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Assessment of knowledge and practice of maternal care to HIV-negative children less than 2 years of HIV-positive mothers in Hoima regional referral hospital

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ABSTRACT

The study was done to assess the knowledge and practice of maternal care to HIV-negative children less than 2 years of HIV-positive mothers in Hoima Regional Referral Hospital. A quantitative cross section study approach was conducted in order to assess the knowledge and practice of maternal care to HIV-negative children less than 2 years of HIV-positive mothers in Hoima Regional Referral Hospital. The qualitative data collected was statistically analyzed and documented using Microsoft Excel and Word version 2019 which was then analyzed. Most of the respondents (64%) and were aged 21-26 years, 23% were aged 15-20 years. Majority (39%) of the respondents were Catholic, 28% were Anglicans, 12% Muslims and 21% from other religions other than the traditional protestants, catholic and Muslim. Most respondents (72%) were married, 18% were single mothers and 7% were either divorced or separated. Most respondents (49%) had 3-4 children while a few (14%) had 5 children and more. Most respondents (59%) had formal education up to primary level and only (9%) had made it to tertiary level. The vast majority of respondents had extensive understanding of PMTCT. However, the study's findings revealed that participants had very little knowledge of other topics, such as practices that could expose children to HIV after birth. Respondents had a generally favorable opinion regarding HIV PMTCT.

Keywords: Knowledge, practice, maternal care, HIV-negative children, HIV-positive mothers

INTRODUCTION

In sub- Saharan Africa lives 91% of children with the virus with vertical transmission a leading cause of infant infection, 6% of HIV infected children are in Asia and the Pacific and the remaining 3% live in other parts of the world [1-5]. By a 2013 appraisal, 1.3 million women living with HIV were delivered of their babies without any change from 2009 [6-8]. Annually, nearly 1.4 million HIV- 1 positive women conceive, majority of whom are from sub-Saharan Africa [9-14]. The proportion of women living with HIV-1 among antenatal clients in sub-Saharan Africa ranges from 5% to as high as 30% [15-16].

An estimation of 1.4 million pregnant women is living with Human Immunodeficiency Virus (HIV) in low-and middle-income countries globally and only 26% of those women received an HIV test. According to the [17], the risk of Mother to Child Transmission (MTCT) of HIV in newly infected women, not yet on treatment is much higher and it may occur at any period of pregnancy and lactation. By 2015, more than 1 million of pregnant women living with HIV received antiretroviral therapy (ART) for Prevention of Mother to Child Transmission (PMTCT), with nearly 79% in sub-Saharan Africa [18]. Over 90 percent of new infections in infants and young children occur through MTCT [19]. A higher percentage of HIV-infected children (70–80%) acquire the virus during intrapartum, while intrauterine infection accounts for 20–30% and breastfeeding is responsible for as much as 40% of infections in resource-limited countries [20-21].

Rates of transmission of HIV from mothers to children have varied in different parts of the world. Most studies in the US and Europe have documented transmission rates in untreated women to be between

12-30%. In contrast, transmission rates in Africa and Haiti were reported to be higher (25%- 52%) [22].

The aim of PMTCT programmes is to reduce the spread of HIV from mothers to their babies, but the identification and elimination of barriers that influence the use of PMTCT postnatal follow-up service has proven to be a challenge for programme planners and healthcare workers in implementing successful PMTCT programmes [23]. Lack of awareness and knowledge impact negatively on the up-take of PMTCT postnatal follow-up services [24]. PMTCT programmes around the world are hugely affected by the level of awareness and knowledge of HIV and Acquired Immune Deficiency Syndrome (AIDS) as well as MTCT, which consequently increases HIV prevalence among children [25]. The purpose of this study therefore, was to assess the knowledge and practice of maternal care to HIV-negative children less than 2 years of HIV-positive mothers in Hoima Regional Referral Hospital.

METHODOLOGY

Study design and rationale

A quantitative cross section study approach was conducted in order to assess the knowledge and practice of maternal care to HIV-negative children less than 2 years of HIV-positive mothers in Hoima Regional Referral Hospital.

Study Site

The study was conducted at Hoima Regional Referral Hospital.

Study population

The study population targeted was the HIV- positive lactating mothers attending ARVs treatment at Hoima Regional Referral Hospital during the study period.

Inclusion criteria and rationale

It will include HIV-positive mothers to HIV-negative children at Hoima Regional Referral Hospital willing to participate in the study.

Exclusion criteria

Those who declined to participate in the study.

Sample size determination and rationale

The sample size was determined using the Kish Leslie's formula (1965)

$$n = \frac{(Za/2)^2 p(1-p)}{e^2}$$

Where n is the required sample size, p is the approximate prevalence of HIV- among lactating mothers attending at Hoima Regional Referral Hospital, and e is the permissible error in the estimate. Until this study was conducted there were no published data about p. So a 50% proportion was used to get the maximum sample size by taking into account 90% confidence interval ($Z\alpha/2=1.96$), marginal error (d) of 10%. In line with the above consideration, the minimum calculated sample size was 96 respondents. The researcher was able to interview 150 respondents in this study.

Sampling procedure

A random sampling technique was used to select participants until the calculated sample size was reached because of the limited time of data collection.

Data collection method and tools

Data was collected using an interviewer-administered questionnaire. The researcher met with the targeted respondents that took part in the study, after obtaining permission for data collection from respondents. Each participant was required to give an informed consent before enrolling in the study. The researcher assisted the respondents in filling the questionnaires by explaining to the respondents for clarifications. The properly filled questionnaires were then collected and then data was taken for analysis. The researcher used a structured questionnaire and participants were asked similar questions and from options, they picked the best alternative.

Data analysis

The qualitative data collected was statistically analyzed and documented using Microsoft Excel and Word version 2019 which was then analyzed. The analyzed data was presented in form of tables and graphs which formed a basis for discussion and conclusions.

Ethical considerations

Consent

Participants were given information regarding the research to seek consent. Each participant's choice to participate or not was respected and data collected from participants was kept confidential.

Privacy protection

The participants' names were not included while filling out the questionnaire to maintain privacy.

Confidentiality

It was clearly communicated that the information obtained from the participants would be kept under lock and key to only be used for research purposes.

RESULTS

Table 1: table showing demographic data

Variable	Category	Frequency	Percentage %
Age	15-20	34	23
	21-26	96	64
	27-33	19	12
	34+	1	1
Religion	Catholic	59	39
	Protestant	41	28
	Muslim	19	12
	Others	32	21
Marital status	Married	109	72
	Single mother	27	18
	Divorced/separated	10	7
	Widow	4	3
Number of children	1-2	56	37
	3-4	73	49
	5+	21	14
Education level	Primary	89	59
	Secondary	30	20
	Tertiary	13	9
	None	19	12
Occupation	Business	17	11
	Civil servant	4	3
	Others	129	86

Most of the respondents (64%) and were aged 21-26 years, 23% were aged 15-20 years. Majority (39%) of the respondents were Catholic, 28% were Anglicans, 12% Muslims and 21% from other religions other than the traditional protestants, catholic and Muslim. Most respondents (72%) were married, 18% were single mothers and 7% were either divorced or separated. Most respondents (49%) had 3-4 children while a few (14%) had 5 children and more. Most respondents (59%) had formal education up to primary level and only (9%) had made it to tertiary level.

Table 2: Showing respondents knowledge regarding PMTCT of HIV among women

		Frequency	Percent
Did you receive any health education about PMTCT?	No	10	7
	Yes	140	93
If yes, where?	ANC /PHU	98	66
	Maternity Department	23	16
	Media and Friends	18	12
Did you need to know your HIV status when pregnant?	No	5	3
	Yes	142	94
When is the right time to start attending ANC clinic?	Any month you choose	43	29
	Immediately you missed a period	100	67
	The last month of pregnancy	3	2
Can HIV be transmitted in utero?	Not sure	27	18
	No	30	20
	Yes	92	61
Can HIV be transmitted during delivery?	Not sure	7	4
	No	8	6
	Yes	135	90
Can HIV be transmitted through breastfeeding?	Not sure	5	3
	No	13	9
	Yes	132	88
Exclusive breastfeeding for the first 6 months means	Giving breast milk only	65	43
	Giving breast milk and medicines only	83	56
	Giving breast milk, medicines and water	2	1
Which of the following breast problems can put your baby at risk of acquiring HIV?	Cracked nipples	122	81
	Breast engorgement	8	6
	Mastitis/ swollen breast	8	6
	None mentioned	3	2
Which of the following can expose your baby to HIV after delivery?	Mixed feeding	48	32
	Non-adherence to HIV prophylaxis	18	12
	Re-infection of HIV	7	4
	2 and 3	10	7
	All of the mentioned	57	38
Babies born of HIV + mothers have a smaller chance of becoming HIV + if mothers take Anti-retroviral therapy	Not sure	40	27
	No	7	4
	Yes	100	67
Do you know about baby's ARV (Nevarapine/NVP) prophylaxis?	No	10	7
	Yes	133	89

How should nevarapine (NVP) prophylaxis be given?	Not sure	17	11
	Immediately after birth	27	18
	At birth then daily	100	67
	Twice a day	13	9
For how long should NVP prophylaxis be given?	Not sure	63	42
	Until 6 weeks of age if mother is on ART	33	22
	Until 1 week after stopping breastfeeding, if mother is on AZT prophylaxis	28	19
	Until 2 years of breastfeeding	23	16
When should the mother start ARV (AZT) prophylaxis?	Not sure	22	14
	At first ANC visit	48	32
	When CD4 cells > 350	72	48
	At 14 weeks gestation	7	4
How often do you take AZT prophylaxis?	Not sure	33	22
	Once a day	78	52
	Twice a day	35	23
For how long should she take AZT prophylaxis?	Not sure	72	48
	7 days post delivery	37	24
	Until cessation of breastfeeding	38	26
Breastfeeding prevents conception; therefore, there is no need for condom use	Not sure	7	4
	No	123	82
	Yes	18	12

Study respondents were asked to answer sixteen questions on prevention of mother-to-child transmission in a self-administered questionnaire. The findings revealed that 78% of the respondents showed high levels of knowledge on PMTCT, compared to 23% who showed low levels of knowledge on PMTCT of HIV. The majority of the respondents (96%) knew the importance of knowing their HIV status during pregnancy. When respondents were asked whether HIV could be transmitted during utero, delivery and through breast-feeding, the results showed knowledge levels of 61%, 90%, and 88%, respectively. High knowledge was also observed when the participants were asked whether they knew about children's ARV (Nevirapine) prophylaxis, and how it should be administered; 89% knew about it, and 67% knew about its frequency.

Table 3: Showing attitudes of respondents towards PMTCT of HIV among women

Attitude Questions		N	%
Where do you prefer to deliver your baby?	Hospital delivery	150	100
Believe that HIV prophylaxis can prevent MTCT of HIV	Neither agree nor Disagree	8	6
	Disagree	120	80
	Agree	17	11
Believe that there is nothing wrong giving my baby breastmilk and formula milk especially when mother is working	Neither agree nor Disagree	8	6
	Disagree	120	80
	Agree	17	11
My in-laws or relatives believe that formula feeding indicates mother is HIV+	Disagree	70	47
	Agree	80	53
I hide my HIV status and baby status from my partner	Disagree	107	71
	Agree	43	29
Stopped my baby's HIV prophylaxis and my HIV prophylaxis to prevent future drug resistance	Disagree	142	94
	Agree	7	4
My baby became ill and then I stopped his/her HIV prophylaxis (NVP)	Disagree	147	98
	Agree	3	2
I took the HIV prophylaxis from clinic, but I do not give it to my baby as I never got consent to test my baby from my partner	Disagree	138	92
	Agree	10	7

In the questionnaire, respondents were asked to indicate whether they agreed or disagreed with the statements provided. Two marks were allocated to each preferred answer chosen. Generally, the study results showed that all the respondents showed a positive attitude towards the prevention of mother-to-child trans- mission as they all scored more than half the marks allocated. All the study respondents preferred to deliver their children at the hospital, rather than at home, and 83% believed that HIV prophylaxis could prevent mother-to-child transmission. On the other hand, from the remaining 17%, 4% stopped giving HIV prophylaxis to their children as they believed will cause future drug resistance, while 2% stopped treatment as they believed it caused their children to be ill. Eighty percent of the respondents believed in exclusive breast feeding, while 11% of respondents believed that there was nothing wrong in giving a child breast milk and formula milk simultaneously (mixed-feed), especially when the mother is working. The environment surrounding individuals can positively or negatively influence their attitude towards adhering to PMTCT instructions and, this is evidenced by the study results showing that 53% believe that giving a child formula milk indicates the mother's HIV positive status.

Table 4: table showing respondents practices related to PMTCT of HIV among the women in the study

Practice Questions		N	%
My culture promotes breastfeeding	Disagree	3	2
	Agree	147	98
I always breastfeed	Disagree	22	14
	Agree	128	86
I breastfeed and bottle-feed	Disagree	143	96
	Agree	7	4
I give my baby soft porridge as she always wants to feed	Disagree	125	83
	Agree	25	17
Babies need water even if they are breastfeeding	Disagree	115	77
	Agree	32	21
I'm facing difficulties when using the syringe for measuring my baby's medication	Disagree	132	88
	Agree	17	11
When I am away, I ask my relative to breastfeed for me	Disagree	143	96
	Agree	7	4
I always take my prophylaxis, though I hide it from my relatives	Disagree	80	53
	Agree	68	46
I always give my baby his /her HIV prophylaxis, though I hide if from my relatives	Disagree	75	50
	Agree	73	49
Sometimes I have problems with money to take my baby for immunization and HIV prophylaxis refills	Disagree	100	67
	Agree	47	31
I always use a condom	Disagree	22	14
	Agree	128	86
My partner refuses or complains about condom use	Disagree	77	51
	Agree	72	48

In this study, behaviour or practices was assessed by the researcher and was categorized as either negative or positive. Negative behaviour was one where the respondent disagreed with more than half of the statements concerning the PMTCT of HIV. Positive behaviour was one where the respondent agreed with more than half of the statements made about PMTCT of HIV. The overall results showed that 90% of breastfeeding mothers displayed a positive behaviour on practices related to PMTCT of HIV, while 10% showed a negative behaviour. 88.9% of the mothers always breast-fed their infants, while 4.4% practiced mixed feeding (gave breast milk and bottle milk). Less than a quarter of the mothers (16.7%) were feeding their children soft por- ridge before 6 months of age as they believed that their children were not satisfied with only breast milk. 20% of the respondents agreed to the statement that children also needed water irrespective of breast- feeding. 3.3% of the respondents asked their lactating relatives to breast-feed their infant when they were away. 48.9% of the breastfeeding mothers kept their HIV prophylaxis secret from their relatives. 14.4% failed to use a condom during sexual intercourse, while 47.8% reported that their partners refused or complained about condom use. Lastly, 31.1% of the respondents experience financial difficulties and were unable to take their children to the clinic for immunization and HIV prophylaxis refill.

DISCUSSION

Most of the respondents (64%) and were aged 21-26 years, 23% were aged 15-20 years. Majority (39%) of the respondents were Catholic, 28% were Anglicans ,12% Muslims and 21% from other religions other than the traditional protestants, catholic and Muslim. Most respondents (72%) were married, 18% were single mothers and 7% were either divorced or separated. Most respondents (49%) had 3-4 children while a few (14%) had 5 children and more. Most respondents (59%) had formal education up to primary level and only (9%) had made it to tertiary level.

In the current study, more than 90% of the respondents who took part in this survey reported that they had learned about PMTCT health from a number of sources, including their friends, the ANC, the maternity department, and the mass media (television, newspapers, and radio). The majority of respondents had strong levels of PMTCT expertise. The majority of respondents scored over 70%, and only one respondent from the under-20 age group showed noticeably low knowledge on PMTCT, indicating that there were high levels of awareness across all age categories. This research is consistent with [22-30] on pregnant women's knowledge of MTCT of HIV, its prevention, and related factors in Ethiopia, where they concluded that roughly 60% of the women participants had full knowledge on crucial modes of HIV transmission from mother to child.

Even if the study's respondents scored significantly high on knowledge (90%), the remaining proportion is still important because it may be the main factor in mother-to-child transmission among nursing infants who have been HIV-negative for at least six weeks. The study's findings showed that there was very little understanding of other topics, such as procedures that can expose children to HIV after delivery. The findings of this study are different from those of a study by Luba et al. [26], [31-37], in which 78% of participants were aware that breastfeeding could result in MTCT. The study's findings may significantly raise the likelihood of vertical HIV transmission, putting their nursing infants at risk of contracting the virus. Among other knowledge-related questions, 67% of respondents knew how frequently to give their kids ARV (NVP) prophylaxis, and the remaining 33% may seriously expose their kids to HIV while they were still nursing if they gave the medication incorrectly. During the time of data collection, all of the chosen respondents were nursing their infants.

The relevance of partner involvement during ante-natal and post-natal care as a venue for discussing concerns such as the importance of disclosing an individual's HIV status and consistent condom usage by partners cannot be overstated. According to the survey, 29% of breastfeeding women hide their HIV status from their partners, and 47% say their partners deny or complain about condom use. As a result, 14% do not use a condom during sexual contact. The age group 31-45 was the most affected by partners refusing to or protesting about putting a condom in a study by Dlamini *et al.* [27]. The main impediments to condom use are a lack of female decision-making power and a lack of economic resources. According to a study conducted by [28], [38-44]. On pregnancy prevention and condom use practices among HIV-infected women on antiretroviral therapy seeking family planning in Malawi, 62% of women did not use a condom at their most recent sexual intercourse, and more than half of the women (65%) reported inconsistent condom use, which was due to partner refusal to use condom (77%).

Dominant and unbalanced power dynamics then prevail, making it harder for them to influence family decisions such as condom use, especially when the partner is opposed to it. In such a case, the odds of HIV transmission to their children while breastfeeding are considerably increased. In Hoima, the researcher observed and concluded that partner involvement throughout ANC and the post-partum period is critical. Following the birth of a newborn, spouses are counseled in the maternity department on the appropriate family planning strategy to be utilized as a means of preventing re-

infection during the breastfeeding phase (e.g., condom use), so preventing vertical HIV transmission. HIV care and family support are two more important topics covered. During these sessions, condom use looks to be the greatest family planning option for the couple to use.

In many countries, fear of stigma prevents HIV-positive women from reporting their status to their partners or community members [29]. Furthermore, men frequently do not use PMTCT services because they are either too busy, do not care, are afraid of HIV test results, or experience hostile provider attitudes. In this study, breastfeeding moms living with HIV chose to conceal their ARV and their children's ARV prophylaxis from their family for fear of stigma, which could lead to serious failure to adhere to the medicines, particularly when the mother is away or ill [45].

CONCLUSION

The vast majority of respondents had extensive understanding of PMTCT. However, the study's findings revealed that participants had very little knowledge of other topics, such as practices that could expose children to HIV after birth. Respondents had a generally favourable opinion regarding HIV PMTCT. Overall, 90% of breastfeeding mothers demonstrated good behavior toward HIV PMTCT practices, while 10% demonstrated negative behavior. According to this study, the sources of knowledge about PMTCT include the ANC, the maternity department, the mass media (television, newspapers, and radio), and friends. According to the findings of the current study, breastfeeding mothers living with HIV fail to reveal their HIV status to their partners and family. As a result, if not handled effectively, variables such as poverty and adherence to ARV medicines may continue to be a concern in PMTCT.

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