		N=42(37.50%)	N=70(62.50%)	N=112(100.00)	

Table 11: Bivariate analysis of association between environmental factors and feeding option used

Variable	Categories	Safe n (%)	Unsafe n (%)	Total (%)	P-value
Water source	tap in the house				<u><0.002s</u>
	tap outside	16(38.10)	19(27.14)	35(31.25)	
	communal tap	2(4.76)	16(22.86)	18(16.07)	
	stream, river , well	18(42.86)	34(48.27)	52(46.43)	
	spring, borehole	6(14.29)	0(0.00)	6(5.36)	
		0(0.00)	1(1.43)	1(0.89)	
Availability of Fridge	yes				<u><0.01</u>
	no	19(45.24)	16(22.86)	35(31.25)	
		23(54.74)	54(77.14)	77(68.75)	
TOTAL		N=42(37.50%)	N=70(62.50%)	N=112(100.00)	

prevention during breastfeeding ($p < 0.02$) and the risk of early replacement feeding ($p < 0.02$) were significant

determinants of a safe infant feeding options (Table 12).

Table 12: Bivariate analysis of relationship between knowledge and feeding option practiced.

Variable	Categories	Safe n (%)	Unsafe n (%)	Total n (%)	P-value
prevention during pregnancy	Adequate	24(57.14)	58(82.86)	82(73.31)	<u><0.003</u>
	Inadequate	18(42.80)	12(17.14)	30(26.79)	
Prevention during the breast feeding period	Adequate	13(30.95)	37(52.86)	50(44.64)	<u><0.02</u>
	Inadequate	29(69.05)	33(47.14)	62(55.36)	
Knowledge on risk of early replacement feeding	adequate	20(47.62)	49(70.00)	69(61.60)	<u><0.02</u>
	inadequate	22(52.38)	21(30.00)	43(38.40)	

DISCUSSION

Respondent's age-range in the quantitative study was 21 to 46 years, with a mean age of 32.17 years. (MOH, 2010) and also falls between the reproductive age range of 15 to 49 years.

Three-quarters of the women reported that breast milk should be the first food to give the child in the qualitative study. This results is supported by the quantitative phase were 81.25 % (Figure 1) of respondents acknowledge breast as the best option to be given to their babies. However in the context of HIV, just 29.17% practice exclusive breastfeeding while 7.29% use replacement feeding resulting to a high proportion (63.54%) who practiced mixed feeding despite its complications. This results disagree with the WHO, UNICEF, UNAIDS, and UNFPA which discourages the use of mixed feeding. It is also in discordance with the objectives put in place by the Cameroon government in 2006 to reduce mixed feeding from 64% to 30% by 2010 (MOH, 2008).

Information from the prevention of mother-to-child transmission of HIV pocket book (MOH, 2008) reveals that transmission is 7% during pregnancy, 15% during labour and delivery and 15% during the breast feeding period. However, 73.21% of the respondents had inaccurate knowledge on the transmission of HIV from the mother to the child as a result more than half (55.36%) also had inadequate knowledge on the prevention of MTCT of HIV during breastfeeding period. These results disagree with recommendations put in place by the Cameroon Ministry of Health in 2008 stipulating access to free information by all HIV-infected women on the risk of mother-to-child transmission during breastfeeding. Furthermore other studies done in Tanzania to test infant feeding counselling revealed that insufficient and inconsistent information and lack of adequate time for counselling also limited HIV and infant feeding interventions in Tanzania and other settings (

Adejuyigbe and Odbiyi, 2004, Chopra et al, 2005). Leshabari et al, (2006) also disclosed that most counsellors are not well informed about how to protect babies from MTCT of HIV+ mothers. Inadequate knowledge was also seen in the area of the risks associated with early replacement feeding were up to 38.39% didn't had good knowledge as against 61.61%. This lack of knowledge may be is the results of poor infant feeding counselling.

Replacement feeding, breastfeeding, and mixed feeding were 7.27%, 29.17% and 63.54% respectively. These results oppose those of Maru and Haidar, (2009) in a study to assess infant feeding options in the context of HIV in Addis Ababa, Ethiopia which reveals that replacement feeding; Exclusive breastfeeding and mixed feeding were 46.85, 30.6% and 15.3% respectively. Again the results still contradict those of Mohammed et al, (2010) in a study to evaluate infant feeding practices and its determinants among HIV-infected mothers in Abuja, Nigeria which showed that replacement feeding, and exclusive breastfeeding were 40% and 46% respectively. The results were just slightly higher than those of 2008 in the PMTCT progress report which reported both replacement feeding and exclusive breastfeeding and mixed feeding to be 40.4% and 59.6% (MOH, 2008). For the factors enabling the use of an infant feeding option, 100% of respondents acknowledge that they use replacement feeding because it protects their babies from HIV. While three factors money (41.51%), parental feeding attitude/culture (28.30), and advice from hospital (20.75) were advanced as reasons for practicing breastfeeding. Practicing mixed feeding was related to money (43.75%), parental feeding attitude /culture (25.00%), and the fact that it is cheap and easy to use (18.75%). While the protective, economic and psychosocial importance of breastfeeding was disclosed by respondents. These results were partly supported by the Ethiopian study which reveals household income ($p < 0.05$) as a predictor of replacement feeding, and

parental infant feeding attitude ($p < 0.01$) and infant illnesses as predictors of mixed feeding (Maru and Haidar, 2009).

Water source ($p < 0.002$), ownership of a fridge ($p < 0.01$), level of awareness on the prevention of MTCT of HIV during pregnancy ($p < 0.003$) and breastfeeding ($p < 0.02$), and risks of early replacement feeding ($p < 0.02$) were predictors of the use of a safe infant feeding option. The actual predictors of a safe feeding options were ownership of a fridge (AOR=3.1, 95% C.I. 1.17, 8.24, $P < 0.02$) and level of awareness on MTCT of HIV during pregnancy (AOR=0.35, 95% C.I. 0.13, 0.19, $P < 0.04$). These results confirm the facts highlighted in the National and International recommendation on effective replacement feeding in the context of HIV (MOH, 2008 and WHO, UNICEF, UNAIDS, UNFPA, 2010). Moreover, when the AFASS conditions are met coupled with adequate knowledge on infant feeding as a result of good counselling, misconceptions are clarified, there is increased awareness and may result to a safe infant feeding option. The results also support the fact that economic factor plays a vital role in the decision to choose a feeding option as people who had fridges must be people of high socioeconomic status.

With regards to challenges of the feeding method respondents reported food safety and hygiene

(44.45%) and money (31.82%) as major challenges of replacement feeding. Care of the mother and money (70.37%) and frequent sucking by the baby (20.37%) were problems associated with breastfeeding. Difficulties of mixed feeding were: food safety and hygiene (42.11%), money (31.58%), and sickness of the baby (10.53%). These results though highly supported by the National and International recommendations (MOH, 2008 and WHO, UNICEF, UNAIDS, UNFPA, 2010) shows that infant feeding counselling in the context of HIV is not perfectly carried out.

CONCLUSION

The study has demonstrated insufficient knowledge on the prevention of mother-to-child transmission of HIV and on the practice of infant feeding options in the context of HIV.

Mixed feeding which is discouraged by the WHO is still in high practice in general and among HIV-infected mother.

HIV-infected women acknowledged a high zeal to bear children even though they have inadequate knowledge on how to go about it. Actual determinants of a safe infant feeding includes: availability of a fridge and adequate knowledge on the prevention of mother to child transmission of HIV. Other potential factors may

include: financial constraint, the fact that mother or friend use it, information, education and communication (I.E.C.) in hospitals, and the fact that it protects the child from HIV. However HIV-infected women express a high utilization rate of replacement feeding if subsidized.

Challenges often encountered with safe infant feeding in the context of HIV includes: finances, high frequency of sucking, and non flow of breast milk. For replacement feeding in addition to money is the respect of adequate hygienic condition and sickness of the baby.

REFERENCES

- Eng J (2003). Statistical Concept Series. Available online at: www.rad.jhmi.edu/jeng/javarad/samplesize/. (accessed 10 July 2011).
- Ministry of Health: MOH (2008). Cameroon National AIDS Control Committee. Progress Report n°1 2008. MOH. WHO.UNICEF.UNAIDS.GLOBAL FUND. CIRCB and ESTHER
- Ministry of health. National AIDS Control Committee: National HIV/AIDS and STI Control strategic Plan. 2011-2015. (2010). Cameroon.
- Ministry of Health: MOH (2008). National Guide for global Management of Adults and Adolescents living with HIV/AIDS in Cameroon. MOH. NACC. WHO.
- Park k (2009). Park's textbook of preventive and social medicine. 20th Edition. M/S Banarsidas Bhanot publishers, India
- UNAIDS/WHO (2007). AIDS Epidemic Update. Available at: www.unaids.org, (Accessed 18th March 2011).
- United Nations General Assembly Special Session. Declaration of Commitment on HIV/AIDS. New York, UN, 2001.
- WHO (2010) PMTCT Strategic Vision 2010-2015. Prevention of mother-to-child transmission of HIV to reach the UNGASS and Millennium Development Goals.
- WHO, UNAIDS, UNICEF. Towards universal access: scaling up priority HIV/AIDS interventions in the health sector. Progress report 2009. Geneva, World Health Organization, 2009. Available at http://www.who.int/entity/hiv/pub/tuapr_2009_en.pdf (accessed on 10 July 2011).
- WHO, UNICEF, UNAIDS, UNFPA (2010). Guideline on HIV and infant feeding: Principles and recommendations for infant feeding in the context of HIV and a summary of evidence Geneva, World Health Organization, 2010 http://www.who.int/hiv/pub/mtct/infant_feeding/en/index.html (accessed on 10 July 2011).
- Wilke MC (2004). Knowledge about and attitudes towards infant feeding of mothers with HIV infection. University of Johannesburg, South Africa.

