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Attitude of pregnant women towards prevention of mother to child transmission of HIV/AIDS

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Abstract
This study examined the attitude of pregnant women toward prevention of mother to child transmission (PMTCT) of HIV/AIDS in Anambra state. A sample of 360 pregnant women was selected from Anambra state. A 12-item structured questionnaire developed and validated by the researcher was used for data collection. Three hypotheses were formulated to guide the study. Mean, standard deviation and two-way analysis of variance statistics showed that there is significant main effect of education level on attitude toward PMTCT, P = .005. Also, there is significant main effect of location on attitude toward PMTCT, P = .001. The outcome of the study has implication for pregnant women, psychologists/counsellors, and healthcare workers. Discussion was based on the need to make PMTCT an integral part of antenatal programme.
Keywords: *attitude of pregnant women, HIV/AIDS, PMTCT, educational levels, location*

Introduction

The spread and cure of HIV/AIDS pose serious problem to local and international communities. In terms of cure, HIV/AIDS remains a problem to the scientific community despite the various efforts by relevant stakeholders. Nevertheless, prevention remains a veritable sure way of reducing the spread of this disease. One knowing ones status is one sure way of enhancing the prevention strategy. HIV/AIDS spreads from mother to child during pregnancy. Thus, women at pregnancy can be counselled on Prevention of Mother To Child Transmission (PMTCT) of HIV/AIDS, incorporated into voluntary counseling and testing (VCT).

The acronym HIV/AIDS is a coinage of two concepts–Human Immunodeficiency Virus (HIV) and Acquired Immune Deficiency syndrome (AIDS). Acquired immune deficiency syndrome is diagnosed when infection with Human Immunodeficiency Virus (HIV) has caused a person's immune system to go down to such extent that the individual begins to show marked conditions connected with various viruses, fungal infections, and parasites. These are organisms which people with healthy immune systems are able to repel successfully (Herek, 1990). Thus, HIV is the retrovirus that causes AIDS (Kalichman, 2003). Some researchers noted that HIV is of the family of retrovirus called lent viruses (lent means "slow" in Latin) for it develops slowly as it takes years before symptoms appear; and HIV-virus infects the immune system, that is, the very system that the body uses to fight against infections (Kalichman, 2003). On infection, HIV targets a particular type of white blood cells named T-helper lymphocyte cells or T-helper cells (Doka, 1997), that is CD4 count cell. T-helper cells control several branches of the immune system. They act as the body's army since they command other immune cells to fight and destroy possible causes of infections and diseases (Doka, 1997; Kalichman, 2003).

As HIV infections last, it impairs the body's ability to fight against many diseases by destroying T-helper cells. The immune system tries to control HIV by producing antibodies against the virus. Nevertheless, the efforts are only partly effective because HIV hides inside of T-helper cells, gradually infecting more and more cells until the entire immune system can no longer function (Doka, 1997; Kalichman, 2003).

The advancement from HIV stage to AIDS will depend on how fast the body's immune system is affected (Duh, 1991), and the rate of destruction depends on the number of viruses versus the number and quality of T-cells (CD4 cell) in the body. This implies that a person is diagnosed with AIDS after immune system becomes disabled by HIV or when the person becomes seriously ill from diseases that take advantage of the broken-down immune system (Doka, 1997; Kalichman, 2003). The transition from HIV to AIDS is fragile and difficult to determine, hence the two are considered together as HIV/AIDS; AIDS being the final phase of infection with HIV.

Since HIV/AIDS has no cure, all efforts are geared towards both prevention and reduction of spread of the infection. To this end, many programmes have been put in place for the purpose of prevention and reduction of HIV/AIDS infection. Effectively, PMTCT has proved useful. However, usefulness of PMTCT is determined by the attitude of pregnant women toward PMTCT which can be influenced by educational level (level of formal education attained) and location (area of residence) of the pregnant women.

In an effort to ensure prevention which they say is better than cure, UNAIDS, WHO and UNICEF issued three policy documents on HIV and infant feeding (UNAIDS/WHO/UNICEF, 1998a; 1998b; 1998c). It was recognized that pregnant women have a right to know their HIV status and to have access to voluntary counselling and HIV testing (VCT). (VCT has PMTCT as its integral part designed for pregnant women.) For those found to be HIV-positive infant feeding counselling should be offered. Since 1999, many African governments have launched programmes to offer VCT and short-course antiretroviral drug regimes. This has continued to surfer setbacks due to attitude of pregnant women. It has been argued that when included in the antenatal care service, VCT puts new and unexpected demands on pregnant women (Basset, 2001). This is especially true in settings where pregnant women are accustomed to following health care workers' advice. When VCT is available and offered to pregnant women, study has shown that not all women agree to be tested (Basset, 2001). This may be attributed to attitude of the pregnant women. Furthermore, not all of those who are tested return for their test results, and not all those who are informed of their HIV-positive status will take antiretroviral drugs or choose to give birth in a health facility (Basset, 2001). It has also been reported that in settings where breastfeeding is the norm, it is difficult for women to choose not to breastfeed because they will be suspected of being HIV infected (De Paoli, Manongi & Klepp, 2002). This may result from poor attitude toward PMTCT. It is possible that low level education or rural location of women which slim or narrow down the prevention awareness of the pregnant women can be linked to attitude of such pregnant women to embrace PMTCT.

Current strategies to prevent Mother-To-Child-Transmission (MTCT) of HIV depend on a woman's knowing and accepting her HIV status. Therefore, pregnant women's attitude and concerns about VCT need to be taken into account when developing appropriate interventions to prevent MTCT of HIV. Thus, it becomes apt to explore the distinctions in pregnant women's attitude toward prevention of mother to child transmission of HIV in communities of Anambra state.

Prevention of mother to child transmission (PMTCT) of HIV/AIDS is a programme designed to control/reduce the chances of transmission of HIV from the mother to the child during pregnancy. This is achieved through administration of special drugs during pregnancy, safe sex practice, and special infant feeding options. Prevention of HIV transmission from mother to her foetus while in the womb or during birth or infant feeding requires a comprehensive package of services that includes preventing primary HIV infection in women, preventing unintended pregnancies in women living with HIV, preventing transmission from pregnant women living with HIV to their infants, and providing care, treatment and support for women living with HIV and their families (UNAIDS, 2008).

Health systems need to be strengthened so that interventions to prevent mother to child transmission of HIV infection, including the use of antiretroviral drugs, can be safely and effectively implemented. Moreover, HIV testing in pregnancy has a number of benefits in terms of prevention and care for mother and child, although to avoid or minimize negative consequences testing must be voluntary and confidential and accompanied by quality counselling. Timely administration of antiretroviral drugs to the HIV-diagnosed pregnant woman and her newborn significantly reduces the risk of mother-to-child HIV transmission. HIV-Positive mothers are also provided with access to ART for the protection of their own health.

Combination regimens appear to be most effective but were until recently regarded as too costly for widespread use in low- and middle-income countries like Nigeria. In recent years, projects to prevent mother-to-child transmission in resource-limited settings have primarily focused on provision of single-dose **intrapartum** and **neonatal nevirapine**, which cuts the risk

of HIV transmission by more than 40% (UNAIDS, 2008). While the benefits of single-dose nevirapine outweigh the risk of resistance in these settings, development of affordable regimens with superior resistance profiles is an urgent global priority. Thus, it becomes important to explore pregnant women's attitude toward PMTCT. This is so since positive attitude toward PMTCT will increase the tendency to access VCT from where arrangements targeted at reducing the rate of transmission of HIV/AIDS from mother to child can be ensured.

It has been well established that mother to child transmission accounts for the majority of HIV infections in children in developing countries (WHO, 2003). The rate of transmission from an untreated HIV positive pregnant woman to her newborn is high (Adjorlolo-Johnson et al, 1994; O'Donovan, Ariyoshi, Milligan, Ota, Yamuah, Sarge-Njie, & Whittle, 2002). However, tremendous medical and public health achievements have been made in the prevention of mother-to child transmission (PMTCT) of HIV (CDC, 2005). The risk for infant infection has been reduced from approximately 25% to less than 2% by the use of currently recommended prenatal ARV (Antiretroviral drugs) and obstetric interventions for a woman who is aware of her HIV infection in pregnancy (CDC, 2005). Ideally, all women should be screened for HIV before delivery, during an initial prenatal care visit so that potent combination antiretroviral treatment can be given to women who are HIV-infected. However, approximately 40% of the mothers of the estimated HIV infected infants born in the year 2000 were not screened for HIV infection before delivery (CDC, 2005). Globally, HIV testing and counselling is recognized as a priority in national HIV programmes because it forms the gateway to HIV/AIDS prevention, care, treatment and support interventions but this has not fully become entrenched in all peripheral health facilities in developing countries like Nigeria. CDC (2005) recommended that it is critical to increase the prenatal detection rate of HIV-infected pregnant women in these countries, so that effective interventions can be delivered. Achievement of this noble goal in Nigeria relies heavily on obtaining data, dealing with attitude of pregnant women, from various areas of Nigeria.

Furthermore, the availability of affordable, accurate, reliable, simple and rapid HIV tests providing results within the time frame of a single brief antenatal visit for single or a small

number of clients significantly facilitates PMTCT programmes by reducing travelling time and expenses, and by virtue of their feasibility in peripheral primary health services (UNAIDS, 2003). The rapid HIV tests are most suitable in developing countries where the majority of pregnant women are attended by traditional birth attendants (TBAs), the pregnant women use the formal health sector only as a backup arrangement. According to Abioye-Kutey, Elias, Familusi, Fakunle and Akinfolayan (2001); Fatusi, and Abioye-Kuteyi, (1997) if pregnancy and labour progress as expected, the pregnant woman attends a local formal health post once at booking which mostly may be late in pregnancy. In these circumstances, rapid HIV tests afford the opportunity to screen for HIV in women attending peripheral units and provide results during same visit.

Some studies have addressed the issues of prevention of mother to child trasmission of HIV/AIDS. For example, in a study Olanrewaju, Ola, Akintunde, Ibrahim and Ibiyemi (2007) determined the prevalence of HIV and the acceptability of HIV voluntary counselling and testing (VCT) in pregnancy as a strategy for the prevention of mother to child transmission (PMTCT). Earlier, De Paoli, Manongi, and Klepp (2004) conducted a study to identify factors associated with pregnant women's expressed willingness to accept voluntary counselling and HIV-testing (VCT). In a study Ezeugwu, Ikeme and Onwasigwe (2005) assessed attitude towards antenatal Human Immuno Deficiency Virus (HIV) screening. Enough information is lacking in this direction in Anambra State. Thus, it becomes necessary to conduct similar study in Anambra state of South Eastern Nigeria.

It is possible that pregnant women's acceptance to be tested and counselled on HIV/AIDS will depend on their attitude toward special progamme of PMTCT. Attitude is favourable or unfavourable evaluative reaction toward something or someone, exhibited in one's beliefs, feelings, or intended behaviour (Myers, 2005). This attitude can equally be explained on Health Belief Model (HBM), (Janz & Berker, 1984; Janz, & Champion, 2002). This model proposes that perceptions of vulnerability or susceptibility and severity are linked to actions that may prevent illness. Perceived vulnerability is the personal estimate of the chances of contracting a

disease while perceived severity is the very private, subjective evaluation of the consequences of the disease. In fact, this theory can explain pregnant women's attitude toward prevention of mother to child transmission (PMTCT) of HIV/AIDS programme.

Further, whether a woman at pregnancy will develop positive or negative attitude toward PMTCT depends on how that attitude is influenced by educational level, and location of such woman. There is likely to be differences in attitude due to limited information available to rural or less educated mothers. Therefore, this study investigated how educational levels (having less than tertiary or tertiary education) and location (urban or rural) of pregnant women will influence their attitude toward prevention of mother to child transmission of HIV/AIDS.

Dealing with HIV/AIDS is a worldwide problem. This is so, because the disease has no known cure. One possible route of HIV/AIDS transmission is through the mother to the child during pregnancy or birth. However, it is possible to control the spread of the disease by application of voluntary counselling and testing meant to discover early infection in people. For pregnant women, this will give the healthcare providers the opportunity to take care of transmission of HIV/AIDS to the child through PMTCT incorporated into VCT.

Thus, the obvious issue is that without pregnant women developing positive attitude toward prevention of mother to child transmission of HIV/AIDS, there will be no means of detecting early infection of HIV/AIDS in women as to control the spread of the disease. The implication is that the reasonable percentage of spread that would have been controlled will still remain our problem. And so, prevention of the disease will not be fully successful. To the best awareness of the researchers, the attitude of pregnant women, influenced by location and educational levels, in Anambra state toward PMTCT is not documented in literature. Therefore, the problem of this study is to investigate on what influences attitude of pregnant women toward PMTCT in Anambra state.

Hypotheses

1. Pregnant women with tertiary education will be more favourably disposed to PMTCT than those with less than tertiary education as indicate in their mean scores on attitude toward PMTCT.

2. Urban based pregnant women will be more favourably disposed to PMTCT than rural based pregnant women as indicated in their mean scores on attitude toward PMTCT.

Method

Participants

The participants of this study consisted of 360 respondents (pregnant women) selected from three senatorial zones of Anambra State. Participants ranged in age between 17 years and 45 years with the mean age of 29.69 years and standard deviation of 6.71 years. The senatorial zones were made up of urban and d rural settings. The participants were pregnant as at the time of this study and accessing their usual antenatal services from different private and government owned hospitals. However, most pregnant women from rural dwellers used in this study had no access to formal antenatal services.

Instruments

Structured questionnaire was developed and validated by the researcher. The instrument consisted of two sections. The first section collected information on personal data such as age, educational level, and location of the respondents. The second section contained 12 items that collected information on attitude of pregnant women toward prevention of mother to child transmission of HIV/AIDS. The respondents were required to rate the degree to which each item appealed to them on a five-point rating format as follows; Strongly agree (SA), Agree (A), undecided (UD), Disagree (D), and Strongly disagree (SD) with the numerical value of 5, 4, 3, 2, and 1 in that order. Negative items were reversed in scoring.

The instrument has face and content validity as certified by five experts who vetted the items of the instrument by rating them on seven point format with each person anchoring his judgement on five points and above. Factor analysis yielded one factor with items loading .30

and above, and common extraction on the items of .50 and above was obtained. A reliability analysis using 120 respondents resulted in internal consistency of $\alpha = .74$. Therefore, the instrument was considered valid and reliable for use in this study.

Table 1
The 12-item attitude to PMTCT of HIV/AIDS for pregnant women and their factor loadings

Items	loadings
1. Getting tested for HIV as I am pregnant helps me feel better.	.47
2. Getting tested for HIV helps pregnant women feel like getting HIV.	.62
3. I feel that my husband would leave me if I test HIV positive.	.58
4. People who test HIV positive should hide it from their husbands.	.38
5. I would rather not know if I have HIV.	.51
6. I feel like not transmitting HIV to my child, so no need testing.	.54
7. I feel that there is no need for HIV test during pregnancy.	.56
8. I feel that HIV testing during pregnancy is only antenatal routine.	.46
9. I feel that since HIV has no cure yet, no need for testing.	.54
10. I feel like testing for HIV since it can be prevented at least.	.44
11. I feel uncomfortable hearing about HIV.	.71
12. I feel less anxious about HIV if I'm tested and I know my HIV status.	.32

Procedures

The researcher administered copies of the questionnaire items directly to the pregnant women during antenatal clinic visit in their areas with the assistance of the healthcare providers/nurses. Respondents' consents were obtained. After assurances of confidentiality, there were no objections to respond to the questionnaire items. On the spot method of data collection was used. Data collection lasted for one month. Three hundred and thirty- six copies of the questionnaire were administered while three hundred and sixty copies were actually filled correctly and used.

Design/statistics

The study is a cross-sectional design. Mean, standard deviation, and Analysis of Variance (ANOVA) statistics were used to test the hypotheses at .05 level of significance.

Results

The results of data analysis generated in this study are presented here under. Tables were used for illustrations. Means and standard deviation were presented first in table 2 while table 3 contains results of ANOVA that tested hypotheses 1 and 2.

Table 2
Mean and standard deviation of educational level and location on attitude toward PMTCT.

Source	Number (N)	Mean (M)	Standard deviation (SD)
Educational level			
Tertiary level	133	41.82	6.82
Less than tertiary level	227	41.45	8.37
Location			
Urban	143	38.81	6.92
Rural	217	41.36	6.7

The results of data analysis indicated that there was significant difference between those who attained tertiary level education who scored (*M = 41.81*; *SD = 6.42*) and their less than tertiary level educated counterpart who scored (*M* = 39.49; *SD* = 6.82) on attitude toward PMTCT, *F*(*1, 357*) = *8.01*, *P = .005,* with effect size of Eta Squared .02, and observed Power of .89 . Thus, those who attained tertiary level education were more favourably disposed to PMTCT than those who attained less than tertiary educational level. Therefore, hypothesis 1 was confirmed.

Also, there was significant main effect of location on attitude toward PMTCT. Those pregnant women who dwell in urban area scored (*M= 41.36*; *SD=6.77*) more than their

counterpart who reside in rural area who scored (*M=38.81*; *SD=6. 92*) on attitude toward PMTCT, *F(1, 357) =10.32, P =. 001,* with effect size of Eta Squared .02, and observed power of .81. Thus, those who dwell in urban area were more favourably disposed to PMTCT than their rural based counterparts. Therefore, hypothesis 2 was confirmed.

Table 3
Summary of 2- way ANOVA of educational level and location on attitude toward PMTCT

Source	SS	df	MS	F	sig.	Eta squared	Power
Educ.level	366.41	1	366.41	8.08	.005	.02	.81
Location	472.21	1	472.21	10.32	.001	.02	.89
Error	16328.83	357	45.74				
Total	17251.70	359					

Discussion

This study found that significant difference exists between pregnant women who had tertiary education and those pregnant women who did not have tertiary education in their attitude toward prevention of mother to child transmission of HIV/AIDS (PMTCT). Mothers who attained tertiary education, tended toward higher and more favourable attitude toward PMTCT than their counterparts, who had less than tertiary education. This implies that there is significant main effect of educational level on attitude toward PMTCT. This finding is in line with the first hypothesis which stated that differences would exist between tertiary and less than tertiary educated pregnant women in their mean scores on attitude toward PMTCT.

The implication is that pregnant women who had high education have better knowledge and understanding of HIV/AIDS prevention and control. They prefer to know their HIV/AIDS status especially during pregnancy. This could be explained on the ground that information on HIV/AIDS prevention and control is mostly disseminated in areas that high educated mothers

operate. High educated pregnant women are not afraid of either friends or husbands deserting them should their HIV/AIDS status become positive. They perceived the benefit of HIV test.

The finding of this study is in agreement with Ezeugwu, Ikeme and Onwasigwe (2005) in which educational level has significant effect on uptake of HIV test and perceived benefit of the test. Consistency in findings of the two studies could be attributed to the fact that the two studies were conducted within the same cultural background.

Furthermore, this study found that location of pregnant women has significant influence on attitude toward PMTCT. Those pregnant women who are residing in urban area are better disposed toward PMTCT than those residing in rural area. This could be explained on the ground that most pregnant women in urban area belong to high educated group that have better knowledge and benefit of HIV/AIDS test. It could also mean that information on PMTCT have not been properly carried to the rural areas of Anambra State. Thus, the rural dwellers especially pregnant women do not know much about PMTCT.

The finding is also consistent with the second prediction which stated that pregnant women dwelling in the urban area will score more on attitude toward PMTCT than their rural counterparts. It could mean that pregnant women residing in rural area have no access to HIV/AIDS counselling and testing generally. Most of them do not attend antenatal clinics because of non-availability of antenatal clinics in the rural areas. Therefore, educational level has significant influence on attitude toward PMTCT among pregnant women in Anambra state. Also, location (urban and rural dichotomy) has significant influence on the attitude of pregnant women used in this study. Therefore, educational level and location are implicated in attitude of pregnant women used in this study.

Theoretically, based on Health Belief Model (HBM), (Janz & Berker, 1984; Janz, & Champion, 2002), pregnant women's perceptions of their vulnerability or susceptibility and severity of HIV/AIDS spread can make them take actions that may prevent illness for them and their foetus, for example accessing PMTCT. Perceived vulnerability is the personal estimate of

the chances of contracting a disease while perceived severity is the very private, subjective evaluation of the consequences of the disease.

This has implication for pregnant women, healthcare workers, psychologists/counsellors, and scholars. Therefore, healthcare workers should as a matter of necessity integrate PMTCT in its routine antenatal progammes so as to capture pregnant women who may be at risk of HIV transmission. Furthermore, psychologists/counsellors should get involved in educating pregnant women on the need to embrace PMTCT as part of effort to reduce the spread of HIV/AIDS. Healthcare workers should intensify effort by carrying the message of preventing HIV/AIDS transmission from mother to child to the rural areas. Low educated individuals in general and pregnant women should be targeted in provision of message for HIV/AIDS prevention and control.

No study will claim to be free of limitations. Therefore, this study is limited by the following. The study used only education level and location as the variables influencing pregnant women's attitude toward PMTCT. There could be other variables that may be responsible for that but are not considered in this study.

It is suggested that further studies in this direction may consider other variables of pregnant women that may influence their attitude toward PMTCT such as religious orientation, locus of control, self-efficacy, interaction effect between educational level and location etc. Also, other studies may cover larger areas for better generalisation.

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