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LEGON.

ACCEPTABILITY OF THE OPT-OUT COUNSELLING AND TEST FOR PREGNANT WOMENIN THE WA MUNICIPALITY;

A FACILITY BASED STUDY.

BY

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DECLARATION

I declare, that this work was an independent work under the supervision of Dr. Sally Ohene, Dr Kwasi Odoi-Agyarko and Madam Basilia Salia. Except for references to other people's work which have been duly acknowledged, this work has neither in part nor in whole been submitted anywhere for the award of any degree.

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DEDICATION

This piece of work is dedicated to my mother and late father.

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ABSTRACT

Background/Objectives:

Mother-to-child transmission (MTCT) of HIV is a major contributor of paediatric HIV infection. HIV counselling and testing during pregnancy constitutes an important step in prevention. Acceptability of HIV test among women who voluntarily request to know their HIV status (opt-in) has been found to be rather low and yet the number of pregnant women with HIV in the Wa Municipality has almost doubled, from 3.2 per cent in 2006 to 5.8 per cent in 2007. To address this problem, HIV counselling and testing is routinely offered to all pregnant women who seek antenatal care, with an option to opt-out if they don't want to test. This study was conducted to determine the acceptability of the opt-out test as a strategy for the prevention of mother-to-child transmission (PMTCT) of HIV.

Methods: The study was a facility based cross-sectional study involving 270 pregnant women from two health facilities. Pregnant women were randomly selected through a balloting process and a questionnaire administered to consenting individuals.

Results: More than half, 58.5 per cent (158) of the study sample tested for HIV in the current pregnancy. Interestingly, of those who had not tested for HIV, 61 per cent (68) did not test because the test was not offered to them at antenatal care (ANC). Of these 82.4 per cent (56) expressed willingness to get tested if offered an HIV test. More than half of the respondents 58.6 per cent (157) expressed fears that the opt-out test could prevent women from seeking antenatal care; however 88.1 per cent (37) of the women who refused HIV testing were still willing to attend ANC. Awareness of the opt-out policy was high among the respondents 81.9 per cent (221) and majority of the women 90.7 per cent (245) were in favour of the opt-out policy. Despite the high knowledge of respondents on MTCT of HIV through pregnancy 79.4 per cent (177), knowledge of HIV transmission during labour 24.2 per cent (54) and breastfeeding 19.3 per cent (43) was poor. A large proportion of the respondents were however aware of the existence of a special drug to prevent MTCT 75.6 per cent (115).

Conclusion: The opt-out testing policy is acceptable to pregnant women in the Wa Municipality and awareness on the policy is high. Pregnant women in the Municipality are still willing to attend ANC even if they know they would be offered

an HIV test. An increase in the number of trained counsellors would ensure that every pregnant woman who visits the facility is offered the test.

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AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal Care
AZT/3TC	Zidovudine and Lamivudine
CS	Caesarean Section
CT	Counselling and Testing
ECS	European Collaborative Study
GDHS	Ghana Demographic and Health Survey
HIV	Human Immune Virus
HIVNET012	HIV Network for Prevention trial group 012
HSS	HIV Sentinel Survey
MTCT	Mother-to-child Transmission of HIV
NACP	National AIDS Control Program
NVP	Neverapine
PLWHAs	People Living with HIV/AIDS
PMTCT	Prevention of Mother-to-child Transmission of HIV
PAGT076	Paediatric AIDS Group trial 076
SPSS	Statistical Package for Social Sciences
UN	United Nation
UNAIDS	United Nations Commission on AIDS
UNGASS	UN General Assembly Special Session on AIDS
W.H.O	World Health Organisation

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background

The Acquired Immune Deficiency Syndrome (AIDS) pandemic continues to take a heavy toll on the world's population despite the numerous efforts being implemented to curb the disease. According to the United Nation's commission on AIDS(UNAIDS), about 33.2 million people were estimated to be living with HIV worldwide as at December 2007, with about 2.5 million new infections and 2.1 million deaths due to AIDS(UNAIDS,2007).

Globally in 2007, 420,000 children were newly infected with the AIDS virus which translated to about 1,200 new infections every day (UNAIDS, 2007). An estimated 2.5 million children below the age of 15yrs are thought to be living with the Human Immune Virus (HIV) as at 2007, representing 7.5 per cent of all the people living with HIV globally. Most of these infections occurred in Sub Saharan Africa (UNAIDS 2007).

The HIV situation in Ghana is a generalised epidemic, with the recent HIV Sentinel Survey (HSS) report (2007), indicating prevalence persistently above 1 per cent in all the administrative regions in the country. The Northern Region has the minimum median prevalence of 1.7 per cent whilst the maximum prevalence of 4.2 per cent is in the Eastern Region. The Upper West Region where the study was conducted has a prevalence of 3.3 per cent. According to the HIV Sentinel report (2007), there has

been a significant decline in the national median HIV prevalence in the past two years from 2.7 per cent in 2005 to 1.9 per cent in 2007, with about 264,481 Ghanaians living with HIV. Even though the prevalence of HIV in Ghana is relatively low compared with other West African and Southern African countries, there is still the need to pursue vigorously HIV/AIDS prevention programs that would help consolidate the gains that has already been made.

The burden of HIV in Ghana according to the HIV Sentinel report of 2007 has been found to be greater in women than in men. In 2007 about 153,815 women were thought to be living with HIV/AIDS compared with 110,666 males. This obviously has implications for mother-to-child transmission of HIV in the country. A woman who is infected with HIV can pass the virus to her baby during pregnancy, labour and delivery, or during breastfeeding. According to the Ghana Statistical Service (GSS), mother-to-child transmission of HIV is responsible for about 15 per cent of all HIV cases in Ghana (GSS, 2004). The estimated risk and timing of mother-to-child transmission (MTCT) of HIV in the absence of intervention is 5 to 10 per cent during pregnancy, 10 to 15 per cent during labour and delivery, and 5 to 20 per cent during breastfeeding (De Cock et al., 2003).

The cornerstone of a successful Prevention of Mother-to-child Transmission (PMTCT) of HIV/AIDS is increased HIV testing among pregnant women. This enables such women to know their HIV status through counselling and testing (CT) and take advantage of PMTCT intervention programs, to reduce HIV transmission to the new born if they are found to be HIV positive. In line with government commitment to reducing mother-to-child transmission, counselling and testing centres

were started at Atua and St. Martin's hospitals in the Eastern region of Ghana, where new attendants at antenatal clinics were informed of the benefits of counselling and testing in prevention of mother-to-child transmission (PMTCT) of HIV, and those who wanted to know their HIV status opted to be tested. Since then, modest gains have been made in the prevention of mother-to-child transmission of HIV in Ghana. According to the National AIDS Control Program (NACP), as at December 2007;

a) 408 Prevention of Mother-to-child Transmission centres for HIV were established.
b) 140,200 pregnant women were taken through counselling and testing as part of prevention of mother-to-child transmission of HIV in government and private health institutions.
c) 4,235 HIV positive pregnant women were put on antiretroviral drugs to reduce MTCT of HIV.

Despite the modest gains, acceptance of HIV CT in pregnancy has been generally low in the country. According to the 2007 Ghana Health Service (GHS) annual report, out of 308,329 antenatal registrants only 114,486 (37.1 per cent) were tested for HIV. In response to the low HIV testing in pregnancy, the World Health Organisation (WHO) has encouraged the opt-out HIV testing strategy for member countries (WHO, 2004). This policy has been adopted by the Ghana National AIDS control program and is the strategy for HIV testing for all pregnant women seeking antenatal care. In the opt-out HIV testing strategy, HIV test is offered routinely to all pregnant women attending antenatal care even though they may be asymptomatic for HIV. The emphasis has changed from client initiated as in voluntary counselling and testing to provider initiated counselling and testing. The test is still voluntary, with the option to refuse

testing (opt-out). The Wa municipality in line with current policy adopted the opt-out testing strategy for all pregnant women seeking antenatal care in an attempt to improve on HIV testing during pregnancy. This study was conducted to find out the acceptability of the opt-out HIV testing arrangement among pregnant women in the Wa municipality.

1.2 Problem Statement

According to the Ghana Statistical Service (GSS), 91 per cent of all women in the Upper West Region have never taken an HIV test and 41.8 per cent of pregnant women who attended antenatal care in the Upper West Region received counselling for HIV, of which only 2.5 per cent accepted an HIV test (GSS, 2004).

In line with scaling-up counselling and testing in the prevention of mother-to-child transmission of HIV services, a counselling and testing centre was established in the Wa regional hospital to offer counselling and testing for HIV to all pregnant women seeking antenatal care. The main aim of the CT centre was to identify all HIV positive women during antenatal care to enable them take advantage of highly active antiretroviral drugs to reduce the risk of HIV transmission from mother-to-child.

Acceptance of HIV testing among pregnant women in the Wa municipality has been generally low since the CT centre was started in 2005, and as a result uptake of PMTCT service intervention is not growing as much as desired. In 2006 out of 2734 antenatal registrants in the Wa hospital only 153 pregnant women accepted an HIV

test (Wa Municipal Health Directorate Annual Report, 2006). According to the report the reasons for the low rate of testing are as follows:

a) Inadequate knowledge about the benefits and importance of CT
b) Community stigma against people living with HIV/AIDS (PLWHAs)
c) Lack of partner understanding and support
d) Attitude of health workers and
e) Conflicting media messages.

HIV infected women who become pregnant in the Municipality are therefore placing their babies at risk of HIV infection either: in utero, during delivery or during breastfeeding.

1.3 Justification for the study

The prevalence of HIV among pregnant women has almost doubled in just a year in the Wa Municipality according to the 2007 HIV Sentinel report. HIV prevalence among pregnant women increased from 3.2 per cent in 2006 to 5.8 per cent in 2007, the second highest out of 40 HIV sentinel sites in the country. The potential for mother-to-child transmission of HIV therefore exist in the Wa Municipality given the low testing rates among pregnant women.

Studies in developed and developing countries suggest a significant increase in HIV test acceptance among pregnant women who are offered an HIV test on an opt-out basis. Such an approach has been shown to increase HIV testing in settings such as the USA (Chou et al, 2005). In Botswana introduction of the opt-out test policy led to

an increase in HIV testing among pregnant women from 75 per cent to 91 per cent (Seipone et al, 2004) .

Despite the usefulness of this policy in improving HIV test acceptance, some studies (Perez et al, 2006; Weiser et al, 2006) have also suggested, that the opt-out policy has the potential to deter pregnant women from seeking antenatal care (ANC). Others have suggested that the fundamental human rights of the pregnant woman to refuse an HIV test may be infringed upon because of the way the HIV test is offered.

In Ghana, to the author's knowledge no study has been done to assess the acceptability or otherwise of the new policy among pregnant women. However considering the benefits of identifying HIV positive women for PMTCT, this research is needed to document pregnant women's experiences in the Wa Municipality with provider-initiated, opt-out HIV testing. Understanding women's experiences would help in the formulation of feasible and effective strategies to support women and ensure that they gain access to HIV treatment services.

1.4 OBJECTIVES

This section outlines the broad and specific objectives for undertaking this study.

1.4.1 General Objective

To determine the acceptability of the opt-out counselling and testing for HIV as a strategy for the prevention of mother-to-child transmission of HIV, among pregnant women in the Wa Municipality.

1.4.2 Specific Objectives

1. To determine the knowledge of pregnant women with regard to MTCT of HIV.

2. To determine the level of awareness and what pregnant women think about the opt-out testing strategy.

3. To identify and describe factors associated with the acceptability of the opt-out HIV test.

4. To determine the willingness of pregnant women to attend antenatal care if they know they will be offered an HIV test.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Mother-to-child Transmission of HIV

The overall risk of mother-to-child transmission of HIV is associated with factors that can be attributed to the HIV virus, the mother, obstetric practice, foetal and infant factors (Newell, 2001).

An increased plasma viral load has been strongly associated with increased risk of mother-to-child transmission of HIV (Mayaux et al, 1997) whilst a high viral load in cervico-vaginal secretions and breast milk has been found to play a significant role in mother-to-child transmission of HIV during labour and breastfeeding (Clemetson et al, 1993).

In the mother a reduced immunological status reflected by a low CD4 count has been found in the European Collaborative Study (1996) to be associated with an increased risk of mother-to-child transmission. Mothers with low vitamin A levels are at about 4.4 fold increased risk of transmitting the virus to their babies at delivery than those with normal levels of vitamin A (Semba et al, 1993). Even though the mechanism of vitamin A effect is uncertain, the influence of vitamin A on the integrity of the vaginal mucosa or placenta and the immune stimulatory properties of vitamin A has been suggested (Landers, 1996).

Obstetric factors have also been implicated in mother-to-child transmission of HIV, vaginal delivery and prolonged rupture of membranes, which increases the contact time between the infant and HIV-infected maternal body-fluids (cervico-vaginal secretions and blood); have been linked with increased risk of transmission (International Perinatal HIV group, 1999). Pre term babies have been found to be more at risk of HIV infection than their term counterparts (Newell et al, 1997) and in twin delivery, the first twin has been found to be more at risk of HIV infection than the second twin (Duliege et al, 1995).

Breastfeeding has been found to be responsible for a high proportion of mother-to-child transmission of HIV in developing countries. This is less common in the developed world, where many HIV-positive women do not breastfeed. On the average, about 16.2 per cent of babies born to HIV infected mothers will become infected through sustained breastfeeding (Nduati et al, 2000). A study in Soweto found HIV transmission rates of 18 per cent in formula fed infants compared with 42 per cent in breastfed (Dunn et al, 1992). Rates are higher when the mother sero-converts during breastfeeding, where the estimated risk is around 30 per cent (Dunn et al, 1992). The risk of breast milk transmission may also depend upon other factors, such as maternal disease stage, breast abscesses, mastitis, nipple cracks and oral thrush in the child (Van de Perre et al, 1992). A Zimbabwe study showed that 31 per cent of breastfeeding mothers of HIV-1 infected children had active nipple disease (Kambarami et al, 1997). The pattern of breastfeeding may also influence the risk of transmission; babies who are exclusively breastfed may have a lower risk of

becoming infected than those who also consume other liquids, milks, or solid foods in the first months of life (Coutsoudis et al, 1999; Coutsoudis et al, 2001; Smith and Kuhn, 2000).

In conclusion, Knowledge about the likely timing of transmission of HIV is important for the design of possible interventions to help prevent mother-to-child transmission of HIV.

2.2 Prevention of Mother-to-child Transmission (PMTCT)

Prevention of mother-to-child transmission of HIV has been identified as one of five priority areas for response at the United Nations Special Session on HIV/AIDS in 2001. The Declaration of Commitment adopted at the UN General Assembly Special Session on AIDS (UNGASS) set a goal of reducing the proportion of infants infected with HIV by 50 per cent by 2010 (UNGASS,2001).

To reach the UNGASS goal, the UN has developed a comprehensive approach which includes comprehensive HIV/AIDS prevention measures and a continuum of appropriate care for mothers and their children. The four-pronged strategy includes:

a) Prevention of HIV infection in general, especially in young women and pregnant women.
b) Prevention of unintended pregnancies among HIV infected women.
c) Provision of care, treatment and support to HIV infected women, and their infants and families and

d) Prevention of HIV transmission from HIV-infected women to their infants (UNGASS, 2001).

Significant advances have been made since the land mark Paediatric AIDS Treatment Group (PAGT076) study showed that HIV transmission rates could be reduced by 66 per cent using a long course of zidovudine (Connor et al 1994). In Uganda the simplest of all PMTCT drug regimens was tested in the HIVNET 012 trial, and found that a single dose of nevirapine given to the mother at the onset of labour and to the baby after delivery roughly halved the rate of HIV transmission (Gray et al, 1999).

According to the PMTCT participant manual of Ghana, anti retroviral prophylaxis for the PMTCT of HIV include giving the mother a combination of antiretroviral drugs during antenatal, labour and postpartum period. One tablet each of Zidovudine/Lamivudine (AZT/3TC) combination and Neverapine (NVP) are given to the mother daily from 28 wks of gestation. During labour, the pregnant HIV woman is given one tablet of AZT/3TC and repeated in 12hrs plus a single dose of Neverapine. The regime is continued 12hrly for 7days during the postpartum period.

The newborn baby on the other hand is given AZT/3TC twice daily for seven days plus nevarapine syrup within 48hrs of delivery. In cases where the mother receives less than four weeks of prophylaxis, the infants AZT/3TC prophylaxis is extended to a period of six weeks.

To prevent mother-to-child transmission of HIV through breast milk, modification in infant feeding practices is required. Avoidance of breastfeeding, early cessation of breast feeding and avoidance of breastfeeding in the presence of breast abscess or cracked nipples can reduce mother-to-child transmission of HIV (Coutsoudis et al, 1997). However even though breastfeeding the baby carries an increased risk of HIV transmission, it is known to improve survival of infants compared with formula feeding which carries a zero risk of HIV transmission. This is because formula feeding increases the risk of infant mortality from diarrhoea related illnesses (Coovadia and Kindra, 2008).

A number of recent studies, mostly from Africa, have provided new data that enable health workers to offer HIV-positive women advice on infant feeding appropriate to their individual circumstances. The weight of current evidence favours exclusive breastfeeding for 6 months to prevent mother-to-child transmission of HIV (Coovadia and Kindra, 2008). A study in Abidjan, showed that breastfeeding for more than 6 months and mixed feeding during the first month of life, were independently associated with a 7.5 (AOR 95 per cent CI, 2.0-28.2, p=0.003)- and a 6.3 (95 per cent CI, 1.1-36.4, p=0.04)-fold increase of postnatal transmission among breastfed children. Mixed feeding during the first month of life and breastfeeding beyond 6 month are strong determinants of HIV transmission and should be avoided when replacement feeding can be safely and sustainably provided after 6months (Becquet et al,2008).

In developed countries avoidance of breastfeeding is among the cornerstones for the prevention of mother-to-child transmission of HIV. However in developing countries

the cost and uncertainties concerning women's ability to maintain strict hygiene practices, makes formula feeding undesirable. In Ghana, according to the national PMTCT training manual exclusive breastfeeding is recommended for HIV positive women for the first 6months and replacement feeding considered only when it is culturally acceptable, feasible, affordable, sustainable and safe to give (PMTCT participant manual).

Safe delivery practices such as avoiding invasive obstetrical procedures like artificial rupture of membranes, foetal scalp monitoring and episiotomy play a very significant role in preventing MTCT of HIV. In the International Perinatal Group Study (1999), elective caesarean section (CS) was shown to reduce the risk of MTCT by 50 per cent; however the procedure is often unavailable, costly and impractical, with an increased risk of post-operative complications, especially in resource constrained settings. Recent studies however seems to suggest that elective CS offers no advantage over vaginal delivery combined with antiretroviral drugs. In a study to determine whether vaginal delivery along with antiretroviral therapy and avoidance of breast feeding was safe in preventing mother-to-child transmission (MTCT) of HIV, of 174 infants delivered through caesarean section, two were HIV infected whereas 98.9 per cent (172) were HIV uninfected. Of the 48 infants delivered vaginally, 97.9 per cent (47) were HIV negative and one child was HIV infected. The authors concluded that elective caesarean section was statistically not better than vaginal delivery (Shah, 2006).

To successfully reduce mother-to-child transmission of HIV pregnant women must first know their HIV status before they can benefit from the available interventions. HIV counselling and testing during pregnancy, constitute an important entry point for PMTCT of HIV.

2.3 Types of HIV counselling and testing strategies

The world Health Organisation has identified four strategies for HIV testing according to its policy document released in 2004.They include;

a) Opt in test; in which the client initiates the process of knowing her HIV status.
b) Opt-out test; in which the health worker initiates the process of HIV testing. Clients are offered group counselling and are tested for HIV unless they explicitly say no to the test.
c) Diagnostic test; is indicated whenever a person show signs or symptoms that are consistent with HIV related disease or AIDS, it is done to aid in clinical diagnosis and management.
d) Mandatory test; is done for all blood destined for transfusion or manufacture of blood products (WHO, 2004).

Of the above four, the opt-out and opt-in test are the ones recommended for HIV testing in pregnancy since they have been found to result in behavioural change (WHO, 2004).

2.3.1 Opt-in test and HIV test acceptability

Some authorities have suggested that the willingness of a woman to accept an HIV test depends on whether the test is offered on an opt-out or opt-in basis. Several studies have shown, that HIV test acceptance among pregnant women who are offered an HIV test on an opt-in basis, tends to be rather low compared with those offered on an opt-out basis. A study conducted in Zimbabwe among 186 pregnant women attending antenatal care showed that although most women endorsed the multiple benefits of CT, uptake was low, with only 23 per cent of the pregnant women consenting to CT for HIV (Martin-Herz et al, 2000). Another study in Tanzania to identify factors associated with pregnant women's expressed willingness to accept CT for HIV showed that only 41.7 per cent of the women showed willingness to accept an HIV test (De Paoli et al, 2004). A similar study that assessed the acceptability of CT interventions to reduce MTCT in different cities in Africa showed that, the median overall acceptability of CT was 65 per cent and the main reason for refusing an HIV test was the need to discuss with their partner (Coutoux et al, 1997).

In Nigeria of 333 pregnant women receiving antenatal care at a primary healthcare centre, 78.9 per cent of pregnant women were unwilling to take an HIV test and cited fear of being infected with its consequences of stigma and discrimination as the reason for their attitude (Daniel and Oladipo, 2006).

A cross-sectional survey undertaken in the Kassena-Nankana district of Ghana, to assess the perception and attitude of 270 antenatal clinic attendants towards counselling and testing, found that although 92.6 per cent of respondents indicated a willingness to get tested, only 51 per cent considered HIV testing for pregnant women to be useful. The study also found that, knowledge of at least one mode of

MTCT HIV transmission was found to be an independent predictor of a woman's perception that getting tested was useful (Baiden et al, 2005).

A major problem with the opt-in test is the fact that it requires a pregnant woman to make an effort to get tested, an effort most pregnant women are unwilling to make unless they believe they are at risk. Some women also feel that asking to be tested for HIV is the same as publicly admitting that they have engaged in a risky behaviour.

As the HIV/AID epidemic continues to spread some experts have called for HIV screening to be offered to pregnant women on an opt-out basis in an attempt to increase HIV testing rates among pregnant women, meaning that an HIV test would be routine unless a woman actively refuses to be tested (De Cock et al, 2003).

2.3.2 Opt-out testing, HIV test acceptability and concerns

The opt-out HIV test is the standard of care in developed countries. The introduction of the opt-out testing regimes in parts of Canada, the United States and the United Kingdom led to an increased uptake of HIV testing (Jayaraman et al, 2003; De Cock et al, 2003; Simpson et al 1999).

A study in Botswana showed that in the first three months of routine opt-out testing, 90.5 per cent of women (314/347) were tested for HIV, compared with 75.3 per cent (381/506) during the final four months of opt-in testing (Seipone et al, 2004). Similarly in Zimbabwe a study that assessed the impact of routine antenatal HIV testing for preventing mother-to-child transmission of HIV, compared outcomes during the first 6 months of routine testing with the prior 6-month opt-in period. Of

the 4,551 women presenting for antenatal care during the first 6 months of routine HIV testing, 4,547 (99.9 per cent) were tested for HIV compared with 3,058 (65 per cent) of 4,700 women during the last 6 months of the opt-in testing ($P < 0.001$). The study also found that most of the women who tested said they were satisfied with counselling services and (89 per cent) stated that offering routine testing was helpful (Chandisarewa et al, 2008).

In Malawi introduction of the opt-out test resulted in an increase in HIV testing among pregnant women from 73 per cent in 2004 to 99 per cent in 2005 (Moses et al, 2008). A study in Zimbabwe found that, even though 55 per cent of pregnant women (285/520) accepted an HIV test with the opt-in test, 89 per cent of them (463/520) were willing to accept an HIV test if it would be offered on an opt-out bases (Perez, 2006).

Despite the high acceptability of the opt-out HIV test, fear has been expressed by human rights campaigners that with the change in emphasis to provider initiated testing the autonomy of the patient to freely decline or accept testing could be undermined.

A study undertaken in Kinshasa, Democratic Republic of the Congo, showed that 41 per cent of nurses and HIV counsellors believed it would be difficult for patients to opt-out of an offer of routine testing, as did 33 per cent of patients (Corneli et al, 2005). Another concern with the policy is the fact that, pregnant women may feel a sense of needing to comply with the perceived authority of health staff in favour of testing, lack of time to consider fully the information pertaining to this decision, and

the strong normative message to "get tested" that universal routine testing implies may all contribute to undermining the patient autonomy (Rennie and Bechets, 2006).

In Botswana 29.4 per cent of women failed to return for their HIV results during the opt-in period as compared with 33 per cent during the first three months of opt-out testing (Seipone et al, 2004), this raises an important question whether the women who failed to return for their test results were actually committed to knowing their HIV status or were forced into testing (Rennie and Bechets, 2006). Therefore if a pregnant woman who does not want a test perceives that they lack the freedom to decline it when attending a health facility providing the opt-out testing, they may simply not attend the service at all and this could impact on the number of women attending antenatal care. In a recent population-based study in Botswana, 43 per cent of respondents believed that the HIV testing policy would lead people to avoid going to the doctor for fear of testing (Weiser et al., 2006).

On the contrary a cross sectional study in Zimbabwe on attitudes of postnatal women to the opt-out testing showed that 7.9 per cent of women who declined an opt-out test would still attend antenatal care, and 0.8 per cent said they would deliver at home or with a traditional birth attendant (Perez et al, 2006).

A major concern with the new testing policy is the fear that the practice of routine offer of an HIV test may effectively become routine HIV testing, with erosion of the pre-test counselling process. It is argued that this would undermine the principles of HIV testing namely consent, counselling, and confidentiality ("the 3 Cs") and therefore violate the fundamental human rights of the pregnant woman (Csete and

Elliot, 2006). A study in India showed that where HIV test is offered on an opt-out basis at antenatal clinics patients were not informed that they were being tested (Datye et al, 2005).

In view of the numerous concerns with this policy it is very important to find out what pregnant women in the Wa Municipality think about the new arrangement and also to find out their willingness to attend ANC if they know they would be offered an HIV test.

2.4 Determinants of HIV test acceptability

A variety of factors may contribute to the willingness of a pregnant woman to accept an HIV test. These include stigmatisation of people living with HIV, poor knowledge of women on prevention of mother-to-child transmission of HIV and its benefits, lack of support and reprisals from husbands, low level of privacy during the counselling process, the quality of counselling, and poor attitude of health workers.

2.4.1 Stigmatisation

Stigma and discrimination remain two of the most challenging barriers to the implementation of HIV programs. Three different types of HIV/AIDS stigma have been identified (Bharat et al, 2001);

a) Self-stigma, that manifests as self-blame and self-depreciation
b) Perceived stigma, that manifests in the fear that people have if they are HIV-positive and choose to disclose their HIV status to others

c) Enacted stigma, that occurs when people are actually discriminated against because they have, or are thought to have HIV

It appears women are more likely than men to experience stigma associated with HIV, given that women (especially pregnant women) use health services more frequently than men. They are often diagnosed with HIV before their male partners and therefore risk being blamed for bringing HIV into the relationship even in situations where their partners may have contracted the virus first (Kmietowicz, 2004). Stigma is cited as the primary reason for the low CT uptake in PMTCT programs. This is especially pertinent for pregnancy-related services as reports of judgmental attitudes on the part of service providers with regard to HIV positive women who desire to have children appears to be quite common (Paiva et al, 2003).

2.4.2 Socio-demographic factors and HIV test acceptability

Various socio demographic characteristics have been found to be associated with an individual's willingness to accept an HIV test. Some studies suggest that socio demographic characteristics such as older age, higher educational status, and higher income status tend to be associated with likelihood of accepting an HIV test (Weiser et al, 2006). A study in Nigeria showed that being a married woman or being a Christian were independent predictors of acceptance of prenatal HIV testing, (Daniel and Oladipo, 2006). In Sudan a study that looked at the Knowledge and attitudes of women towards HIV counselling and testing at antenatal clinic, showed that older women, primigravidas, and Muslims had higher rates of HIV test acceptance (Mahamoud et al, 2007). A cross-sectional survey of postnatal women in six rural

sites in Zimbabwe also showed that; younger age, living with a partner, secondary level or higher education, and knowledge about range and availability of services to prevent mother-to-child transmission were associated with willingness to accept an HIV test (Perez et al,2006).

A survey of 504 pregnant and postpartum women in Botswana found that factors associated with accepting an HIV test included being interviewed at an urban site, having a high PMTCT knowledge score, knowing someone receiving PMTCT or ARV therapy, and having a partner who had been tested for HIV. Neither fear of stigma nor resistance from partners were frequent reasons for refusing an HIV test (Creek et al, 2007).

On the contrary some studies have shown that lower education level is associated with higher likelihood to request for an HIV test (Fernandez et al, 2005).

2.4.3 Role of men and acceptance of HIV testing among pregnant women

Men have a significant influence on a pregnant woman's decision to accept an HIV test during antenatal care. In a cross sectional survey in rural and urban Uganda to examine barriers to implementation of prevention of mother-to-child transmission of HIV, the strongest predictor of willingness to accept an HIV test was the perception that, the husband would approve of her testing for HIV. Women who thought their husbands would approve were almost six times more likely to report willingness to be tested compared with those who thought their husbands would not approve (Bajunirwe and Muzoora, 2005). In another cross sectional study to identify

determinants of HIV counselling and testing in a Prevention of Mother-to-Child Transmission programme in rural Burkina Faso, HIV test participation was related to discussing HIV screening with the partner (Sarka et al, 2007). A study on HIV-Related Knowledge, Attitudes, Perceived Benefits, and Risks of HIV testing among pregnant women in India revealed that, out of 2,002 pregnant women surveyed, 85 per cent of women expressed their willingness to be tested, however most were concerned about fear of negative reactions from their husbands (Alexandra et al, 2006).

Several studies suggest that between 3.5 per cent and 14.6 per cent of women reported experiencing a violent reaction from their partners (physical beatings) following disclosure and even break-up of relationships (Medley et al, 2004; Maman et al, 2001; Gaillard et al, 2000; Semrau et al, 2005).

Sensitive counselling, community education, and involvement of partners in the CT process could reduce these negative outcomes. Recent research suggests that couple counselling may serve to alleviate some of the stigma experienced within a couple, but, even as many health service providers think this is a good idea, they feel ill-equipped to provide it (Khan et al, 2006).

2.5 Knowledge of women on MTCT

In Ghana general knowledge about HIV transmission during pregnancy, delivery and breastfeeding appears to be relatively high, and ranges between 69 per cent and 75 per cent among women in the reproductive age (GSS, 2004). In the Upper West region 72

per cent of women in the reproductive age know that HIV can be transmitted during pregnancy, 69.7 per cent during delivery and 67.8 per cent during breastfeeding (GSS, 2004). Even though knowledge on mother-to-child transmission appears to be moderately high in the Upper West Region, only 4.5 per cent know that the risk of mother-to-child transmission of HIV can be reduced by taking a special drug (GSS, 2004).

A survey conducted in Komfo Anokye Teaching Hospital, in Ghana, showed that even though HIV/AIDS was recognized as a life-threatening condition and acquired mainly through unprotected sexual intercourse with an infected partner, knowledge about mother-to-child transmission was still lacking (Addo, 2006).

In Nigeria, a study carried out among 345 pregnant women attending antenatal clinics at two health facilities in Lagos, showed that majority 89.9 per cent of the women had good knowledge of the modes of HIV transmission. However, knowledge on specific aspects of PMTCT was poor. Close to half of the women (41.7 per cent) were not aware of the association between breast milk and HIV transmission, and awareness of anti-retroviral drugs among the study group was very poor, (Ekanem and Gbadegesin, 2004). In South Africa a study that specifically looked at the knowledge of pregnant women on mother-to-child transmission through breast milk showed that even though most women were aware of HIV, knowledge on transmission through breast milk was very low (Maputle and Jali,2008). In China a study on pregnant women's awareness and knowledge on mother-to-child transmission showed that 91 per cent of the women were aware that HIV/AIDS could coexist with pregnancy. The study also found that knowledge on transmission through pregnancy was 85 per cent, vaginal

delivery 60 per cent and breastfeeding 20 per cent. Caesarean section was believed to be a route of transmission by 55 per cent of respondents, but no one identified caesarean section as a method of preventing mother-to-child transmission (Luo and He, 2008). A similar study in Nigeria involving 400 antenatal registrants showed that majority of the respondents (94.7 per cent), were aware of HIV transmission from an infected mother to her child. The study also demonstrated that respondents were more aware of the use of antiretroviral drugs in pregnancy (63.2 per cent) than they were of avoiding breastfeeding (58.5 per cent) and Caesarean delivery (22.8 per cent) as strategies for preventing mother-to-child transmission (Ogagi et al,2008).

A Behavioural Surveillance Survey conducted in Nigeria showed poor knowledge of HIV/AIDS among pregnant women. Many of the pregnant women who exhibited good knowledge about HIV/AIDS had poor knowledge on MTCT (Emuveyan, 2004). Another study in Nigeria showed that pregnant women with low self perception of HIV risk and people who were aware of the benefits of prenatal HIV testing were more likely to accept an HIV test than those who were not (Daniel and Oladipo, 2006).

A similar study showed that HIV test acceptance rate, among pregnant women who are routinely offered HIV test could be increased when women;

a) Understand the modes of vertical transmission and the role of medication in preventing transmission.
b) Believe that prenatal identification of HIV infection can promote the health of the mother and child (Fernandez et al, 2000).

In the Wa Municipality even though the GDHS (2003) seems to suggest good knowledge among women of reproductive age, that for pregnant women seeking antenatal care appears to be a grey area requiring research. It is therefore important to determine the level of knowledge of pregnant women in the Wa Municipality since this may have an influence on their willingness to accept an HIV test with the opt-out test arrangement.

In conclusion even though the opt-out HIV test has been shown to increase HIV test acceptance compared with the opt-in testing, the fear expressed by some researchers about its potential to erode the counselling process and deter women from seeking antenatal care needs investigation. It also important to find out if the new testing arrangement is acceptable to pregnant women in the Wa municipality.

CHAPTER THREE

3.0 METHODOLOGY

3.1 Study design

The study was a quantitative facility based cross-sectional study, involving 270 pregnant women seeking antenatal care at Busa Health Centre and Wa Regional hospital.

3.2 Study area

The study was conducted in the Wa Municipality, which is one of the eight administrative districts in the Upper West Region (UWR). It has one raining season from May to October and is usually followed by a prolonged dry season from November to March. The dry season is characterized by cold, dry and dusty winds - Harmattan. The climate is savannah with an average minimum temperature of 24^{o}C and a maximum temperature of 40^{o}C. The vegetation is grassland with shrubs.

According to the 2000 population census, Wa Municipality has a total population of 98, 576 (GDHS, 2003) with a projected population of 112,050 for 2007 using a growth rate of 2.7 per cent (Annual report of health Directorate, 2007). An estimated 26,892 women are thought to be in the fertile age.

The municipality has been further divided into 6 sub districts; Bamahu, Busa, Charia, Charingu, Kambali, and Wa central Sub districts. The major ethnic groups in the

Municipality are the Waala's and Dagaaba's, with other tribes in the minority. It is a male dominated community with polygamy and discrimination against women in life choices including health, education and engagement in economic activities.

There are six (6) government health facilities and six private facilities made up of five clinics and one private Maternity Home. A package of health services are provided in the district to improve upon the health status of the people. These include: Clinical Care, Integrated Disease Surveillance and Response; Specific Disease Control Activities; Expanded Program on Immunization; Reproductive Health, Child Health and nutrition, Supplementary Feeding Programs, Control of Micro-nutrient Deficiency, Nutrition Rehabilitation, School Health, and Special Outreach Services, Counselling and testing for HIV in pregnancy at Busa health centre and Wa regional hospital. According to the 2007 HIV Sentinel Report Wa recorded the second highest number of pregnant women with HIV out of 40 HIV Sentinel sites. The decision to conduct the study in the Wa municipality was therefore appropriate.

With the exception of Wa, the remaining settlements are predominantly rural, 80 per cent of the people are involved in subsistent farming. Commercial activities include; sheabutter extraction, local soap manufacturing, pito brewing, weaving etc.

There is high poverty in the region with 86 per cent of the people living below the United Nation's (UN) accepted poverty line. Social amenities such as electricity, telephone and mobile phone services are generally available. Water supply however is limited to the central township. The road network within the municipality is good and almost all the road network within the municipality have been tarred.

There are 110 primary, junior and secondary/technical schools, with 2 tertiary institutions; University of development studies and Wa polytechnic.

3.3 Study population.

The study population was made up of all pregnant women in the reproductive age (15-49) seeking antenatal care in the Municipality.

3.4 Target population

All pregnant women between the ages of 15-49, seeking antenatal care in the Wa regional hospital and Busa Health centre constituted the target population

Inclusion Criteria

- Pregnant women who had tested or not tested for HIV during the data collection period

Exclusion Criteria

- Any woman who was not pregnant at the time of the interview
- Any woman who was pregnant but refused to be interviewed

3.5 Sampling

This section explains how the sample size was determined and how the participants in the study were selected and interviewed.

3.5.1. Sample Size

The formula used for the sample size determination was $N=Z^2pq/E^2$ where, N is sample size, Z is the Z score corresponding to 95 per cent confidence level (1.96), p

the proportion of women who accepted counselling and testing. The proportion of women who accepted CT for HIV in 2007 was 22.2 per cent (Annual Report Municipal Health Directorate, 2007). With a margin of error at 5 per cent, a sample size of 260 was determined. The sample size was however increased to 270 to compensate for possible non-responses.

3.5.2 Sampling Method

Wa Hospital and Busa Health Centre were conveniently selected because they were the only public institutions providing counselling and testing services for HIV in pregnancy at the time the proposal was being developed. The total number of expected pregnancies for Busa was 364 and that for Wa 2,374. Proportionate sampling of 40 pregnant women from Busa health centre and 230 from Wa Regional Hospital were selected based on the expected number of pregnancies for 2007. Trained data collectors, visited the antenatal unit of the research sites, and the procedure for data collection discussed with the nurse on duty, who in turn informed the clients of our intention to interview individuals who would be selected by the random process. The antenatal register was inspected each day at 11am in consultation with the nurse in-charge, to determine the total number of pregnant women registered for that day. Numbers were then written on pieces of paper up to the last person that had been registered for that day. Five to ten numbers were then selected by balloting, and the numbers selected cross checked with the antenatal register to determine the names of the women, that corresponded with the numbers selected by the balloting process. The affected women were then called up and the

consent form read to them and those who consented were subsequently interviewed. This was done every day until the sample size of 270 was obtained.

3.6 Data Collection Techniques

3.6.1 Tool

Structured questionnaire was used to collect information from respondents using trained research assistants.

3.5.2 Training

Three research assistants were selected and trained with support from the Disease control officer. The content of the training was an introduction to the main objective and specific objectives of the study, data collection techniques, translation of the questionnaire into the local language, data collection procedures and ethical issues.

3.5.3 Pre- test

The questionnaire was pre-tested in Kambali Health Centre in the Wa Municipality, which had also just started CT services at the time of data collection. Ambiguous questions were reframed and some responses which kept on recurring were added to the questionnaire and the tool finalized for the study.

3.6 Data Analysis

The data was entered into EPI INFO (version 3.2.2, 2004) and exported to SPSS (version 16, 2007) for analysis. The data was analysed by generating frequencies, cross tabulation and Chi square analysis for categorical variables. Open ended questions were re-coded before data entry. In analysing the knowledge of women on mother-to-child transmission, any woman who knew two or more routes of mother-to-child transmission was considered knowledgeable whilst those who knew only one route were considered not knowledgeable. Again any woman who knew that a special drug existed to prevent mother-to-child transmission plus one other correct way of preventing mother-to-child transmission was considered knowledgeable on prevention of mother-to-child transmission of HIV.

3.7 Quality Control

To ensure data quality, research assistants were given adequate training. Regular visits to the field sites (especially Busa which is about 15km from Wa) were done by the principal researcher to ensure that the relevant information was collected and also to identify and correct inconsistencies in data collection. All the data collected was entered twice, by the principal researcher and the health information officer of Wa Municipal Health Directorate in EPI INFO (Version 3.2.2) and compared in order to reduce data entry errors.

3.8 Ethical Consideration

Ethical clearance was sought from the Ghana Health Service Ethics Committee. The District Director of Health Services wrote letters to the nurse in-charge of Busa Health

Centre and the Medical Director of Wa regional hospital and explained the purpose and benefits of the study before the commencement of data collection. Individuals were free to participate after being taken through the consent form or withdraw from the study without losing anything and they were also assured of anonymity and confidentiality. Respondents who were found to be very ignorant and deficient in knowledge on issues relating to mother-to-child transmission of HIV were educated after completing the interview.

CHAPTER FOUR

4.0 RESULTS

4.1 Socio-demographic characteristics

A total of 270 respondents were interviewed in the two health facilities. Table 4.1 below summarises the socio-demographic characteristics of the respondent's interviewed.

Table 4.1 Socio-demographic characteristics of respondents in the study

Characteristics	Number of Respondents	Per cent
AGE GROUP		
15-19	11	4.1
20-24	64	23.7
25-29	107	39.6
30-34	53	19.6
35 39	31	11.5
40+	4	1.5
Gravidity		
1-2	142	52.6
3-4	87	32.2
5+	41	15.2
Parity		
0-2	212	78.2
3-5	53	19.6
6+	5	1.9
Number of ANC visits		
One visit	42	15.6
Two visits	78	28.9
Three visits	49	18.1
Four visits and more	101	37.4
Marital status		
Married	266	98.5
Single	4	1.5
Type of marital union		
Polygamy	55	20.4
Monogamy	211	78.1
Others	4	1.5
Religion		
Christian	98	36.3
Moslem	169	62.6
Traditional	3	1.1

Continuation of socio-demographic characteristics of respondents in the study		
Occupation	**Number of respondents**	**Per cent**
Farmer	14	5.2
Housewife	25	9.3
Formal employment	43	15.9
Trader	98	36.3
Apprentice	37	13.7
Unemployed	20	7.4
Others	33	12.2
Education		
No education	90	33.3
Primary education	84	31.1
Secondary education	61	22.6
Tertiary education	34	12.6
Others	1	0.4
Ethnicity		
Waala	126	46.7
Dagao	99	36.7
Sisaala	11	4.1
Lobi	0	0
Akan	5	1.9
Ewe	3	1.1
Others	26	9.6
Health institution		
Busa health centre	40	14.8
Wa Regional Hospital	230	85.2
TOTAL	**270**	**100**

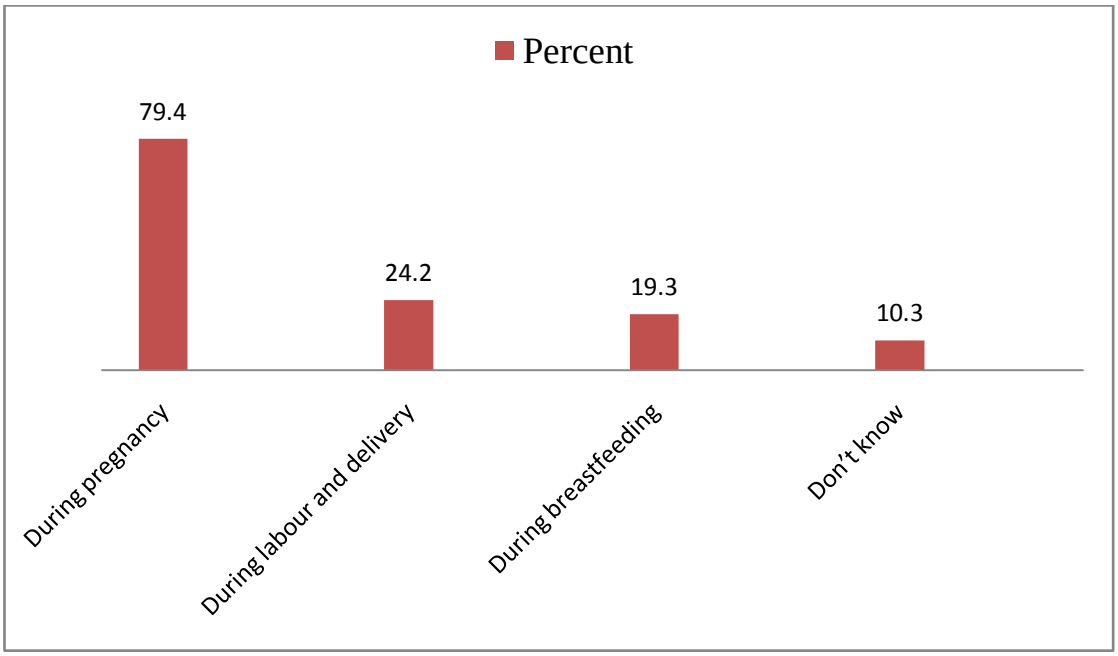
4.2 Knowledge on Mother-to-child Transmission of HIV

The knowledge of respondents on issues of MTCT of HIV are shown in table 4.2 and figure 4.1 below.

Table 4. 2: Knowledge of Respondents on mother-to-child transmission of HIV

	YES (%)	NO (%)	DON'T KNOW	TOTAL (%)
Are pregnant women at risk of HIV infection?	247(91.5)	3(1.1)	20(7.4)	270(100)
Can a pregnant woman who is infected with HIV infect her baby with the disease?	223(82.6)	7(2.6)	40(14.8)	270(100)
Can HIV transmission from an infected mother to her baby be prevented?	152(68.1)	10(4.5)	61(27.4)	270(100)

Figure 4.1: Bar graph showing knowledge of respondents on routes of MTCT of HIV



NB. Multiple responses among 223 respondents who said a pregnant woman could infect her baby with HIV

There was no relationship between religious affiliation and knowledge (X2=0.822, P-value 0.365). The site of interview (rural or urban) had no relationship with the knowledge on routes of mother-to-child transmission (X2=0.467, P-value 0.494). There was however a significant relationship between educational status and knowledge on routes of mother-to-child transmission of HIV. Those with some education (primary education and above) were more knowledgeable than those with no education at all (X2=11.085, P-value 0.001).

Table 4.3: Relationship between educational status and knowledge on routes of mother-to-child transmission

Educational status	Knowledgeable	Not Knowledgeable	Total
No education	22	144	136
Some education	31	56	87
Total	53	170	223

X^2=11.08, P-value 0.001

Regarding the knowledge of respondents on the prevention of mother-to-child transmission of HIV, a little over 75 per cent were aware of the existence of a special drug to prevent mother-to-child transmission of HIV. Table 4.4 below show these findings.

Table 4.4: Knowledge on prevention of mother-to-child transmission of HIV

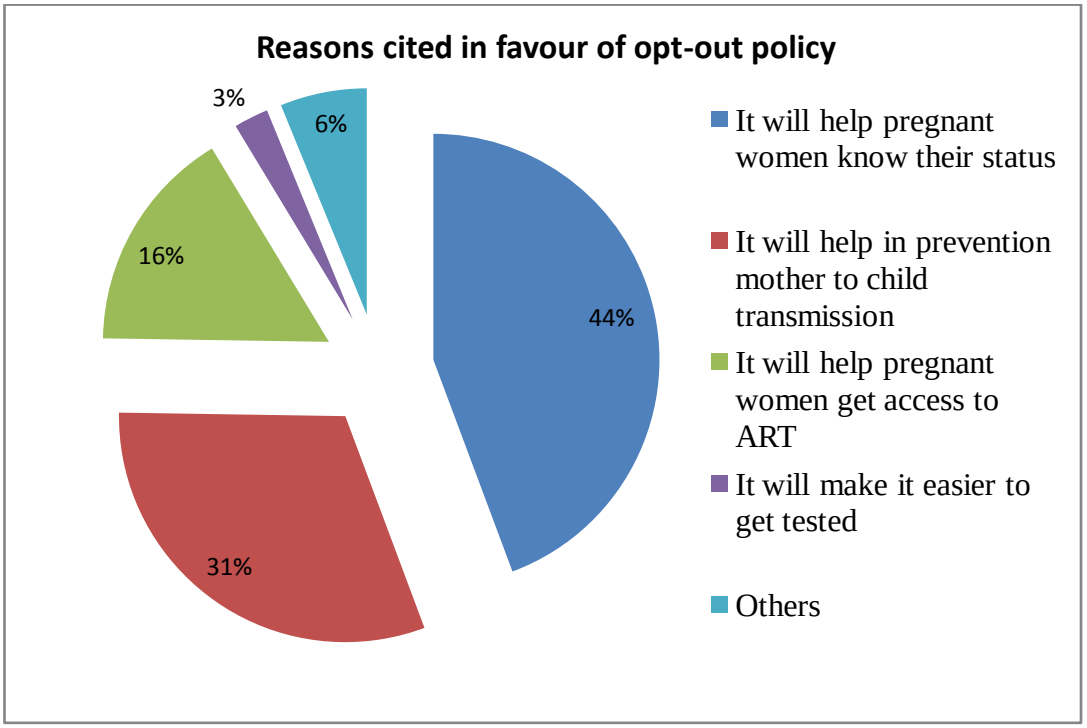
	Frequency	Per cent
Avoid breastfeeding	34	22.4
A special drug to mother and baby	115	75.6
Avoid mix feeding	3	2.0
Routine antenatal care drugs	23	15.1
Delivery of baby through CS	7	4.6
Don't know	3	2.0
Others	10	6.6

NB Multiple responses among 152 respondents who said mother-to-child transmission could be prevented

4.3 Awareness and what pregnant women think of the opt-out HIV test.

A large proportion 81.9 per cent (221) of respondents had heard of the opt-out testing policy and 79 per cent (214) were aware that the opt-out HIV test was being implemented in their respective facilities. Majority of the respondents 90.7 per cent (245) said they were in favour of the policy and 9.3 per cent (25) were not in favour of the policy. Figure 4.2 and table 4.5 below summarises the reasons cited in favour of the opt-out policy and against the policy.

Figure 4.2: Pie chart showing reasons cited in favour of the opt-out policy



Multiple responses among 245 respondents who were in favour of the policy

Table 4.5: Reasons against opt-out policy

	Frequency	Per cent
It can lead to premature death	18	72
It amounts to forcing people to test against their will	2	8
Violence from husbands	1	4
Don't know	2	8
Others	2	8
Total	25	100

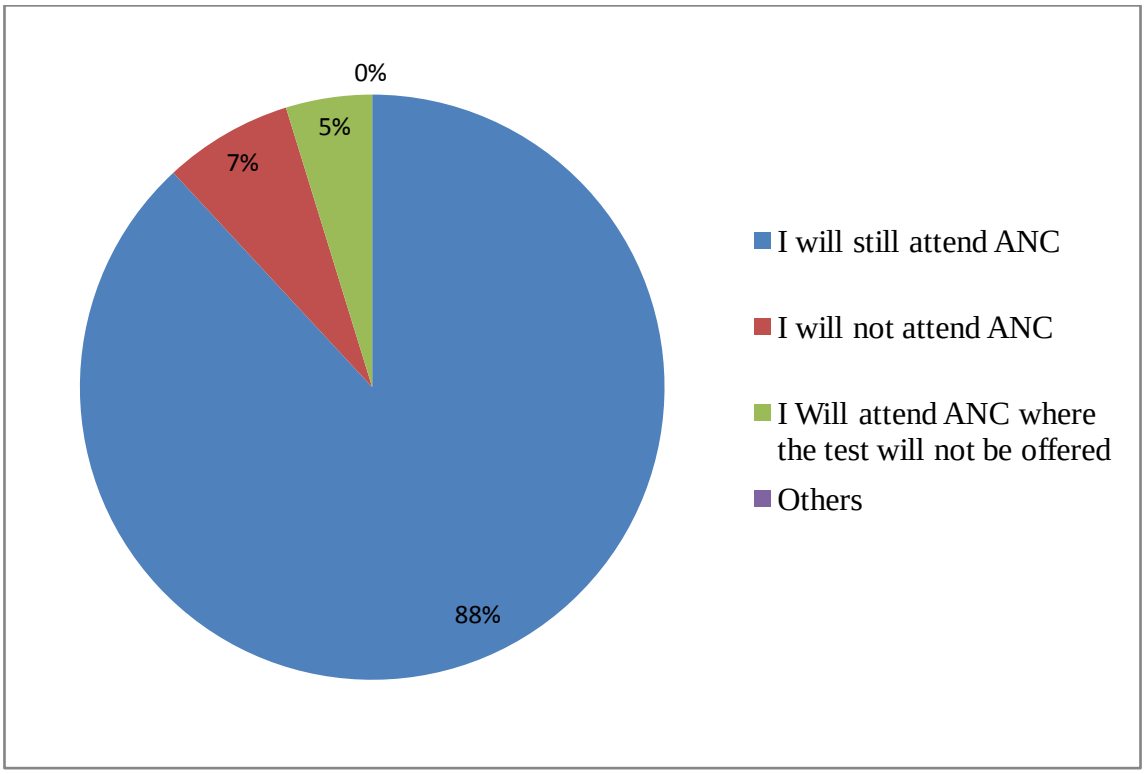
4.4 Opt-out test and willingness to attend ANC

More than half 58.6 per cent (157) of the respondent thought the opt-out test would prevent some pregnant women from seeking antenatal care and 41.4 per cent (113) of the respondents said it would not prevent women from seeking antenatal care. Most of the respondents 82.6 per cent (223) said they did not know anybody who refused to seek antenatal care for fear of being tested and 17.4 per cent (47) said they knew friends who refused antenatal care for fear of being tested. A large proportion 88.1 per cent (37) of respondents who refused the test were still willing to attend ANC. Majority 97 per cent (66) of the 68 women who said the test was not offered to them at ANC were also willing to attend ANC and 2.9 per cent (2) gave no response. Table 4.6 and graph 4.3 below show these findings.

Table 4.6: Willingness to attend ANC among those who were not offered an HIV test.

	Frequency	**Per cent**
I will still attend ANC	66	97.1
I will not attend ANC	0	0
I will attend ANC where the test will not be offered	0	0
Others	0	0
No response	2	2.9
TOTAL	**68**	**100**

Figure 4.3. Pie chart showing willingness of pregnant women to attend ANC among those who were offered an HIV test but refused to test



4.5 Acceptability of opt-out HIV test

More than half 58.5 per cent (158) of the 270 pregnant women interviewed had tested for HIV in that current pregnancy and about 41.5 per cent (112) of them did not test for HIV. Majority 61.8 per cent (68) did not test because the test was not offered to them at ANC. Out of the 68 women who said the test was not offered, 79 per cent (54) had attended ANC more than twice and 21 per cent were attending ANC for the first time. A large proportion 82.4 per cent (56) of the 68 women who said the test was not offered, were however willing to test. Only 17.6 per cent (42) of respondents actually refused to test when they were offered. Of the (158) respondents who tested for HIV, 97.3 per cent received pre counselling whilst 72.8 per cent received post counselling. A large proportion 91 per cent (144) of respondents said they were not forced into

testing because the manner in which the test was offered to them they could have refused if they did not want to test. Majority 96 per cent (158) of the pregnant women were willing to encourage other people to test. Table 4.7 below show these findings.

Table 4.7: Responses in relation to HIV testing

	Number	Total	Per cent of Total
Tested for HIV in this pregnancy	158	270	58.5
Pre counselled	148	158	93.7
Post counselled	115	158	72.8
The manner in which the test was offered could you have refused the test (those who said yes)	144	158	91.1
Willingness to encourage other People to test	153	158	96.8
Willingness to test among those who said the test was not offered to them at ANC	56	68	82.4

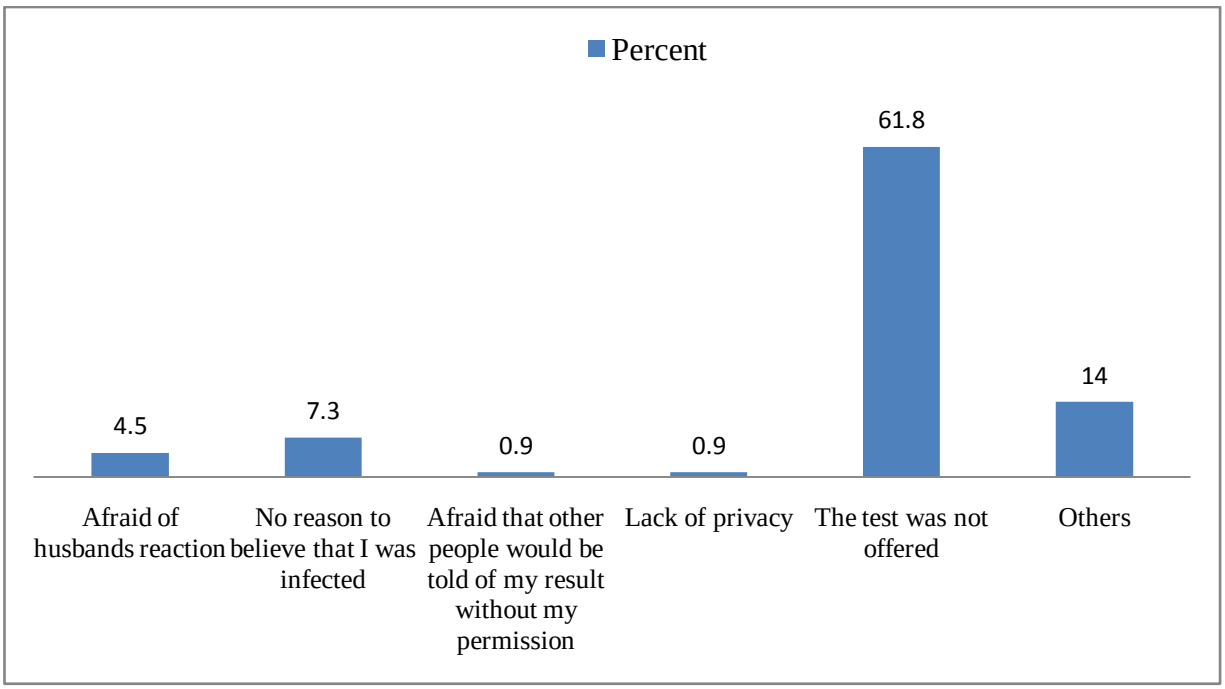
The most frequent reason cited by respondents for accepting an HIV test was because they wanted to just know their HIV status. Other reasons cited by the respondents can be found in table 4.8 below.

Table 4.8: Reasons for testing for HIV in current pregnancy

	Frequency	Per cent
Because the nurse asked me to test	25	15.8
Don't trust my husband	2	1.3
Just to know my status	84	53.2
To prevent my child from HIV if am found to be positive	43	27.2
Others	4	2.5
Total	158	100

Most of the respondents who could not test for HIV was as a result of failure to offer the test; other reasons given by the respondents are shown in figure 4.4 below.

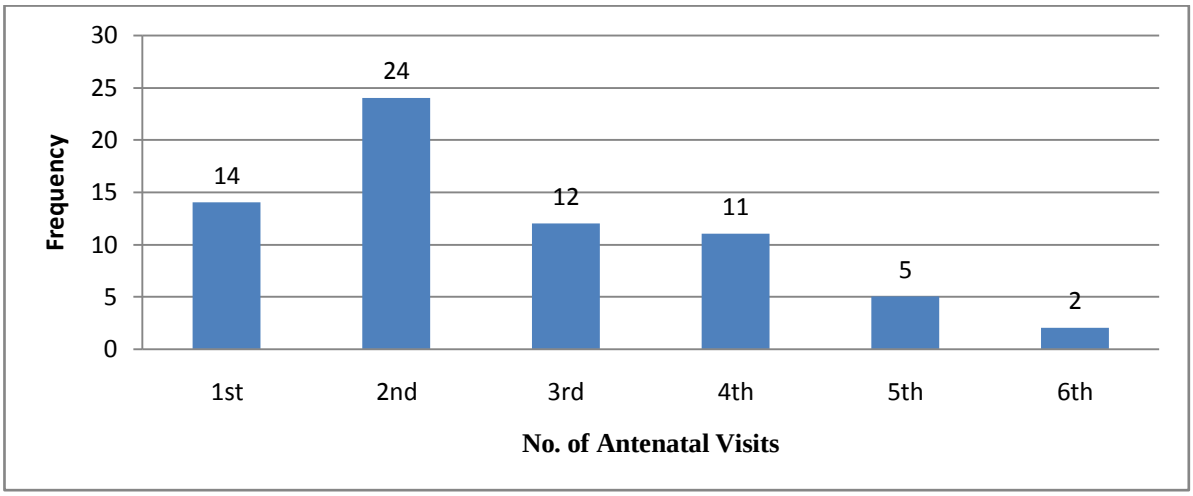
Figure 4.4: Reasons for not testing for HIV in current pregnancy



2 people did not answer this question

Majority of the respondents who could not test as a result of failure to offer the test had attended ANC at least twice in that pregnancy. Figure 4.5 illustrate this point.

Figure 4.5: Bar Graph showing the number of ANC visits among those who said the test was not offered.



There was no relationship between HIV test acceptability among those without education and those with some education (X2=0.011, P-value 0.916). No relationship could be established between HIV test acceptability and religious affiliation (X2=4.543, P-value 0.103) or marital status (X2=0.454, P-value 0.5). No relationship could also be established between knowledge that a special drug existed to prevent mother-to-child transmission and HIV test acceptance (X^2=3.476,P-value 0.062).A significant relationship was however established between those who said they had heard of the opt-out HIV test and HIV test acceptability (X^2=48.25,P-value 0.000). Awareness that the test was offered at the facility was found to be significantly related to HIV test acceptability (X^2=60.3,P-value 0.000).

Table 4.9. The single most important thing that will encourage those who did not test to test

	Frequency	**Per cent**
If am tested together with my husband	11	9.8
If am sick and the doctor suspect it	19	17.0
If health workers will treat me well if I test positive	18	16.1
If no one will find out about my test results	52	46.4
If there is enough privacy	12	10.7

4.6 Suggestions to encourage more pregnant women to test

Responses on suggestions to encourage more women to test were varied and interesting. A little over 40 per cent of the respondents said that nurses and counsellors should be patient and polite with those who did not want to test. This was followed by 15 per cent of the respondents who said more education on the policy was needed to encourage more people to test. About 8.9 per cent of the women however said the present arrangement was good and should be continued whilst 8.1 per cent wanted the test to be extended to everyone who comes to the health facility instead of targeting pregnant women only. A little over 6 per cent did not offer any suggestion whilst 5.9 per cent said it would be good to test women on subsequent visits rather than on the first day at ANC. Some of the women 4.4 per cent were concerned about confidentiality and suggested that, if confidentiality could be improved more women would test. Only 4.1 per cent of the women wanted more nurses to reduce waiting time and an equal proportion 4.1 per cent suggested that it would be good to use pregnant women who had already tested to share their experiences with those who did not want to test. About 2.2 per cent suggested that pregnant women should be tested together with their husbands.

CHAPTER FIVE

5.0 DISCUSSION

This study was a facility based study conducted to determine the acceptability of routine offer of HIV test, as a strategy for the prevention of mother-to-child transmission of HIV in the Wa Municipality. Understanding women's experiences with the opt-out test, as well as their knowledge on mother-to-child transmission would help in the formulation of feasible and effective strategies to support women and ensure that they gain access to HIV treatment services. The results of this study are discussed below.

5.1 Knowledge of pregnant women regarding MTCT of HIV

The study showed that most of the pregnant women 91.5 per cent saw themselves to be at risk of HIV infection and about 82.6 per cent thought the potential for mother-to-child transmission was real. These findings are consistent with findings from two studies in China and Nigeria which found that majority of pregnant women perceived themselves to be at risk of HIV infection and were also aware of the possibility of MTCT of HIV (Luo and He, 2008; Ogagi *et al*., 2008). Despite this level of awareness, the fact that some people in the study area still do not recognise themselves to be at risk or didn't know that MTCT of HIV was possible several years after the first case of HIV was diagnosed in the country cannot be good news.

In this study, majority of the women 79 per cent were aware of the possibility of HIV transmission during pregnancy; however knowledge of HIV transmission during

labour/delivery was poor, 24.2 per cent, and even poorer for breastfeeding, 19.3 per cent.

Addo (2006), Emuveyan (2004) in their study in Ghana and Nigeria respectively, also found poor knowledge of pregnant women on MTCT of HIV and in a more recent study in South Africa by Maputle and Jali (2008), majority of the pregnant women interviewed were found to be very ignorant about MTCT of HIV, especially through breast milk. On the contrary, a study in Nigeria, by Ekanem and Gbadegesin (2004), and in China, by Luo and He (2008) that assessed the knowledge of pregnant women on MTCT of HIV, showed that most pregnant women were very knowledgeable on issues of MTCT of HIV.

The knowledge of an individual on the routes of MTCT of HIV constitutes an important step to adopting attitudes and behaviours that prevent mother-to-child transmission of HIV. A woman with poor knowledge on issues MTCT of HIV cannot even take steps to prevent the unborn baby from HIV infection. The need for intensive health education by the municipality to improve the knowledge base of pregnant women on mother-to-child transmission is therefore crucial.

Over 75 per cent of the women who said MTCT of HIV was possible knew it could be prevented by giving a special drug to the mother and baby. This is inconsistent with findings by (Ekanem and Gbadegesin, 2004) that showed low awareness of antiretroviral drugs among participants. Majority of the women were not aware that

prevention of MTCT of HIV was possible by avoidance of breastfeeding and through CS. The fact that awareness about a special drug to prevent MTCT was high and other modes of prevention low, suggests that counsellors were probably only emphasising antiretroviral drugs as the only strategy for the prevention of MTCT of HIV and neglected the other modes of prevention like avoidance of breastfeeding and CS.

Luo and He (2008) in their study in China found similar findings, their study found poor knowledge among pregnant women on the prevention of MTCT of HIV through CS and avoidance of breast milk. On the contrary, Ogagi (2008) in a recent study in Nigeria showed that most pregnant women were knowledgeable on prevention of HIV through avoidance of breast milk (Ogagi, 2008).

The poor knowledge exhibited by some participants suggests that women in the Wa Municipality are probably not receiving adequate education on issues of mother-to-child transmission of HIV as desired. Studies by (Fernandez *et al*, 2000; Daniel and Oladipo, 2006) have demonstrated a significant correlation between knowledge on MTCT of HIV and the willingness of a woman to undergo HIV counselling and testing. The poor knowledge of some of the women on issues of MTCT of HIV could impact negatively on the number of women who accept to be tested for HIV in the future.

5.2 The level of awareness and what pregnant women think about the opt-out test

In less than a year following the introduction of the opt-out test in the country, the level of awareness amongst pregnant women in the study area could be described as high and their attitude towards the policy very positive. Majority of the women interviewed 81.9 per cent, were already aware of the policy. A significant proportion of the women 79 per cent were also aware that the policy was being implemented in their respective facilities. A large proportion of the women 90.7 per cent were in favour of the opt-out policy, because in their opinion the policy would help them to know their HIV status (69 per cent) and also help in the prevention of MTCT of HIV (51 per cent). This contrast sharply with a study conducted in the Kassena-Nankana district in the Northern region of Ghana (Baiden *et al*, 2005) in which only half of the respondents found HIV testing to be useful. The high awareness and favourable response of the policy among the respondents could be attributed to a one week sensitization workshop which was ongoing at the time of the data collection. Participants at the workshop carried out health education on the policy at ANC and through the FM and could have contributed to the high level of awareness amongst the respondents.

It is also interesting to note that the 25 people, who were not in favour of the policy, were not actually concerned about the manner in which the test was actually offered, but what would happen if the test came out positive, most of them 72 per cent thought it would lead to their premature death. More education would be required to reassure such people about the availability of effective antiretroviral drugs that can prolong and improve the quality of the live of HIV patients.

5.3 Acceptability of the opt -out test

The opt-out test was generally acceptable to most of the respondents interviewed. More than half of the respondents, 58.5 per cent had actually tested for HIV in that current pregnancy and 82.4% of those who said the test was not offered to them expressed willingness to get tested. These findings are consistent with several studies conducted in developed and developing countries (Seipone *et al*, 2004; Chandisarewa *et al*, 2008; Perez *et al*, 2006; Moses *et al*, 2008) that showed high acceptability of the opt-out test among pregnant women. The high acceptability is good news for prevention of MTCT of HIV programs in the Wa Municipality. Given the high testing rate, HIV positive women would be identified early to take up antiretroviral drugs and this could reduce substantially the number of HIV infected children in the Wa Municipality.

The fact that more than half 61.8 per cent of the respondents who could not test was as a result of failure to offer the test, cannot be good news. It is even interesting to note that majority of the women 79 per cent who said the test was not offered had attended ANC at least twice. This suggests that counsellors were probably not offering the test as often as they should have done. This situation could result in missed opportunities in the prevention of MTCT of HIV. The precarious human resource constraint in the municipality could explain the above finding since nurses sometimes combine core nursing duties with HIV counselling and testing services, and therefore when the antenatal clinic gets very busy, HIV test may not be offered to the pregnant women at ANC. About 10 per cent of respondents said they were afraid

to test. It is possible that this group of women perceived themselves to be at high risk of HIV infection and were not comfortable in knowing their status.

Over the past two years the NACP has committed a lot of resources to build and furnish counselling and testing centres to guarantee privacy of clients who come for HIV counselling and testing. It was therefore not surprising that only 0.9 per cent cited privacy as the reason for refusing an HIV test.

On the single most important thing that would encourage women who did not test to get tested, majority 46.4 per cent of the women were concerned about confidentiality of test results and were willing to test if no one would find out about their test results, whilst 16.1 per cent would test if health workers would treat them well if they test positive. These findings signify the need to commit more resources in the training of counsellors, to ensure that they discharge their duties in a professional manner.

About 9.8 per cent would test if they are tested together with their husbands. According to the Wa Municipal Health Directorate annual report (2007), Wa is a male dominated community; these women probably wanted to discuss the issue of HIV testing with their partners and seek their consent before they could test. Several studies have shown that willingness to undergo HIV counselling and testing is related to the perception that husbands would approve of the test (Banjunirwe and Muzoora, 2005; Sarker et al, 2007; Alexandra et al,2006).Other studies have also suggested that women who test positive experienced violent reactions from their husbands(Medley et

al, 2004; Maman et al, 2001; Gaillard et al, 2000; Semrau et al., 2005). The NACP may have to consider couple counselling to overcome this barrier as has been suggested by some studies.

The fundamental principles of HIV testing include counselling and informed consent. This study found that majority of the women had both pre and post counselling. A small proportion 6.3 per cent (10) of the respondents were not pre counselled before the HIV test was done. This finding is supported by a similar study in India (Datye *et al,* 2005) which found that in clinics where HIV test was offered on an opt-out basis patients were not informed that they were being tested.

No relationship could be established between most of the socio demographic characteristics and HIV test acceptability. This is in contrast with several studies (Fernandez *et al,* 2005; Weiser *et al,* 2006; Daniel and Oladipo, 2006; Mahamoud *et al,* 2007) that established significant relationship between age, religion, marital status and HIV test acceptability.

This study could not also establish any relationship between knowledge about PMTCT and HIV test acceptability, this contrast sharply with other studies (Fernandez 2000; Perez et al, 2006; Creek et al 2007) , that established a link. It is possible that most of the women who tested were just testing without probably understanding the main reason for doing the test, which is to prevent MTCT of HIV.

A significant relationship was however established between those who said they had heard of the opt-out test (X2=48.25, P-value 0.000), awareness that the opt-out test was being performed in their respective facilities (X2=60.3, P-value 0.000) and HIV test acceptability. This could mean that those who had heard about the test or were aware that the test was being performed at their respective facilities, prepared themselves psychologically to get tested, or probably discussed with their husbands and got approval before coming for ANC.

5.4 Opt -out test and willingness to attend ANC

Findings from this study suggest that some of the pregnant women were not coming to ANC for fear of being tested, about 17.4 per cent (47) of the respondents said they knew friends who were not coming to ANC for fear of being tested for HIV. Even though this may be difficult to verify, if it is true, it has the potential to worsen the already precarious maternal mortality rate in the region which stands at 140/100,000 live births. Over half of the respondents 58.6 per cent (157) also thought the test would prevent some women from coming to ANC. These findings are similar to a population based study (Weiser *et al*, 2006) conducted in Zimbabwe in which 43 per cent of respondents believed that the opt-out test had the potential to prevent pregnant women from seeking ANC. It is however important to note that the above findings represent the perception of pregnant women rather than the reality.

A closer look at those who actually refused to test or said the test was not offered to them at ANC gives a clearer picture. A large proportion 88.1 per cent of those who refused to test were still willing to attend ANC and 97.1 per cent of those who said the

test was not offered were still willing to attend ANC. In contrast a study in Zimbabwe (Perez et al, 2006) showed that only 7.9 per cent of the pregnant women who refused an HIV test were still willing to attend ANC. The fact that a significant proportion of the women who refused to test for HIV were still willing to attend ANC, suggest that, this group of women, felt the test was optional and they could not be coerced into testing if they did not want to test.

One can conclude from the above findings, that even though some women refused to attend ANC, a large proportion of the women were still willing to attend ANC even if they knew they will be offered an HIV test ANC.

5.5 Limitations

This study was a facility based study and the findings cannot be generalised to the whole population of pregnant women in the Wa municipality. Pregnant women who did not use the services of such facilities would have been eliminated by this study.

CHAPTER SIX

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusion

The study has shown that, even though the knowledge of respondents on MTCT of HIV through pregnancy was found to be high 79.4 per cent (177), HIV transmission through breast milk 19.3 per cent (43) and labour 24.2 per cent (54) was found to be rather poor. A large proportion of the respondents 75.6 per cent (115), are however aware of the existence of a special drug to prevent MTCT of HIV.

In less than a year after the introduction of the opt-out policy, the awareness among pregnant women is high, with over 81 per cent of respondents already aware of the existence of the policy.

The opt-out test is acceptable to pregnant women in the Wa Municipality with 58.5 per cent of the respondents actually testing for HIV. A large proportion (61.8 per cent) of those who could not test was as a result of failure to offer the test at ANC and of these 82.4 per cent (56) expressed willingness to know their HIV status.

Pregnant women are still willing to attend ANC even if they know they will be offered an HIV test. Over 88 per cent of those who refused to test were still willing to attend ANC and over 97 per cent of those who could not test because the test was not offered, were still willing to attend ANC.

6.2 Recommendations

The study revealed that the knowledge of pregnant women on some aspects of MTCT of HIV is still poor. It is important for the Wa Municipal Health Directorate to intensify health education of pregnant women on MTCT of HIV. Apart from educating women when they come for ANC, the FM stations which cover most communities in the municipality could be used.

Even though the opt-out test was found to be acceptable, more people could have tested if they were offered the test at ANC. The Municipal Health Directorate would have to liaise with the NACP to train more counsellors to ensure, that every pregnant woman who comes to the ANC is offered the test. The Municipality could also consider using pregnant women who have already tested for HIV to share their experiences with their colleagues, this could allay some of the fears pregnant women may be harbouring about having an HIV test.

To clearly establish the acceptability of the opt-out test a comparative study would be required among patients who are offered the test on an opt-out basis and those on an opt-in basis. Longitudinal studies may also be required among those who refuse an HIV test to determine how many of them would actually return for ANC after refusing to test.

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APPENDICES

APPENDIX 1: QUESTIONNAIRE

QUESTIONAIRE ID	
DATE OF INTERVIEW	
NAME OF RESPONDENT	
NAME OF INTERVIEWER	
HEALTH INSTITUTION	1. WA HOSPITAL 2. BUSA HEALTH CENTRE

SECTION A. MATERNAL SOCIO DEMOGRAPHIC DATA			
No	QUESTION	RESPONSE/CODE	VARIABLE
A1	Age of respondent		A1AGE
A2	Gravidity(how many times have you been pregnant)		A2GRA
A3	Parity(How many of your pregnancies resulted in delivery after 28wks)		A3PAR
A4	Number of ANC visits in current pregnancy.		A4ANC
A5	Marital Status Now	1.Single 2.Marriage 3.Separated 4.Divorced 5.Widowed 6. Others (specify).....	A5MRS
A6	Type of marital union	1.polygamy 2.Monogamy	A6MRU
A7	Religion	1.Christian 2.Moslem 3.Traditionalist 4.Others(specify).....	A7REL
A8	Occupation	1.Farmer 2.Housewife 3.Formal employment 4.Trader 5.Apprentice/in training 6.Unemployed 7. Others (specify).....	A8OCP
A9	Education	1.No education	A10EDU

		2.primary education 3.Secondary education 4.Tertiary education 5. Others (specify).....	
A10	Ethnicity	1.Waala 2.Dagao 3.Sisaala 4.Lobi 4.Akan 4.Ewe 5.Others	A11ETH
B. KNOWLEDGE ON MOTHER-TO-CHILD TRANSMISSION OF HIV			
B.1	Have you ever heard about the disease called HIV/ AIDS?	1.Yes 2.No	B1HRD
B.2	If yes where did you first hear it from	1.Clinic/hospital 2.Radio 3.TV 4.News papers 5.Friends 6.CBO/CBV 7.Others(specify).....	B2WHR
B.3	How is HIV spread from one person to another?	1. Unprotected sex with somebody already infected 2.Infected blood especially through blood transfusion 3.From mother-to-child 4.Sharing blades and sharps and sharps with infected person 5. Others (specify)..... 88.Don't know	B3SPRD
B.4	Are pregnant women at risk of HIV infection?	1. Yes 2. No 88.Don't know	B4RSK
B.5	Can a pregnant woman who is infected with HIV, infect her baby with the disease? *IF NO OR DONT KNOW GO TO C1*	1. Yes 2. No 88.Don't know	
B.6	If yes in what ways can a woman infected with HIV transmit the disease to her baby?	1. During pregnancy 2. During labour and delivery 3. During breastfeeding 88.Don't know	B5MTC
B.7	Can HIV transmission from an infected pregnant woman to her baby be prevented? *IF NO OR DONT KNOW GO TO C1*	1. Yes 2. No 88.Don'know	

B.6	If yes how can HIV transmission from an HIV positive mother to her baby be prevented?	1. Avoid breastfeeding ☐ 2. A special drug to the mother and baby. ☐ 3.Routine antenatal care drugs ☐ 4.Delivery of baby through CS ☐ 4. Others ☐ 88.Don't know ☐	B6MCP
SECTION C. AWARENESS AND PERCEPTION OF ''OPT- OUT'' HIV TESTING			
C1	Have you ever heard of ''opt- out'' HIV testing? (''opt- out'' HIV testing is a new approach to HIV testing, it means that almost every pregnant woman who visits the antenatal clinic will be counselled and tested for HIV unless they say no).	1. Yes ☐ 2. No	C1OPT
C2	Now that you know what the Opt-out Testing means, are you in favour of this policy?	1. Yes ☐ 2. No 88..DK	C2OPT
C3	If yes, why are you in favour?	1.It will help pregnant women to know their HIV staus ☐ 2.It will help pregnant women get access to ARV treatment ☐ 3.It will help prevent newborns from contracting HIV from their mothers. ☐ 4.It will make it easier for people to get tested. ☐ 5.Others(specify)..... ☐	C3OPT
C4	If no, why are you not in favour	1.It amounts to forcing people to test against their will. 2.It can lead to violence from husbands. 3.It can kill me prematurely 4.others(specify)..... 88.Don't know ☐	C4OPT
C.5	Are you aware that routine test is being done in this facility?	1. Yes ☐ 2. No	C5OPT

SECTION D. ACCEPTABILITY OF ''OPT-OUT'' HIV TESTING			
D1	Will you be willing to test for HIV with this new policy?	1. YES 2. NO 88. Don't Know ☐	D1WIL
D2	If you were offered an HIV test with this new policy, would you like to discuss with anybody before you test?	1. YES 2. NO 88. Don't know ☐	D2DIS
D3	If yes, who would you like to discuss with?	1. Husband 2. Mother 3. Other(specify)..... ☐	D3DIS
SECTION E. OPT-OUT HIV TEST AND ANTENATAL CARE			
E1	Do you know any of your friends who refused to come for ANC for fear of being tested?	1. Yes 2. No 3.Dont know ☐	E1ANC
E2	Do you think the HIV test will cause pregnant women to avoid going for ANC for fear of being tested?	1. YES 2. NO 3. Don't know ☐	E2ANC
E3	What will you do if you know you will be offered an HIV test at ANC?	1. I will still attend ANC 2. I will not attend ANC ☐ 3. I will attend ANC where the test will not be offered. 4. I will not attend ANC and find alternative delivery services 5.Others(specify).....	E3ANC
SECTION F. HIV TESTING IN CURRENT PREGNANCY			
F1	Have you tested for HIV in this pregnancy	1. YES 2. NO ☐ *IF NO GO TO F7*	F1TST
F2	The manner in which the test was offered to you do you think you could have refused the test if you did not want to test?	1. Yes 2. No ☐	F2REF
F3	What was the main reason why you tested for HIV in this pregnancy?	1.Because the nurse asked me to test 2.To prevent my child from HIV if am positive 3.Just to know my HIV status 4.Don't trust my Husband ☐	F3RSN

		5. Others (specify)……	
F4	Will your experience with the HIV testing convince you to encourage other people to test?	1. YES 2. NO 88. Dont know	F4CON
F5	Did you receive pre counseling before the HIV test?	1. YES 2. NO	F5PRE
F6	Did you receive post counseling after the HIV test?	1. YES 2. NO	F6POS
F7	What was the main reason why you didn't test for HIV in this pregnancy?		F7PRV
	Afraid of a positive test	1	
	I was afraid to be seen at the testing site(stigma)	2	
	Afraid of my husband's reaction	3	
	I had no reason to believe that I am infected	4	
	I was worried that other people would be told of my results without my permission	5	
	health care providers would treat you badly if you test positive for HIV-positive	6	
	There is no treatment for HIV that would be available to me so there would be no point in having a test.	7	
	I don't think the nurses can keep my results confidential	8	
	There is no privacy for HIV testing here	9	
	The test was not offered	10	
	Others (specify)……..	11	
F8	What is the single most important thing that will encourage you to test?	1 If am tested together with my husband 2 If no one will find out about my results 3 If healthworkers will treat me well if am HIV positve 4 If there is enough privacy 5.If am sick and the doctor s… it. 6.others(specify).....	F8CVT
F9	What suggestions can you give to improve the service so that more people		FSUG

	can test.		

APPENDIX 2: CONSENT FORM

Project Title: Acceptability Of the Opt-out HIV Test among Pregnant Women in the Wa Municipality; A Facility Based Study.
Name of Investigator: Josephat Nyuzaghl
Contact of principal investigator:Email:jnyuz@yahoo.co.uk.Telephone:020-8617284
Institutional affiliation: School of Public Health, University of Ghana, Logon**.**

Introduction: This academic research is part of students project work, for the award of a Masters Degree in Public Health. The National AIDS Control Program recently changed its HIV testing policy for pregnant women from a Voluntary request to know one's HIV status, to routine offer of HIV test to all pregnant women who visit GHS institutions. The study among other things seeks to determine the knowledge of pregnant women on mother-to-child transmission of HIV, awareness of pregnant women on the new HIV test policy and willingness to test for HIV with the new policy. The willingness of pregnant women to come for ANC if they know they will be tested for HIV will also be explored.

Procedures: A structured questionnaire will be used on the consenting participants for the study.

Right to refuse: Your participation in this study is voluntary and you are free to refuse or decline to give information at any point during the interview. There will be no negative consequences for you if you refuse or decline now or in the future.

Benefit/Incentive: There is no financial incentive for participating in this study; however participants who demonstrate very poor knowledge of HIV would be educated at the end of the interview. The information you provide will help us in reshaping the manner in which the test is offered.

Confidentiality: Let me assure you, that if you agree to be interviewed, the information you provide will be treated in confidence, and will not be given to anyone else in a form that can be linked to you, your name or your family**.**

If you have any questions you may ask now, otherwise we would be very grateful if

you agree to be interviewed.

Thanks for your cooperation as the information you provide will contribute in many ways to improving HIV testing for pregnant women in the Wa municipality.

Signature/Thumb Print of Participant_____

Date_____

Signature of Investigator_____

Date_____