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KNOWLEDGE, ATTITUDE AND PERCEPTION OF HIV, ART AND PMTCT AMONG HIV INFECTED PREGNANT WOMEN IN NAROK SUB-COUNTY HOSPITALS

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Abstract

Purpose: The purpose of the study was to determine knowledge, attitude and perception of HIV, ART and PMTCT among hiv infected pregnant women in Narok Sub-County Hospitals

Methods: The study was a cross-sectional study using simple random sampling method to sample the required sample size for the study of 117 HIV infected pregnant women. The study was conducted in all Narok sub-county hospitals. Semi-structured questionnaire was used to collect quantitative data. Focused group discussions and key informant interviews were used to collect qualitative data. Data entry and coding was done in SPSS v21. Descriptive statistics was used to compute proportions, mean and standard deviation. Qualitative data was categorized into themes based on the study objectives. To test the association between dependent and independent variables logistic regression analysis was used to generate odds ratios of association.

Results: Knowledge of HIV, ART and PMTCT and good attitude and perception towards HIV, ART and PMTCT services among HIV+ pregnant women are predictors of retention in care among HIV positive women.

Unique Contribution to Theory, Practice and Policy: The study recommended that the Ministry of Health and other stakeholders should hold community awareness and sensitization programmes on benefits of PMTCT services to pave way for acceptance and hence use and prevent vertical and horizontal transmission of HIV.

Key Words: *Attitude, Perception and Proportion, Knowledge HIV, ART and PMTCT*

1.0 INTRODUCTION

The WHO declaration (1988) on HIV/AIDS prevention and control stated that in the absence of a vaccine or cure of the disease, information and education were the most important strategies to prevent infection. Mother-to-child transmission (MTCT) is when an HIV-infected woman passes the virus to her baby. Knowledge of HIV/AIDS among pregnant women is very important.

A cross sectional study conducted in Malaysia showed majority of pregnant women, 67.8% had poor knowledge and only 32.2% of the respondents have good knowledge of HIV/AIDS. Majority of them (56.4%) have good attitude and practice towards HIV/AIDS compared to the remaining poor attitude and practice. Influencing factors for having good attitude towards HIV/AIDS were women having high education and received health education from health staffs (Wan-Puteh *et al.*, 2012). Similarly, in Iran it was revealed that women have generally low knowledge about HIV/AIDS but have positive attitudes towards HIV/AIDS (Tafazoli *et al.*, 2016). The results exposed the needs for more comprehensive education programme about HIV/AIDS. Several studies have tried to determine the knowledge of HIV/AIDS among different segments of women and from different countries and region. A systematic review in sub-Saharan Africa identified poor knowledge of HIV/ART/vertical transmission, lower maternal educational level and psychological issues following HIV diagnosis as the key barriers to retention (Gourlay *et al.*, 2013). Therefore, there is need for intensive counseling for patients receiving antiretroviral treatment at each follow up visit in order to improve retention in care (Musheke *et al.*, 2012).

In a study in Nigeria on perception of PMTCT, Olugbenga-Bello *et al.*, (2013) found out that 99.8% of women of reproductive age had heard about HIV/AIDS and had very high knowledge of MTCT (92%) and PMTCT (91%). However, 71% had negative views towards PMTCT. This was due to factors such as stigma and discrimination. The major source of information for was electronic media, doctors, teachers, relatives and partners. Similarly, studies included in the systematic review by Hodgson *et al.*, (2014) reported sufficient knowledge about HIV/ AIDS, ART, or need to protect one's child and commitment to a child's health as enhancers of retention in ART. This study did not establish the knowledge and awareness of HIV & AIDS among HIV infected pregnant women. Knowledge about HIV/AIDS among HIV infected pregnant women is very vital for retention.

Despite the proven and documented benefits of ART (WHO, 2015), retention of patients in most antiretroviral treatment programs continues to be one of the biggest challenges. Failure to continue ART and to suppress virus load also results in an increased probability of sexual and perinatal HIV transmission. Suboptimal adherence and retention in care can also lead to viral resistance to first-line ART drug, a particular burden in resource-poor countries for whom second line drugs are costlier (Long *et al.*, 2010). In a study conducted in Ghana, women with inadequate knowledge were 3.5 times more likely to default ART as compared to those with adequate knowledge. HIV patients are less likely to miss ART appointments when they have a good knowledge of the etiology of the disease and understand that ART is effective upon adherence. There was a significant association between education and level of knowledge as higher proportions of respondents with at least a primary education had good knowledge of ART, knew that ART is not a cure for HIV and requires optimal adherence (Boeteng *et al.*, 2013). This study only established the association between ART awareness and retention.

Establishing awareness of ART among HIV infected pregnant women is very vital in ensuring the success of ART care. There is need to determine the actual knowledge of ART among HIV infected pregnant women in Narok sub-county hospitals.

Patients' knowledge and practices on HIV/AIDS, PMTCT and ARTs have been shown to influence their motivation and uptake of ARVs for PMTCT (Duff *et al.*, 2010). As reported by Falnes *et al.*, (2010), a good level of understanding about HIV by the patient, a belief that ART is effective and prolongs life and recognition that poor adherence may result in viral resistance and treatment failure, could impact favorably upon his/her ability to adhere and hence be retained in care. Conversely, lack of interest in becoming knowledgeable about HIV and a belief that ART may in fact cause harm adversely affect adherence and retention in care (Dionne-Odom *et al.*, 2016).

Previous studies on the continent have found mothers' knowledge on PMTCT to be low. Knowledge of HIV, ART and PMTCT could however be influenced by interplay of socio-economic and other cultural factors including clients' educational level (Olugbenga-Bello *et al.*, 2013). A higher level of education has a positive impact on patient's ability to adhere to ART (Muhumuza *et al.*, 2017). This study assesses the level of knowledge, attitude and perceptions of clients on ART and PMTCT and determines the extent of influence of clients' knowledge level on accessing ART. Mothers, knowledge and understanding of ART and PMTCT could influence their adherence to ART and retention (Tesfaye *et al.*, 2015).

Globally, MTCT of HIV infection continues to be a major public health problem and constitutes the most important cause of HIV infection in children less than 15 years old (UNAIDS, 2012). Greater than 90 percent of all new pediatric HIV cases result from perinatal transmission of HIV, which can occur during pregnancy (in utero), at labor/delivery, or postnatal through breastfeeding (UNAIDS, 2016). Several barriers to PMTCT have been observed in Sub-Saharan Africa at individual, community, national and international level (Aizire *et al.*, 2013).

In a cross-sectional study among HIV positive women in the Ashanti Region, Ghana 72% of them knew that HIV/AIDS could be transmitted through MTCT. About 15% of the women exhibited no knowledge about the possibility of transmission of HIV from mother to the baby. The women who had knowledge of MTCT indicated that this could be intrauterine (88%), delivery (69%) and through breastfeeding (82%). Thirty-six percent however had no knowledge on the mode of MTCT of HIV (Boateng *et al.*, 2013).

Similarly, in Kenya a study found that sufficient knowledge of PMTCT facilitated ART initiation, adherence and/or retention during and after pregnancy (Kohler *et al.*, 2012). In another study conducted in Nigeria, knowledge about MTCT and PMTCT of HIV was high, 92.1% and 91.4%, respectively. However, a significant portion (71.27%) of the study population had poor attitudes towards PMTCT of HIV. Most studies focused on MTCT and the awareness among the general population. For the PMTCT strategies to be effective there is need to establish awareness of PMTCT among HIV infected pregnant women who are the target population in most PMTCT programmes. Interventions that target patient knowledge, beliefs, and attitudes remain paramount to end the discontinuation in care (Geng *et al.*, 2016).

Mother-to-Child Transmission (MTCT) has been identified as the greatest means of HIV infection among children. Adherence to antiretroviral drugs is necessary to prevent drug resistance and MTCT of HIV among HIV positive women (Olugbenga-Bello *et al.*, 2013). However, there is a gap in clients' knowledge, attitudes and perceptions of antiretroviral therapy (ART) and Prevention of Mother to child transmission (PMTCT) which influence their decision to adhere to ART. Thus, the knowledge of HIV status before pregnancy is crucial for disease acceptance and management.

2.0 METHODOLOGY

The study was a cross-sectional study using simple random sampling method to sample the required sample size for the study of 117 HIV infected pregnant women. The study was conducted in all Narok sub-county hospitals. Semi-structured questionnaire was used to collect quantitative data. Focused group discussions and key informant interviews were used to collect qualitative data. Data entry and coding was done in SPSS v21. Descriptive statistics was used to compute proportions, mean and standard deviation. Qualitative data was categorized into themes based on the study objectives. To test the association between dependent and independent variables logistic regression analysis was used to generate odds ratios of association.

3.0 RESULTS

3.1 Socio-demographic and socioeconomic factors

A binary logistic regression model was fitted in order to analyze the socio-demographic and socio-economic factors influencing retention in care among HIV+ pregnant women in Narok sub-county hospitals. The dependent/outcome variables were coded as 1 for retention in care and 0 for lack thereof. Before the fitting this model, it was generally hypothesized that all the independent variables affect the likelihood of being retained in care. Among all that socio-demographic and socio-economic factors, education was observed to influence retention in care most than other predictors. Women who had secondary level education were most likely to be retained in care (OR 6.15) than other levels of education; primary and tertiary levels (OR 2.44 and 4.81 respectively). Similarly, only secondary level education had significant association with retention in care ($P=0.03$) among the education levels (Table 1).

Table 1: Socio-demographic and socioeconomic factors influencing retention in care

Retention	95% Confidence Interval		Odds Ratio	P Value	Sig.
	Lower	Upper			
Age (years)					
15-24			Reference		
25-34	0.45	3.20	1.2	0.71	$\chi^2=9.218$
35-44	0.10	1.02	0.32	0.06	df=3
Above 45			1		p=0.06
Religion					
Catholic			Reference		
Protestant	0.22	1.42	0.56	0.22	$\chi^2=13.427$
SDA	0.084	4.29	0.6	0.61	df=5
Muslim			1		p=0.023*
Traditional			1		
No religion	0.01	0.65	0.07	0.02	
Marital Status					
Monogamous			Reference		
Polygamous	0.46	7.87	1.91	0.37	$\chi^2=7.560$
Single	0.22	5.52	1.1	0.91	df=9
Divorced/Separated	0.10	6.98	0.82	0.86	p=0.040*
Widowed	0.23	198.12	6.77	0.27	
Cohabiting	0.01	2.37	0.12	0.16	
Education level					
None			Reference		
Primary	0.66	9.09	2.44	0.18	$\chi^2=12.005$
Secondary	1.21	31.3	6.15	0.03	df=7
Tertiary	0.50	46.55	4.81	0.18	p=0.031*
Occupation					
Employed			Reference		$\chi^2=9.936$
Self-employed	0.26	4.22	1.06	0.94	df=6
Unemployment	0.18	3.89	0.84	0.83	p=0.034*
Distance Health facility					
Less 5km			Reference		
5 to 10km	0.13	0.99	0.36	0.05	$\chi^2=10.223$
10 to 20km	0.00	0.47	0.03	0.01	df=6
More than 20km	0.02	2.14	0.18	0.173	p=0.024*
Partner Knowledge	0.04	0.88	0.19	0.03	
Support Group	0.89	7.83	2.64	0.08	
Monthly Income	1.00	1.00	1.00	0.02	
Pregnant times	0.35	1.93	0.82	0.65	
Pregnancy weeks	0.91	1.01	0.96	0.11	
Children number	0.32	1.91	0.78	0.59	

* 95% Confidence Interval

Women in age group 25-34 years (OR 1.2) were more likely to be retained in care than other age groups (Table 4.3) (p=0.06, $\chi^2=9.218$, OR=0.32). However, the association between the age groups and retention in care was not statistically significant at 0.05. It was also observed that religion and distance from the health facility reduced the chances of women being retained in

care. Among marital status classes, married polygamous and widowed women were more likely to be retained in care (OR 1.91 and 6.77 respectively) than other marital status classes. Women who were members in patient support groups were also more likely (OR 2.64) to be retained in care than those who were not.

3.2 Knowledge, attitude and perception of HIV, ART and PMTCT

This study found out that 83% (97) of women believed HIV is transmitted through a virus, 15% (18) didn't know the cause and 1% (1) responded that it was hereditary while another 1% (1) responded that it was witchcraft (Figure 4.1). The chi square statistic indicates statistically significant association between knowledge on HIV infection ($p=0.024$, $\chi^2=8.849$, $OD=3.389$) and causes of HIV infection. Knowledge on HIV infection and causes of HIV infection have statistical significant relationship, $p<0.05$.

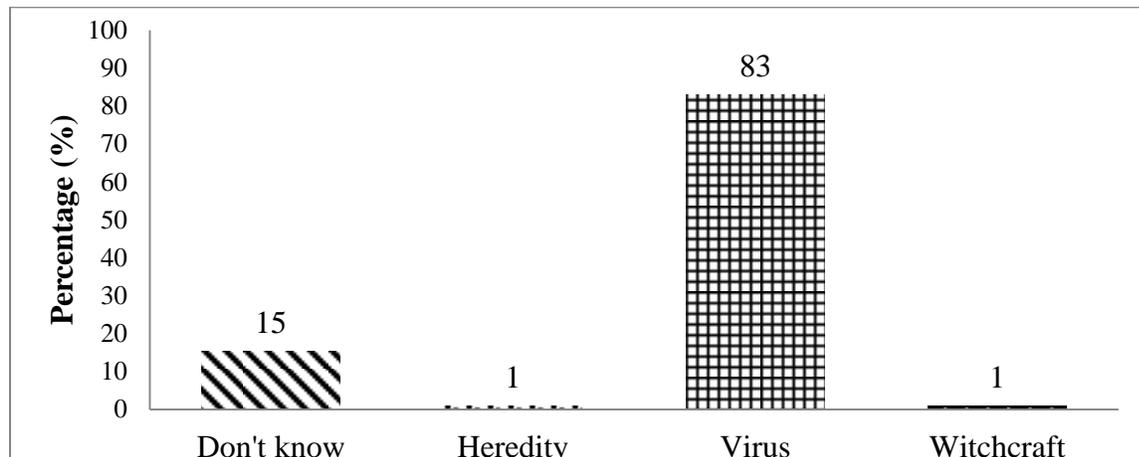


Figure 1: Knowledge on causes of HIV

In terms of mode of transmission of HIV, majority of the women identified sexual intercourse 41% (116), using unsterile instrument 21% (60), mother to child transmission 19% (54), blood transfusion 18% (50) and 0.8% (2) identified other modes of transmission (Figure 4.2). The chi square statistic indicates statistically significant association between knowledge on HIV infection ($p=0.039$, $\chi^2=10.071$, $OD=1.441$) and knowledge on modes of HIV transmission. Knowledge on the modes of HIV transmission and causes of HIV infection have statistical significant relationship, $p<0.05$.

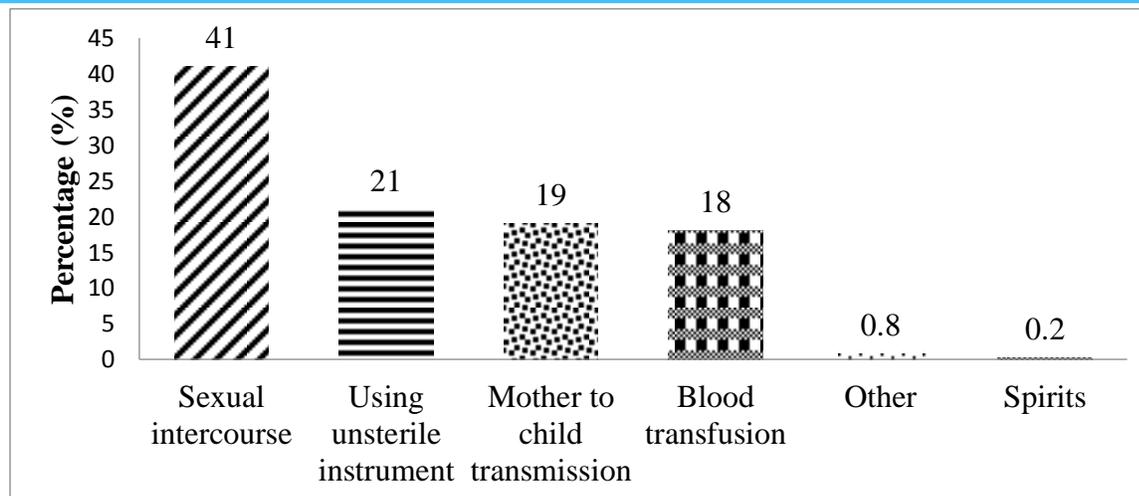


Figure 2: Knowledge on modes of transmission

During FGDs, women gave insights and perceptives on the modes of HIV/AIDS transmission and the contributing factors of HIV transmission. The following are some of the feedback: *“HIV/AIDS is transmitted through unprotected sexual intercourse with an infected partner. In some occasions, your partner (wife/husband) maybe your husband is promiscuous a vice that might lead to one contracting the HIV virus. The HIV virus can also be transmitted sharing razor blade and needle, unsterilized hair combs especially the ones we use at the salon because everyone uses them and maybe they have wounds on the head. The combs are not sterilized which might transmit the HIV virus. The virus is also transmitted through unchecked blood especially during blood transfusion”*. - (FGD participant)

“HIV virus is transmitted through unprotected sexual intercourse with infected person. This is common when people have sex without using condoms. If you have sexual intercourse with infected person and if a person cuts him/herself and you and accidentally then your wound get in touch with the wounded of an infected person, you will get infected. For unborn babies, they can contract HIV if their mothers have the virus”. - (FGD participant).

“HIV virus is transmitted through sexual intercourse with an infected partner. The virus is also transmitted through unscreened blood transfusion process. In the case of accidents, blood contamination among the victims might lead to the transmission of the virus. Cutting oneself using sharp items, sharing of things like razor blade and needle may also help in the transmission of the virus from one person to another. For newborn and unborn, they can get the virus during breastfeeding and labor respectively- especially if there is a delay in cutting the umbilical cord. The baby can acquire HIV when you chop the Uvula”. - (FGD participant).

On the knowledge on when transmission occurs, 20.70% (47) thought it's during pregnancy, 33.92% (77) during labour and delivery, 37.44% (85) during breastfeeding while 7.93 % (18) didn't know as shown in Table 4.4. The chi square statistic indicates statistically significant association between knowledge on when HIV transmission occurs ($p=0.025$, $\chi^2=17.280$,

OR=.923) and causes of HIV infection. Knowledge on when HIV transmission occurs and causes of HIV infection have statistical significant relationship, $p < 0.05$.

Table 2: Knowledge on when transmission occurs

Characteristic	Frequency	Percent	Sig.
Knowledge on when transmission occurs			
During pregnancy	47	20.70	$\chi^2=17.280$
During labour & delivery	77	33.92	df=6
During breastfeeding	85	37.44	p=0.02*
Don't know	18	7.93	

All respondents said that it was necessary to remain in care 100% (117). The study revealed reason for remaining in care was in order to, to prevent of HIV to the child 80.34% (94), to improve your health status 17.09% (20) while to satisfy doctors requirement was 2.56% (3) ($p=0.270$, $\chi^2=7.398$, OR=2.310). The study also revealed a high number of respondents, 93.2% agreed on skilled delivery, 1.7% disagreed while 5.1% were neutral (Table 4.5) ($p=0.034$, $\chi^2=19.402$, OR=1.059).

Table 3: Knowledge of ART, attitude and perception

Characteristic	Frequency	Percent	Sig.
Necessary to remain in care			
Yes	117	100	$\chi^2=4.768$
No	0	0	df=4
			p=0.027*
Reason for remaining in care			
To improve your health status	20	17.09	$\chi^2=7.398$
To prevent of HIV to your child	94	80.34	df=5
To satisfy doctors requirement	3	2.56	p=0.270
Skilled delivery for infected women			
Agree	109	93.16	$\chi^2=19.402$
Disagree	2	1.71	df=8
Neutral	6	5.13	p=0.034*

During FGD regarding what to do to ensure that the child you are pregnant turns out uninfected, most FGD participants I indicated that adherence to ART medication was very important:

“I am adhering to medication prescribed from the hospital. I am also eating well to ensure that my baby gets the necessary nutrients. I am also frequently visiting the clinic for checkup and medication to ensure that by unborn baby is not infected” (FGD participant).

4.0 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

4.1 Summary

Findings from this study showed that knowledge of, good attitude and positive perception towards ART and PMTCT are significant predictors of retention in care among HIV positive

women in Narok sub-county hospitals. These findings concur with those of a study in Ghana by Boeteng *et al.* (2013) who found that patients are less likely to miss ART appointments when they have a good knowledge of the etiology of the disease and understand that ART is effective upon adherence. This study also concurs with Duff *et al.* (2010) who found that Patients' knowledge and practices on HIV/AIDS, PMTCT and ARTs influence their motivation and uptake of ARVs for PMTCT.

Findings from this study showed that the knowledge of HIV, ART and PMTCT among HIV infected pregnant women in Narok Sub-county hospitals was high and they generally have a good attitude and perception towards HIV, ART and PMTCT services offered in the hospitals. Findings from this study support those of Olugbenga-Bello *et al.* (2013) and Kohler *et al.* (2012) who found out that of women of reproductive age had sufficient knowledge about HIV/AIDS and had very high knowledge of MTCT and PMTCT. Findings from this study also support those of the systematic review by Hodgson *et al.* (2014) who found that there was sufficient knowledge about HIV/ AIDS, ART, or need to protect one's child and commitment to a child's health as enhancers of retention in ART. Similarly, Tafazoli *et al.* (2016) revealed that women have generally low knowledge about HIV/AIDS but have positive attitudes towards HIV/AIDS. A systematic review in sub-Saharan Africa identified poor knowledge of HIV/ART/vertical transmission as a key barrier to retention (Gourlay *et al.*, 2013). These findings exposed the needs for more comprehensive education programme about HIV/AIDS in order to retain women in care.

This study found a high support of PMTCT among pregnant women. However, these findings differ with those of Olugbenga-Bello *et al.* (2013) who found that most of women had negative views towards PMTCT due to factors such as stigma and discrimination. This probably highlights the strides Kenya has made in countering stigma and discrimination of PLWHA.

4.2 Conclusion

Knowledge of HIV, ART and PMTCT and good attitude and perception towards HIV, ART and PMTCT services among HIV+ pregnant women are predictors of retention in care among HIV positive women.

4.2 Recommendations

The study recommends the Ministry of Health and other stakeholders should hold community awareness and sensitization programmes on benefits of PMTCT services to pave way for acceptance and hence use and prevent vertical and horizontal transmission of HIV. Outreach PMTCT services should be provided routinely needed to reach pregnant women with HIV-infection who reside farther away from the hospital. Patients also need to be continually encouraged to take treatment at their nearest treatment center.

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