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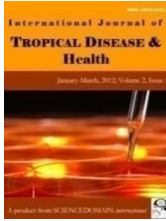
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Knowledge and Attitude on Prevention of Mother to Child Transmission of HIV among Pregnant Women Attending Antenatal Clinic at Kisii Level Five Hospital in Kisii County, Kenya

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Authors' contributions

This work was carried out in collaboration between all authors. Author SOO did the study design and wrote the protocol, author TN did the statistical analysis, literature searches and Manuscript writing, while authors RMK and SNM did the analyses of study and Manuscript corrections. All authors read and approved the final manuscript.

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ABSTRACT

Introduction: The acquired immunodeficiency syndrome (AIDS) epidemic is the greatest challenge to human kind in the 21st century. Over 35.5 million people are infected with Human immunodeficiency virus (HIV) worldwide and the majority of these infections are in the reproductive age group. Mother to Child Transmission (MTCT) of HIV infections is high especially in sub-Saharan Africa despite improvements in PMTCT services over the years. In 2006 there were 2.3 million children under 15 years living with HIV, and approximately 530,000 children were newly infected with HIV through mother to child transmission of the virus. A child dies of AIDS nearly

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every minute of every day.

Objective: To assess knowledge and attitude on prevention of mother to child transmission of HIV among pregnant women attending antenatal clinic in Kisii general hospital.

Methodology: An institution-based cross-sectional study was conducted among pregnant mothers attending antenatal care clinic at Kisii general hospital from February to April, 2014. A systematic random sampling technique was used to select the 328 respondents. Data were collected through structured pre-tested questionnaire. The data were then summarized into SPSS version 20.0, for windows and analyzed. Chi-square was used to calculate the association between, education, Occupation and age against knowledge on prevention of mother to child transmission.

Findings: The findings from the study showed that there was an association between the knowledge on PMTCT and Occupation ($P = 0.05$). A big number (52%) of the mothers did not know about PMTCT services which were being offered in the hospital. The study showed that the knowledge on PMTCT was associated to the age ($P = 0.02$). It was noted that respondents who had little or no knowledge of the services were mostly below 25 years of age and those with low education levels ($P = 0,01$). On the attitude towards PMTCT services it was found that three-quarters (77%) reported that it is good to take on PMTCT services if reactive and quarter (23%) of respondents reported that PMTCT services are wastage of time because AIDS has no cure.

Challenges that affect the PMTCT program include stigma still surrounding HIV and AIDS as a disease, which has led to 210 (64%) of the mothers not willing to know their status.

Conclusion: The utilization of the PMTCT services were affected by the low levels of HIV testing. The insufficient knowledge on PMTCT coupled with the negative attitude towards HIV testing, fear and stigma towards HIV and AIDS contributed to the low utilization of PMTCT services in Kisii level 5 Hospital in Kisii County.

Recommendation: The study recommends working in collaboration with all stakeholders to improve and increase on the sensitization and awareness to the communities on what PMTCT program is all about and what it entails. There is need to do a qualitative study to find out if the information given during counseling is enough and useful to pregnant women and to see if more counseling session are needed for pregnant women during antenatal visits.

Keywords: Acquired immunodeficiency syndrome; prevention of mother to child transmission of HIV; mother to child transmission of HIV; human immunodeficiency virus; care and treatment clinic.

1. INTRODUCTION

The Acquired Immune Deficiency Syndrome (AIDS) epidemic is the greatest challenge to human kind in the 21st century, in 2009, around 400,000 children below 15 yrs became infected with Human immunodeficiency virus (HIV) [1], almost all of MTCT infections occurred in Sub Saharan Africa, and more than 90% were as a result of mother-to-child transmission (MTCT) during pregnancy, labor/ delivery, and breastfeeding.

There is still fear of disclosing one's HIV status (or of learning it) because of the stigma that exists for people leaving with HIV/AIDS which hinders women from seeking PMTCT services and results in poor adherence to PMTCT interventions, in particular safer infant-feeding decisions. Being open about one's HIV status is one of the most powerful ways to reduce HIV-related stigma. Disclosing one's status also has other benefits, it can encourage partners to be

tested for HIV and prevent the spread of HIV by allowing those infected to openly take appropriate prevention steps. Therefore knowledge and awareness on PMTCT of HIV has an impact on the practice of HIV testing, taking medication and attitude toward PMTCT interventions among pregnant mothers [2].

2. PROBLEM STATEMENT

Despite improvements in PMTCT services over the years, MTCT of HIV infections is high especially in sub-Saharan Africa. In 2009 alone around 400,000 children less than 15yrs became infected with HIV and 1.3 million children and adults died of AIDS [1].

Studies done in Uganda and Tanzania on awareness and knowledge about HIV and PMTCT in pregnant women, in southwestern Tanzania shows a low level of knowledge on MTCT during pregnancy and moderate

knowledge on the risk of breastfeeding and MTCT [3].

The risk of MTCT can be reduced up to 2% if comprehensive approach of PMTCT will be put in place [4]. Treating mothers with ART in late pregnancy and breastfeeding period has shown to result in low postnatal HIV transmission. However little information is available on pregnant women's knowledge and attitude towards PMTCT intervention, and whether there are educational and behavioral change impacts from antenatal HIV counseling.

3. JUSTIFICATION

The purpose of this study was to assess the knowledge and attitude towards PMTCT interventions among pregnant women after PMTCT counseling. Knowledge of the interventions of PMTCT is important, so that pregnant women can be aware and through motivation they can have a positive attitude towards PMTCT.

The Broad objective was to assess knowledge and attitude on PMTCT of HIV among pregnant women attending Antenatal clinic at Kisii level 5 Hospital in Kisii County, with Specific objectives as to investigate the pregnant women's knowledge of Prevention of Mother- to-Child Transmission of HIV (PMTCT) services, to examine pregnant women's attitude towards antiretroviral drugs in prevention of Mother-to-Child Transmission of HIV and to examine the role of the hospitals in the utilization of PMTCT services.

4. METHODOLOGY

4.1 Study Design

A cross sectional study was conducted from February to April, 2014 to establish pregnant women's knowledge on PMTCT and their attitude towards PMTCT.

4.2 Study Area

Kisii level 5 hospital is located within Kisii town in Kisii central district which is one of the Districts in

Nyanza province, and it is the headquarters of Kisii County.

4.2.1 Sampling method and sample size determination

A sample size was determined using [5] formula which gave the final sample size of 328 respondents. systematic random sampling was used to select the respondents.

4.2.2 Data collection instruments and procedure

Pre-tested structured questionnaire was prepared by reviewing previously done studies on the topic of interest. The data were collected using structured interviewer administered questionnaire prepared to address knowledge and attitude associated with PMTCT services. The questionnaires were administered to all the systematically selected pregnant women who fulfilled the inclusion criteria while they were attending ANC clinic at the hospital.

4.3 Data Analysis

Data was entered into and analyzed using the SPSS database program version 20. Univariate and bivariate analysis were done for frequency computations and computing associations between variables respectively. Chi-square test was used to measure the strength of associations between variables where a p-value of = or <0.05 was considered to be statistically significant.

4.4 Ethical Consideration

Ethical approval and clearance was taken from Kisii level 5 Hospital administration committee, all selected respondents were communicated to about the objective of study in order to obtain their verbal consent before administering questionnaires. Participants were also informed their full right to withdraw or refuse to participate in the study. Information which was communicated with individual subjects was kept private and maintained confidential. Coding was used to eliminate names and other personal identification of respondents throughout the study process to ensure anonymity.

5. RESULTS

Socio-demographic characteristics of the pregnant women attending antenatal clinic in Kisii general hospital (N=328)

Socio-demographic variables N (%)	
Age of the respondents	
15-25	154(47%)
26-35	148(45%)
36-45	23(7%)
45-49	3(1%)
Marital status of the respondents	
Married	259(79%)
Single	59(18%)
Separated	7(2%)
Widowed	3(1%)
Level of education	
Tertiary	140(42.8%)
Secondary	113(34.4%)
Primary	75(22.8%)
Occupation of the respondents	
Housewife	162(49.4%)
Farmer	70(21.4%)
Business	59(18%)
Employed	37(11.2%)
Knowledge on PMTCT	
Source of information on PMTCT	
Hospitals	84(52.9%)
Friends	32(20%)
Radios	20(12.9%)
Seminars	11(7.1%)
News paper	11(7.1%)

5.1 Cross Tabulation of Respondents' Age and Knowledge on PMTCT

The findings from the study showed that the knowledge on PMTCT was associated to the age ($P = 0.02$) of the respondents as it is clear from the Table above that the higher the age, the more the more the knowledge.

5.2 Cross Tabulation of Respondents' Occupations and Their Knowledge on PMTCT

The findings from the study showed that there was an association between the knowledge on PMTCT and the Occupation. ($P = 0.05$). All the employed respondents interviewed knew about PMTCT. Those in business category followed at 32 (55.2%). However, only 26 (36.6%) farmers knew about PMTCT.

5.3 Cross Tabulation of Education Levels of Respondents and Their Knowledge on PMTCT

The study showed that the knowledge on PMTCT was associated to Education ($P = 0.01$). Majority (90%) of the pregnant women with tertiary education had knowledge on PMTCT followed by the category of those who were exposed to the secondary education (22.1%), however only 9.3% of those with primary education knew about PMTCT.

5.4 Pregnant Women's Knowledge on STIs and PMTCT

Respondents who knew about STIs had knowledge about PMTCT 158 (53.2%) and those with no knowledge had less knowledge on PMTCT (100%).

6. DISCUSSION

6.1 Knowledge on PMTCT

Kisii Level 5 hospital MCH/FP clinic serves a wide range of clients whose level of education ranges from primary to tertiary and this is because it's located in an urban area. The respondents interviewed in the study had various levels of education ranging from primary to tertiary, with the majority (42.8%) having tertiary level of education, however only 158 (48.2%) of the respondents had knowledge on PMTCT (Table 3). In Table 4 majority of the respondents 297 (90.5%) had knowledge sexually transmitted infections (STIs) as they were more common because most of the people were free to talk about them, these findings concurred with previous studies done by [6,7] at Lagos and rural Nigeria respectively.

The study findings also revealed that the higher the age, the more the knowledge (Table 1). This association was confirmed by the Chi-square correlations whereby the P.V was (0.02) meaning that there was a significant relationship between age and the knowledge of PMTCT services. This was because those who were 26 years and above were more exposed to different sources of information and had experience on antenatal issues since they always come for counseling in Health Centre. The other groups were those who marry when they are still young and therefore do not take antenatal issues serious and the under 25 years who get pregnant before marriage and

do not disclose for fear from their parents and the society who are against having children out of marriage, these findings coincided with those previously found by [8] at Kakamega, Nakuru, Karatina and Thika district Hospitals in Kenya.

An association between the respondents' occupation and the knowledge on PMTCT services ($P = 0.05$) revealed that those in formal employment had more knowledge on the services (Table 2). The high level of knowledge about PMTCT by civil servants is attributed to their high education levels compared to other

categories. It was also found that the same group complained about the much time they spend waiting for the antenatal services, since they always have to report back to the work places. Those involved in business, and other occupations were the next big category who knew about PMTCT services. This group was also exposed to different media and they also interact with different levels of people when they are carrying out their activities. Similar findings have been reported in a study done in Mbale regional hospital ANC by [9].

Table 1. Association between the respondents' age and the knowledge on PMTCT

Age	Have you ever heard of prevention of mother to child transmission?				Total	
	Yes		No		Frequency	Percentage
	Frequency	Percentage	Frequency	Percentage		
15- 25	58	37.7	96	62.3	154	100.0
26- 35	81	54.7	67	45.3	148	100.0
35- 45	17	73.9	6	26.1	23	100.0
46- 49	2	66.7	1	33.3	3	100.0
Total	158	48.2	170	51.8	328	100.0

Table 2. Association between respondent's occupation and their knowledge on PMTCT

Occupation	Have you ever heard of PMTCT				Total	
	Yes		No		Frequency	Percentage
	Frequency	Percentage	Frequency	Percentage		
Employed	37	100.0	0	0.0	37	11.0
Business	32	55.2	26	44.8	58	18.0
House wife	63	38.9	99	61.1	162	49.0
Farmers	26	36.6	45	63.4	71	22.0
Total	158	48.2	170	51.8	328	100.0

Table 3. Association between respondents' level of education and knowledge on PMTCT

Education level	Have you heard of PMTCT				Totals	
	Yes		No		Frequency	Percentage
	Frequency	Percentage	Frequency	Percentage		
Primary	7	9.3	68	90.7	75	23.0
Secondary	25	22.1	88	77.9	113	34.0
Tertiary	126	90	14	10	140	43.0
Totals	158	48.2	170	51.8	328	100.0

Table 4. Pregnant women's knowledge on STIs and PMTCT

Knowledge on STIs	Have you ever heard of PMTCT				Totals	
	Yes		No		Frequency	Percentages
	Frequency	Percentages	Frequency	Percentages		
Yes	158	53.2	139	46.8	297	90.5
No	0	0.0	31	100.0	31	9.5
Totals	158	48.2	170	51.8	328	100.0

Attitude(s) towards PMTCT services (N=328)	Response	N (%)
Mothers who said it is important to have an hiv test while pregnant	Yes	253(77%)
	No	75(23%)
Mothers who said reactive woman should have a baby	Yes	95(29%)
	No	197(60%)
	Don't know	36(11%)
Mothers who said reactive women should breastfeed her baby	Yes	85(26%)
	No	203(62%)
	Don't know	40(12%)
Comments on time spent at ANC	Too much	203(62%)
	Just in time	112(34%)
	Too short	9(2.7%)
	No comment	4(1.3%)
Utilization of PMTCT services by pregnant mothers		
Mothers' comments on time spent waiting for the services	Too much	203(62%)
	Just in time	116(35.3%)
	Too short	9(2.7%)
Comments on the way of counseling	Comfortable	187(57%)
	Not comfortable	141(43%)
Mothers willing to take PMTCT services if found reactive	Willing	272(83%)
	Not willing	56(17%)
Mothers HIV tested after counseling	did not test	210(64%)
	Tested	118(36%)
Mothers willing to disclose their HIV status	No	230(70%)
	Yes	98(30%)

Sources of information about PMTCT included interactions with friends during antenatal visits, radio programs and seminars. It was also clear that the most reliable source among these was sensitization and counseling sessions at the hospital during antenatal visits.

6.2 Attitude(s) Towards PMTCT of HIV Services

Most pregnant mothers felt it is important to have an HIV test and know their status while few did not see the importance of knowing the HIV status this was because, some pregnant women still have a negative attitude towards HIV testing. The reason for this being fear and stigma associated with HIV/ AIDS as a disease, this demonstrates fear and stigma people have towards HIV and AIDS and the way People living with HIV/AIDS (PLWHA's) are stigmatized. However this is not only in Kenya but was also reported in Zambia in a study on PMTCT conducted by UNAIDS in 2001 whereby the findings indicated that there is a high level of stigma against HIV/AIDS patients, the community tends to shun persons who are known to be reactive or have symptoms of AIDS. Those who reported that a reactive woman should not have a baby gave a reason that this will shorten her already 'numbered days' since she loses a lot of blood in the delivery process.

The other reason was that some respondents think it's obvious a reactive woman will infect the baby therefore are not convinced there is need for the baby. This finding is similar to those found by [9] in a study done at Mbale regional hospital ANC, this indicates that there is still a gap in knowledge as far as PMTCT is concerned. On the other hand respondents who reported that a reactive woman should have a baby recommended it because few of them are aware the baby can be born free of HIV because of PMTCT services if the woman attends antenatal regularly and delivers from the hospital. Surprisingly, the other respondents looked at it in the cultural perspective that; it is the tradition for every woman to produce children irrespective of the HIV status.

The respondents who reported that reactive mother can breastfeed, at least knew that the baby born of an infected mother can still be safe if she is enrolled for PMTCT and also breastfeeding may not be dangerous when done exclusively. It was therefore found out during the study that it is not known by some people that a reactive mother if she decides to breastfeed exclusively, the baby can still be safe.

It was again found that among those who reported that the baby should be breastfed

thought it was every mother's obligation to breast feed her baby. Others reported that there were mothers who cannot afford to buy other types of milk so breast milk is their only option. Among these however there are those who know about exclusive breastfeeding due to counseling got when they went for PMTCT program at the antenatal clinic.

On the issue of the husbands' and community's reaction when a wife/mother does not breastfeed her child, it was found out that if the husband knows the wife is sick and was therefore advised by the health workers not to breastfeed at all if she cannot do it exclusively, then he will support her, but if he does not know, then this can cause problems, this findings were similar with those found by [3] in a study done in Uganda and Tanzania.

The family members and community at large may not be in position to understand in case a woman is not breastfeeding her child. This may pose a number of questions, some people may think the mother wants to kill the baby and for this reason therefore she may be rejected and despised by society. It is not easy to explain to the whole community what really is stopping a woman from breastfeeding.

The respondents' attitudes towards PMTCT services are affected by their lack of knowledge on what the package entails and the advantages of these services to the reactive mothers. Much as it is true some mothers are aware of detailed information on these services and others know bits of information, but a good number of these pregnant mothers need more sensitization on this. The negative attitudes on the PMTCT services were not only with the pregnant mothers who are supposed to be the beneficiaries of these services in case they test and found to be sick, but also the communities where they come from. These communities have to be sensitized about these services if they are to support these mothers and encourage them access the services.

It is also not enough for people to know the PMTCT program and probably also get scanty information about the program when there is a lot to be known about it. It is difficult for some people to accept getting involved in something they are not convinced about.

Since there is a small group of mothers that know very well about the PMTCT services

among the many, therefore this big group of mothers who do not know cannot be left behind. They need to be sensitized, convinced so that they also can come aboard and reduce Mother-to-Child Transmission of HIV.

6.3 Utilization of PMTCT Services by Pregnant Mothers

The study found out that there were a number of things that affected the level of utilization of PMTCT services; these include stigma about HIV and lack of sensitization etc. Though a big number of the respondents reported that time spent waiting for antenatal services is too much, this may not stop them from coming for the services, but however wish the time was less.

It was found that some of those who complained of the time being too much were public servants and self-employed people who come for antenatal and yet have to go to work, so would not wish to wait for long. Some of those who said the time was much come from very far places and need to walk back. Those who were not comfortable with counseling said so basing on the arguments that counseling was done for groups and not to individuals, this makes them uncomfortable to ask personal questions.

It was however noted that though many respondents reported they were willing to take up PMTCT services, some were not willing to take an HIV test and yet this was the entry point of PMTCT services. On the other hand the respondents who were not willing to take up PMTCT if found reactive gave a reason that it was a wastage of time since AIDS has no cure while the others were not sure that a reactive woman cannot have an HIV /AIDS free baby. However some respondents raised a concern why PMTCT should target the children only without considering the mother, these findings were similar to those found by [9] in a study done at Mbale regional hospital ANC.

7. CONCLUSION

The findings of the study indicated that some variables affect both the knowledge and the attitude of the pregnant mothers. These included; age, education and occupation. The older the respondent, the higher the education and the occupation, the higher the knowledge of PMTCT services.

People's attitude and utilization of PMTCT services were affected by the insufficient knowledge on what the PMTCT program entails and the benefits of the services as far as mother-to-child transmission of HIV is concerned. Other issues like lack of male participation affected the utilization of PMTCT services.

Social demographic characteristics of the respondents, the knowledge and attitude towards PMTCT influenced their behavior towards PMTCT services as the theoretical concepts explained. Indeed pregnant women felt that their unborn babies are susceptible to the HIV/AIDS infection and hence the need to protect the babies. This is in line with the Health Belief Model which asserts that people have got their own beliefs and in order for them to change behavior and perception on certain issues, these beliefs have to be put in consideration.

8. RECOMMENDATION

As much as there are mothers and people in the community who really know about the details of PMTCT program and services, a big number still do not know the program benefits in details. Therefore, measures should be put in place to make sure the correct and detailed information reaches the community.

Kisii level 5 hospital promotes PMTCT services, however there is a need to do a quantitative study to find out if the information given during counseling is enough and useful to pregnant women and to see if more counseling sessions are needed for pregnant women during antenatal visits.

There is need to increase on the human resource to handle the PMTCT program in Kisii level 5 hospital. This can be done by training more PMTCT counselors to handle the big number of the pregnant women who seek antenatal services.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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