

A Survey of the Perception of Women Attending Antenatal Clinics about HIV Transmission and Prevention within the Cape Coast Metropolis

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Abstract: *The aim of the study was to identify the barriers hindering the prevention of mother-to-child transmission (PMTCT) of HIV among women attending antenatal clinics in the Cape Coast Metropolis. A descriptive cross-sectional research design was employed for the study. The convenient sampling procedure was used to select 191 pregnant women attending antenatal clinics while 10 nursing managers were purposively chosen. In all, 201 participants responded to an individually administered questionnaire. It emerged from the study that out of the 201 participants, most of the participants indicated that they had adequate knowledge about the modes of transmission of mother-to-child transmission of HIV. The study also revealed that most of the participants had positive attitude towards PMTCT services. Based on the findings, it was recommended that health education relating to mother to child transmission of HIV and its prevention at the antenatal clinics should be intensified. This would empower women of child bearing age to understand the importance of PMTCT, the mode of transmitting HIV to their infants and the services available. It is further recommended that curriculum for nurses and physician should emphasize issues on MTCT, PMTCT and HIV*

Keywords: Antenatal, HIV, Transmission, Prevention

1. Background of the Study

According to the World Health Organisation (WHO), an estimated 430,000 children were infected with human immunodeficiency virus (HIV) worldwide in 2008 (WHO, 2008). This translates to over 11000 new infections in children each day, the majority of which occur in sub-Saharan Africa. Mofenson & Chilubwa (2010) further argued that the primary mode of HIV acquisition in children worldwide is through mother-to-child transmission (MTCT) during pregnancy, childbirth, or breastfeeding.

Before the development of effective interventions to reduce MTCT of HIV infection, estimated MTCT rates were relatively high and varied in different parts of the world. There were 15% to 25% rate of infection among non-breastfeeding populations in North America and Europe and 25% to 40% among breastfeeding populations in resource-limited countries (DeCock, Fowler & Mercier, 2000). Moreover, it has been reported in most studies in US and Europe that transmission rates in untreated women ranged from 12% to 30% (Jebssa & Teka, 2005). In contrast, transmission rates documented in Africa and Haiti were higher than the reported rates in the US and Europe which ranged from 25% to 52% (Thorne & Newell, 2007). South Africa has one of the highest prevalence rates of HIV/AIDS in the world, with 5.7 million people currently infected. The prevalence rate of South African women of childbearing age is almost 30%, and it is estimated that 40,000 children are born with HIV every year (Nestler & Blystad, 2011).

The 2011 national prevalence rate of HIV in Ghana was 1.5% with an estimated 230,000 persons living with HIV (PLHIV) of which 110,000 are women aged 15 years and above while 3,100 are children under 15 years. Though this prevalence rate is very low in Africa (with prevalence rate

among adult standing at 4.6%), this rate is relatively high compared with that of America, South-East Asia and Europe with 0.5%, 0.3% and 3.8% respectively (WHO, 2013). The rate of HIV infection among women in Ghana has implications for mother-to-child transmission of HIV (MTCT) since an HIV infected woman can transmit the virus to her baby during pregnancy, labour and delivery, or breastfeeding (Nyuzaghl, Ohene & Odoi Agyarko, 2011). In Ghana, as in most Sub-Saharan African countries, mother-to-child transmission of HIV is the second most common mode of transmission and it accounts for approximately 15% of all new infections in the country (WHO, 2013). Without treatment, around 15-30% of babies born to HIV infected women will become infected with HIV during pregnancy and delivery. A further 5-20% will become infected through breastfeeding (DeCock et al., 2000). In Ghana, USAID (2005) in a study also reported that MTCT accounts for 15% of HIV transmission.

The mother-to-child HIV transmission rate has decreased from 33% in 2009 to 25% in 2011 but this is in contrast with what occurs in the developed countries where less than 2% of HIV positive mothers transmit HIV to their babies. This is achieved through routine HIV testing of all pregnant women, provision of anti-retroviral therapy (ART), safe delivery practices, and counselling and support on infant feeding. A lower level of mother to child transmission rate is thus required to decrease the national HIV prevalence rate (Nesheim, Mermin, Whitmore, Thomas-Proctor, Fenton, Taylor, Kilmarx, 2012).

2. Statement of the Problem

In response to the high rate of mother-to-child transmission of HIV, an intervention known as PMTCT of HIV, which provides drugs, counselling and psychological support to

help mothers safeguard their infants against the virus has been instituted worldwide. Studies have shown that MTCT is preventable in about 80% or more. However, this is dependent on early detection of the disease before treatment is prescribed (UNAIDS, 2001). For PMTCT to be successful, every woman, especially of child-bearing age, needs to be empowered with the knowledge regarding HIV infection, the risks of transmission to her baby, and the services available to reduce the risk.

In Ghana, PMTCT is defined as a comprehensive family centred continuum of promotive, preventive, clinical and supportive services provided in conjunction with other public health interventions to prevent the transmission of HIV from a mother to her infant(s). Ensuring that no baby is born with HIV is an essential step towards achieving an AIDS-free generation. The interventions so far are targeted at HIV positive women during pregnancy, labour and delivery and feeding of the baby (MOH, 2003).

The risk of mother-to-child transmission of HIV can be reduced to less than five percent through a combination of preventive measures including antiretroviral therapy (ART) for the expectant mother and her newborn child, hygienic delivery conditions and safe infant feeding. According to new guidelines issued by the World Health Organization, a woman with HIV can breastfeed her baby in settings which are judged by experts to be the safe for feeding infants. Moreover, exclusive breastfeeding should be resorted to by the mother of the newborn (UNICEF/NYHQ, 2005).

Although, several studies have documented the efficiency of the PMTCT in reducing the MTCT, but the studies also unearthed certain barriers. For example, Nestler (2011) in a study revealed that PMTCT services at various levels included individual, interpersonal, community and institutional policy. However, few studies have been done globally and in Ghana to assess barriers associated with the implementation of the programme. Some barriers revealed in previous studies include the lack of knowledge about HIV and PMTCT, knowledge of the HIV status of mother and infant, attitudes and fear of HIV. Other barriers centred on socio cultural and traditional beliefs. For instance, it is believed that pregnancy is a woman's affair and the man's role is primarily to provide financial support for the woman's care. This reduces the support given to wives especially in view of testing for HIV and possibly participating in PMTCT services. Since the inception of the program within the Cape Coast metropolis, there are limited researches to document how women in Ghana are embracing the intervention program. Hence, there is the need for a study to be conducted to investigate the barriers associated with the implementation of the program.

3. Methodology

Research design

A descriptive cross-sectional research design was employed for this study. This attempts to describe and explore a phenomenon in a real life situation and also generates new knowledge about the topic (Burns & Grove, 2005). It also has the advantage of cost-effectiveness and also promotes faster and easier way to collect data.

Data Source and Sampling Technique

Primary data sources was used and subjects of the study were pregnant women attending antenatal clinics of selected hospitals in the Cape Coast metropolis and nurse managers in these antenatal clinics. Purposive sampling was employed to select 10 nurse managers from the metropolis and convenient sampling procedure was used to select 191 pregnant women attending antenatal clinics in the metropolis.

Data collection and analysis

Questionnaire was used to collect data from both the nurse managers and the pregnant women of which there 100% return rate. After compilation of the data collection, nurse managers and pregnant women responses were coded and entered in SPSS version 20 software for statistical analysis. Descriptive statistics (frequency, percentages) was used to describe the data. Regression analysis was used to estimate the relationships among the variables and used to infer causal relationships between the independent and dependent variables. Factor analysis was used to describe variability among observed, correlated variables in terms of a potentially lower number of unobserved variables.

4. Results

1) Knowledge level of women attending antenatal clinics on HIV, mother-to-child transmission of HIV and their awareness of the PMTCT services.

Table 1 revealed that a large proportion (48.2%) of the women did not know that HIV could be transmitted from a mother to her child through the placenta. Although slightly more than half of them knew, the number of those who did not know is concern. Also, with respect to their knowledge on the transmission of the disease through a contact of serous fluid from the mother to the child, about 57% of them agreed whilst the remaining indicated otherwise. It appears that the respondents had more knowledge about the breast milk transmission of HIV as reported by 160 (83.8%) of them. In conclusion, the average number of the women who had adequate knowledge of the various mother-to-child HIV transmission modes was 122 representing 63.9%.

Table 1: Knowledge Level of Women Attending Antenatal Clinics on HIV, Transmission and PMTCT Services (n=191)

Variables	Responses	
	Yes (%)	No (%)
Mother-to-child transmission of HIV is acquired through:		
Placenta	97 (50.8)	94 (48.2)
Contact of serious fluid from the mother to the child	108 (56.5)	83 (43.5)
Breast milk	160 (83.8)	31 (16.2)
Average	122 (63.9)	69 (36.1)
PMTCT services comprises of the following:		
Prenatal screening for HIV	170 (89.1)	21 (10.9)
Counselling services	173 (90.6)	18 (9.4)
Antiretroviral therapy	118 (61.8)	73 (38.2)
Continue supportive counselling for all HIV positive pregnant women	164 (85.9)	27 (14.1)
Counselling and support for infant feeding	165 (86.4)	26 (13.6)
Child welfare clinic	153 (80.1)	38 (19.9)
Home visit	89 (46.6)	102 (53.4)
Mother support groups	106 (55.5)	85 (44.5)

Average	142 (74.5)	49 (25.5)
Source: Fieldwork, 2013		

Similarly, on their level of awareness about PMTCT services available in the metropolis, about 89% of them knew that every pregnant woman should be screened for HIV. A large proportion of them also were aware of the availability of counselling services at the various health facilities in the metropolis. Out of the 191 women, 73 (38.2%) of them were found to be unaware of antiretroviral therapy for those that might tested positive for HIV during their PMTCT activities. As much as 80 percent of the pregnant women claimed to have known about child welfare clinic in the metropolis. It was also noted that only 46.6 percent of them knew that they were to be regularly visited at home by health personnel.

However, more than half of the pregnant women were fully aware of the existence of mother support groups who are into offering morale support to especially first-time mothers and those with peculiar medical conditions. The results showed that on the average 74.5% of the women were aware of the PMTCT services in the metropolis; implying that the various dissemination strategies employed to educate women on PMTCT services in the Cape Coast Metropolis were fairly effective and efficient.

2) Attitude of women attending antenatal clinics towards the PMTCT services

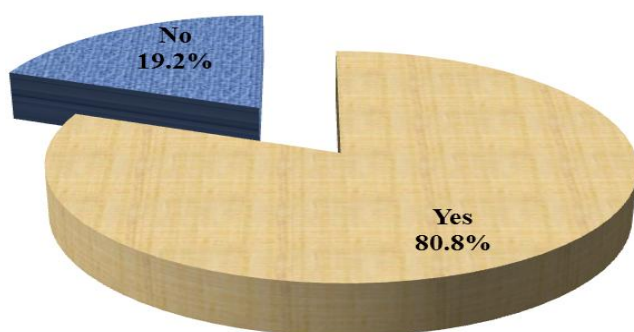


Figure 1: Women who had tested for HIV

Source: Fieldwork, 2013

As can be seen in Figure 3, a significant proportion (80.8%) of the pregnant women had already done the HIV test. The results implied that the policy of compulsory HIV testing for all pregnant women in the country is really been enforced. It can be inferred that the remaining 19.2% of them were yet to undergo such screening.

From Table 2, with a mean value of 4.56, the pregnant women generally strongly agreed that it was important for people to test for HIV when getting married. Responses were similar as this statement recorded a relatively low variation. Similarly, the respondents highly agreed that pregnant women should be screened for HIV just as they reported that all HIV positive pregnant women should be referred to institutions where they could be monitored. The respondents also were in the agreement that now that they were pregnant, they would do an HIV test because of the availability of treatment in case they test positive.

Table 2: Attitudes of Pregnant Women towards PMTCT Services (n=191)

Attitudes (Variables)	Mean	Standard Deviation
It is important for people to test for HIV when getting married.	4.56	0.837
Pregnant women should be screened for HIV.	4.54	0.879
Referral of HIV positive pregnant women to institutions where they can be monitored.	4.52	0.877
Now that I am pregnant, I will do an HIV test because of the availability of treatment in case I tested positive.	4.51	0.716
It is important for people to test for HIV to know status.	4.48	0.859
HIV infected woman may not breastfeed her child if there is a risk of infection.	4.45	0.972
HIV infected pregnant women must deliver with skilled personnel.	4.38	1.037
HIV infected woman may not breastfeed her child if there is risk of infection.	4.33	1.073
It does not help to have HIV mothers referred to other services it is stressful.	4.17	1.105
Pregnant women should be screened for HIV.	4.13	1.075
Now that I am pregnant, I will do an HIV test because it is beneficial	4.09	1.098
Now that I am pregnant, I will do an HIV test because of the confidentiality of my status.	4.05	1.148
It is important for people to test for HIV when people are sick and at risk.	4.03	1.206
It is important for people to test for HIV when travelling to get a visa.	3.62	1.455
HIV infected pregnant women must deliver with skilled personnel.	3.58	1.311
It is important for people to test for HIV for employment screening.	3.53	1.399
It does not help to have HIV mother referred to other facilities because it is stressful.	3.45	1.322
Now that I am pregnant, I will do an HIV test if it is free.	3.08	1.42
Now that I am pregnant, I will do an HIV test if my partner agrees.	2.89	1.353

Source: Fieldwork, 2013

With a mean rating of 4.48 and variation of 0.859, the pregnant women agreed that it was important for people to test for HIV to know their status. This shows the extent to which the education on PMTCT services had reached the metropolis. It was however evident that, although the respondents generally rated high issues of confidentiality on HIV status at health facilities in the metropolis, there still remained some who were not fully convinced. This was reflected in the large standard deviation (SD=1.148) obtained on this item. The relatively low rated items included "It does not help to have HIV mother referred to other facilities because it is stressful (M=3.45; SD=1.322)", "Now that I am pregnant, I will do an HIV test if it is free (M=3.08; SD=1.420)" and "Now that I am pregnant, I will do an HIV test if my partner agrees (M=2.89; SD=1.353)". The low mean value for the last statement implied that the pregnant women knew that undergoing HIV screening as a pregnant woman was compulsory and one did not need any permission from her partner. The overall mean of 4.02 out of 5.00 with variability of 1.113 was an indication that the respondents generally had positive attitudes towards PMTCT services in the metropolis. The above conclusion was confirmed by the pie chart results below as those who

scored a composited value of at least 40 out of 50 (i.e. 93%) were classified as having positive attitudes and otherwise, negative attitudes.

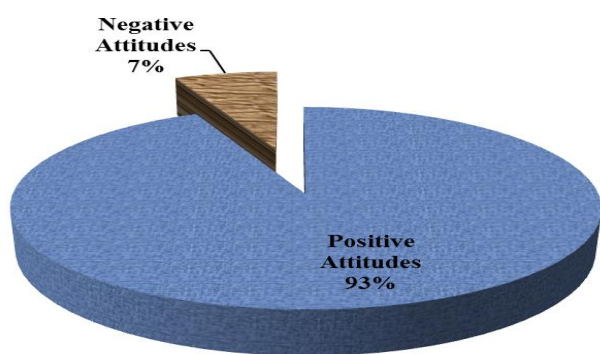


Figure 2: Classification of the Attitudes of the Pregnant Women

Source: Fieldwork 2013

Figure 2 shows that an overwhelming percentage of the pregnant women (93%) were classified as having positive attitudes towards PMTCT services in the Cape Coast Metropolis. This implied that they had favourable and recommendable views about the PMTCT services provided in health centres in the metropolis.

Table 3: Belief System of Women attending Antenatal Clinics on HIV/AIDS (Overall Mean=3.71), (n=191)

Belief system (Variables)	Mean	SD
HIV cause		
HIV is caused by a virus	4.61	0.924
HIV is a blood disease	4.56	0.923
HIV is a disease that results from a curse	2.4	1.461
HIV is a punishment from God	2.28	1.318
HIV is caused by witchcraft	2.21	1.329
Grand mean	3.21	
HIV Transmission		
HIV can be transmitted through blood transfusion	4.61	0.846
HIV can be transmitted through breast milk	4.55	0.878
HIV can be transmitted through the use of unsterile instruments e.g. injection using unsterile needles	4.53	0.821
HIV can be transmitted through the activities of barbers, manicure pedicure	4.29	1.088
HIV can be transmitted through heterosexual intercourse	3.87	1.331
HIV can be transmitted through kissing	3.75	1.444
Sharing of towel and spoons	2.31	1.219
Casual contact such as hugging and handshakes	2.27	1.324
Transmitted through sleeping in the same room with infected individual	1.94	1.135
Grand mean	3.57	
Signs of Person with HIV/AIDS		
Weight loss is a symptom of AIDS	4.62	0.701
Prolonged fever is a symptom of AIDS	4.53	0.896
Chronic diarrhoea is a sign of AIDS	4.48	0.93
Recurrent boils is a sign of AIDS	4.21	1.149
Chronic cough is a sign of AIDS	4.16	1.137
Rashes is a sign of AIDS	4.08	1.25
Herpes zoster (ananse) is a sign of AIDS	3.7	1.325
Grand mean	4.25	

How to Avoid HIV/AIDS		
Do not used an unsterile needle	4.65	0.703
Do not receive unscreened blood	4.65	0.748
Being faithful to partner	4.58	0.875
Have sex with condom	4.56	0.746
Avoid sex-workers	4.48	0.976
Not sharing razor, clippers	4.45	1.023
Not sharing manicure tools	4.41	1.061
Not having sex at all	3.72	1.349
Not touching AIDs patients	2.21	1.362
Have sex with known people	2.17	1.259
Wash vagina after sex	1.99	1.188
Grand mean	3.81	

Source: Fieldwork, 2013

The mean rating and standard deviations were computed for each item and an average mean and variations were used to conclude on their belief system. Table 3 is a summary of their responses. The analysis revealed that the respondents strongly believed that HIV disease was caused by a virus as reflected in their average rating ($M = 4.61$, $SD = 0.924$) of the item. The pregnant women were in agreement that HIV was a blood disease. This statement attracted an average rating of 4.56 with a variability of 0.923. However, they generally refuted the assertions that the disease (HIV) was a curse, a punishment from God, and the work of witchcrafts. This further confirmed their relatively high knowledge of this highly infectious and deadly disease.

With regard to the modes of HIV transmission, the pregnant women agree that HIV is transmitted through blood, breast milk, the use of unsterile instruments, e.g. injection using unsterile needles, the activities of barbers, manicure and pedicure as the main modes of transmitting the disease. Indeed, these modes of transmission of HIV are regarded as main and easy ways of becoming infected. Furthermore, the respondents generally disagreed that the disease could be transmitted via sleeping in the same room with an infected person and casual contact such as hugging and handshakes since they rated them with mean ratings of 1.94 and 2.27, respectively. They also somewhat disagreed ($M = 2.31$; $SD = 1.219$) with the assertion that HIV could be transmitted by sharing of towels and spoons.

The respondents identified weight loss ($M = 4.62$; $SD = 0.701$), prolonged fever, chronic diarrhoea, recurrent boils, chronic cough, and rashes as some of the key signs and symptoms of AIDS. Their knowledge level on the signs and symptoms of AIDS was comparatively higher than other dimensions of the belief system assessed as it recorded an average mean rating of 4.25. When asked about the avoidance of the disease, they agreed that one should avoid the use of unsterile needles, avoid receiving unscreened blood, being faithful to one's partner, and always having sex with condom. Others included the avoidance of sex-workers, not sharing razor, clippers, and manicure tools. They, however, disagreed that one could avoid the disease by not touching an infected persons, having sex with only known people and washing the vagina after sex. It can be deduced that the pregnant women were well-informed about the strategies of avoiding HIV infection.

4. Discussion

In this study, the major findings about knowledge level of the women attending antenatal clinics on HIV, mother-to-child transmission and their awareness about the various PMTCT services were that, 74.5% of the pregnant women were aware of the PMTCT services in the metropolis. An average number of the women had adequate knowledge about MTCT of HIV as 63.9% knew the various modes of transmitting MTC HIV. These findings are congruent to those of Nyuzaghl et al (2011), Moses (2009), MalajuandAlene,(2012) and Hembah-Hilekaan et al(2012) who reported a high level of knowledge towards prevention of mother to child transmission (PMTCT) of HIV infection among pregnant women. However, these results are contrary to what Ghana Demographic and Health Survey (2010) and Addo (2005) reported. The implication for these findings is that, health education should be intensified in the metropolis to empower women of child bearing age on PMTCT services.

Another major finding about the attitudes of pregnant women attending antenatal clinics towards PMTCT services revealed that, the pregnant women were well-informed about the strategies of avoiding HIV infection. Also majority of the pregnant women (93%) had positive attitudes towards PMTCT services which were determined by their belief systems. These findings are consistent with those of Tagatan (2010) and Eme et al., (2012), who reported a positive attitude among antenatal attendees. However, these results are contrary to that of Moses (2009) and Olugbenga-Bello et al., (2013) who reported that, a significant portion of the study population (pregnant women) had poor attitudes towards PMTCT of HIV. This implies that the pregnant women in the metropolis had favorable and recommendable views about the PMTCT services provided by the health centres in the metropolis. Therefore, the health facilities should continue with their health education programmes on HIV in their various antenatal clinics.

5. Conclusions

From the findings of the study, a number of conclusions could be drawn. Average number of the pregnant women in the Cape Coast metropolis had adequate knowledge on the modes of transmission of mother to child HIV. Majority of the pregnant women in the metropolis were aware of the PMTCT services implying that the various dissemination strategies employed to educate women on PMTCT services in the Cape Coast Metropolis were fairly effective and efficient. The study also found that majority of the pregnant women have positive attitude towards PMTCT in the Cape Coast Metropolis and are well-informed about the strategies of avoiding HIV infection. This was as a result of the respondents given positive responses when their belief about HIV was tested.

6. Recommendations

Based on the findings and conclusions drawn from this study, the following recommendations are made to the Ministry of Health, Regional Health Directorate, District Health Directorate in the Cape Coast Metropolis as well as

the management members of the three hospitals used for the study (Central Regional Hospital, Cape Coast Metropolitan Hospital and University of Cape Coast Hospital).

- 1) Curriculum for nurses and physician should include MTCT of HIV, its prevention and other HIV/AIDS related issues. This would enable the nurses and physicians to have adequate knowledge on PMTCT in order to give the best of care to their client.
- 2) The findings from the study showed that, an average number of the women had adequate knowledge on PMTCT. Therefore health education should be intensified on MTCT, PMTCT and HIV related issues at the ANC. This will empower women of child bearing age about the importance of PMTCT, the risk of transmitting HIV to her infant and services available.
- 3) Guidance and counselling units in the health facilities should sensitize pregnant women attending antenatal clinics in the metropolis on HIV and mother to child prevention. This can be done by encouraging and explaining the need to test for HIV and PMTCT services available to support them if one tests positive.
- 4) Creating community awareness on behaviours necessary to prevent MTCT is an essential step to improve participation in and adherence to interventions that are part of PMTCT programmes. It is therefore, recommended that Ghana Aids Commission as well as donor agency and NGOs in the fight against HIV should engage in diversified sensitization approach which seeks to target all categories of people in order to enhance behavioural change. Although it is individual women who are most directly involved in adopting recommended PMTCT behaviours, the support of male partners and elder female family members who often affect practices associated with pregnancy and birth is particularly important.

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Author Profile



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Harriet Ampofo is a lecturer at the University of Cape Coast, Department of Adult Health. She is a professional nurse and a professional teacher as well. She studied at the Nurses and Midwifery Training College in Berekum, Ghana, where she was awarded diploma in general nursing certificate. She continued her nursing education at the University of Cape Coast, Ghana and obtained Bachelor of Science in Nursing Degree as well as Master of Nursing Degree. To be very proficient in the field of teaching, Harriet Ampofo studied Post Graduate Diploma in Education and was awarded a certificate by the same University. Her research concentration is in the area of adult health (medical surgical) as well as maternal issues and desire to advance in that area to promote the health of adults in the Cape Coast Metropolis and the country at large.