

## Research



# Knowledge, attitudes and practices regarding the prevention of mother-to-child transmission of HIV among pregnant women in the Bosome Freho District in the Ashanti region of Ghana: a descriptive cross-sectional design



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### Abstract

**Introduction:** the impact of HIV/AIDS on women and children has called for a higher increase in global commitment and response to the prevention of mother-to-child transmission (PMTCT). The study investigated the knowledge, attitudes and practices of pregnant women regarding PMTCT of HIV in Bosome Freho District in the Ashanti region of Ghana. **Methods:** a facility-based cross-sectional study was conducted in August of 2017, involving 339 pregnant women, selected through a multistage sampling technique. Data were collected through a structured pre-tested and validated questionnaire and analysed by using Stata SE version 12.0. Logistic regression analyses were used to test associations between background factors and the knowledge, attitudes and practices at 0.05 level of significance. **Results:** the level of knowledge was high (77.0%), attitudes were good (71.1%), and the practice of PMTCT was high (95.9%). However, the knowledge of participants on the importance of exclusive breastfeeding, the moments when HIV transmission occurs, and the merits of elective caesarean sections as an HIV preventive method were grossly insufficient. Knowledge was influenced by the level of education (AOR=19 (95% CI: 1.08-333.82); p=0.04); attitudes were influenced by the level of knowledge regarding PMTCT (AOR=5.3 (95% CI: 2.76-10.35); p<0.001). **Conclusion:** interventions to improve the knowledge, attitudes and practices regarding PMTCT should focus more on women with less than Senior High School (SHS) level of education. Exclusive breastfeeding and elective caesarean sections, though effective in reducing transmission of HIV from the mother to the child, could be missed opportunities in reducing the burden of HIV in this community.

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## Introduction

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Globally, about half of the adult population (50%) living with HIV are women [1]. HIV transmission rate is estimated to be between 5% to 10% during pregnancy, 10% to 15% during delivery and 5% to 20% during breastfeeding [2]. The scale-up of Prevention of Mother-to-Child Transmission (PMTCT) of HIV, is one of the greatest public health achievements in recent times. Services are increasingly integrated, new ways of delivering those services have been introduced, and antiretroviral (ARV) regimens to prevent children from acquiring HIV and support maternal health have also improved [3]. The programmes for the PMTCT of HIV include Antenatal HIV testing and counselling, avoiding unintended pregnancy, provision of appropriate ARV regimen for mothers and newborns, and support for safer infant feeding options and practices [4]. Ghana is striving towards achieving the zero new infections target for HIV. Even though there was significant progress towards the country's target in the reduction of new infections among children to less than 5%, much work remained to be done [5]. Consequently, the country in collaboration with its partners has rolled out PMTCT of HIV services through the encouragement of pregnant women to know their HIV serostatus. This knowledge has a direct positive influence in reducing the risk of HIV transmission from mother-to-child [6]. Notwithstanding the progress made so far, the prevalence of HIV amongst children born to HIV-positive mothers in 2013 was about 7%, which was in sharp contrast with the prevalence rate of 2% test result in the rest of the developed world [7]. The concept of PMTCT interventions in Ghana is to integrate PMTCT into the health services at all levels where intervention programmes can be undertaken to reduce the risk of HIV transmission from the mother-to-child, enhance early case detection and treatment of those infected and keep those who are HIV-negative uninfected [8]. No study on knowledge, attitudes and practices regarding PMTCT has been done in the Bosome Freho District

since its establishment as a district in 2008. It is against this background that this study was conducted to assess the knowledge, attitudes and practices regarding PMTCT of HIV among pregnant women in the Bosome Freho District in the Ashanti region of Ghana. Inadequate knowledge, lack of understanding of practices and poor attitudes could be major impediments to the success of PMTCT intervention.

## Methods

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**Study site description:** Bosome Freho District lies within latitude 6° 00'N and Longitudes 1° 35W. It covers a total land area of 630 square kilometres. The District is located in the southeastern part of the Ashanti Region and shares boundaries with seven (7) other districts namely, Bekwai Municipal and Bosomtwe District in the north-west, Ejisu-Juaben in the north-east, Asante Akim South in the east, Adansi North District in the south-west, Adansi South of Ashanti and Akim Mansu of Eastern Region in the south. Part of the district is along the Lake Bosomtwe in Ashanti Region. The District has been divided into five health sub-districts to ensure that staff take responsibility for clearly defined catchment areas to facilitate increased access to health service.

**Study population:** the study population was all the gestating patients attending the antenatal clinic (ANC) during the study period.

**Inclusion and exclusion criteria:** all consenting patients living in the district during the study period were included. High-risk patients and those who refused consent were excluded.

**Study design:** a descriptive cross-sectional design was used to investigate the knowledge, attitudes and practices regarding PMTCT among pregnant women visiting the ANC.

**Sample size determination:** the minimum sample size was obtained for this study by using the Cochran formula [9].

$$N = \frac{Z^2PQ}{d^2}$$

Where n= Sample size, Z=  $Z_{\alpha/2}$ , p= estimated proportion of an attribute that is present in the population, q = 1-p, d = margin of error. It was based on an estimated rate of HIV transmission from an HIV-positive mother to her child if not receiving any ARV regimen as 30% [10], assumptions of 95% level of confidence, 5% of margin of error and design effect of two and non-response rate of 5%. A sample size (n) =  $(1.96)^2 \times 0.3 \times (1-0.3)/(0.05)^2$  n=322.69 which was rounded up to 323, addition of 5% non-response rate =  $(323 \times 0.05) + 323=339$ . The minimum sample size for the study was 339 respondents.

**Sampling method:** a multistage sampling technique was used. Two health centres were purposively selected in the Bosome Freho District. This was done because there is no hospital servicing the areas, but only Community-based Health Planning and Services (CHPS). Simple random sampling with the lottery method was employed to select two other CHPS compounds in addition to the two health centres to be used for the study. During this stage, all the names of the health facilities excluding the health centres in the district were written on pieces of paper. These pieces of paper were folded and mixed before allowing a neutral person to randomly pick two of the folded papers that contained the names of the CHPS compounds. The two selected CHPS compounds were added to the two health centres and used for the study. However, due to the nature of the study population, the researcher conveniently selected the samples for the study. Pregnant women who reported to the selected health facilities for ANC at the time of data collection and who met the inclusion criteria were selected.

**Data collection:** data were collected in August 2017, using a pretested structured questionnaire with both open and close-

ended questions designed to address knowledge, attitudes and practices associated with PMTCT services. The next section of the questionnaire captured participants' sociodemographic characteristics: age, the level of education, marital status, religion and occupation. Training on the administration of the questionnaire was provided to three field workers. The questionnaires were administered to pregnant women who fulfilled the inclusion criteria of the study. The questionnaires were pre-tested among ten pregnant women in two communities in sub-districts that were not part of the actual study to check for clarity, consistency and acceptability of the questions to respondents. Following this, the necessary corrections were made and the questionnaires were finalized and administered to qualifying consenting participants.

**Data analysis:** the data were entered into Epi Data version 3.1 software. Stata SE version 12.0 was used to conduct data analysis. The Chi-square test of independence was used to test for associations between demographic characteristics and categorical dependent variables of interest (knowledge, attitudes and practice). Logistic regression analyses were used to test the strength of associations between background factors and the knowledge, attitudes and practice. Associations were reported as odds ratios with corresponding 95% Confidence Intervals (CIs), and all P values less than 0.05 were considered to be statistically significant.

**Ethical issues:** participation in this study conformed to the required ethical guidelines regarding the use of human subjects. Ethical approval for the study was obtained from the Ghana Health Service Ethics Review Committee (GHS-ERC: 32/05/17). Administrative clearance was given by the Bosome Freho District Health Directorate. Informed consent was sought and obtained from all participants. Participants' names were omitted from the data collection forms, and the information obtained was confidential. Participants were duly informed that refusal to participate in the study would not compromise regular health care services and that they were

free to withdraw from the study at any time if they deemed it necessary.

## Results

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**Demographic characteristics of the respondents:** the response rate for the study was 100%. Table 1 gives the demographic characteristics of the respondents. Most of the participants, 166 (49.0%) were below 26 years of age; 153 (45.1%) had attained junior high school (JHS); the majority, 304 (89.7%) were Christians; 226 (66.7%) were self-employed and 157 (46.3%) were married.

**Knowledge of PMTCT among the respondents:** the majority of participants, 337 (99.4%), agreed that PMTCT is important and the majority, 317 (93.5%) agreed that HIV could be transmitted from a mother to her baby, of whom majority, 249 (78.5%) said HIV could be transmitted during pregnancy. The majority 294 (86.7%) agreed that HIV transmission could be prevented. However, all of the 294 respondents disagreed with the fact that HIV transmission can be prevented through caesarean section and the majority, 288 (98.0%) said that transmission could be prevented through the use of ARTs. Of the 339 respondents, the majority, 155 (45.7%) indicated that they did not know if mothers could do anything to reduce the risk of transmission during breastfeeding and most, 297 (87.6%) indicated that they are aware of drugs that prevent mother-to-child transmission of HIV (Table 2). Respondents who mentioned two or more correct responses regarding the moments MTCT could occur and methods of prevention were classified as having good knowledge, while those who gave one or who either mentioned no correct response or who acknowledged not knowing, were regarded as having poor knowledge. The majority, 261 (77.0%), of the participants had a good knowledge of PMTCT.

**Association between demographic factors and knowledge regarding PMTCT:** senior high school attainers were 19 times more likely to have good knowledge of PMTCT than those who had no formal education (AOR =19.0 (95% CI: 1.08-333.82); p=0.044) (Table 3).

**Attitudes towards PMTCT among participants:** Table 4 shows that the majority, 257 (75.8%) of the participants believed that HIV-positive mothers should bear children; all the 339 (100.0%) believed that it was important for a pregnant woman to know her HIV status; 162 (47.8%) said an HIV-positive mother should breastfeed her baby and 170 (50.1%) said the baby could contract HIV infection if breastfed by an HIV-positive mother. Participants who expressed their opinion that an HIV-positive woman should bear children and breastfeed her baby were classified as having a good attitude towards PMTCT whilst those who disagreed with these statements were regarded as having a poor attitude towards PMTCT. The majority of the participants, 241 (71.1%) had a good attitude towards PMTCT.

**The Practice of PMTCT among participants:** from Table 5, the majority of the participants, 338 (99.7%) had tested for HIV during pregnancy and all the tests were done at the ANC. Of the 338 participants, 327 (96.7%) had their counselling before and after the test, of which 217 (66.4%) were counselled on a one-to-one basis. Most, 242 (71.6%) participants were aware of counselling and testing before going to the hospital. After testing, the majority of the participants, 322 (95.3%) received their test results and 268 (79.3%) did not reveal their results to anyone. The majority, 337 (99.7%) agreed that they would take ART if tested positive for HIV and all the 339 patients agreed that all pregnant women should test for HIV after being counselled. Participants who affirmed that they had been tested for HIV during their current pregnancy, that they would take Anti-Retroviral Therapy (ART) if tested positive for HIV, and that they would also entreat all pregnant women to go HIV testing after counselling, were classified as having good

practice of PMTCT, whilst respondents who were not tested, and who would not take ART if tested positive, were classified as having poor practice of PMTCT. The majority of the participants, 325 (95.9%) employed good practice regarding PMTCT.

**Associations between demographic characteristics, level of knowledge and attitudes towards PMTCT:** respondents who had good knowledge of PMTCT were 5 times more likely to have a good attitude towards PMTCT than those who had poor knowledge (AOR =5.3 (95% CI: 2.76-10.35); p=0.000) (Table 6).

**Association between demographic factors, level of knowledge, level of attitude and practice of PMTCT:** also, the unadjusted logistic regression model revealed that respondents who had a good knowledge were 5 times more likely to employ good practice and practice the requisite PMTCT than those who had a poor knowledge (COR =4.5 (95% CI: 1.54-13.03); p=0.006) and respondents who had a good attitude were 3 times more likely to have a good practice of PMTCT than those who had a poor attitude (COR =3.0 (95% CI: 1.06-8.51); p=0.039). However, after adjusting for confounding variables, no significant association was found (Table 7).

## Discussion

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Having adequate knowledge of PMTCT is critical in reducing MTCT of HIV. The adequate knowledge level in our study was higher (77%), compared to that of a study conducted in the Kumasi metropolis of Ghana (10%) [11], Ethiopia (34.9%) [12] and Tanzania (54%) [13]. The higher knowledge level in the current study compared to other studies could be due to the health education that has been taking place in ANCs in the study area over a while. Despite the high level of adequate knowledge regarding PMTCT, the current study identified gaps

regarding the knowledge and potential practice levels regarding use of elective caesarean section and exclusive breastfeeding in curbing HIV transmission: the majority of the respondents (98.0%) said that transmission could not be prevented by avoiding breastfeeding and 294 (100.0%) disagreed that transmission could be prevented through caesarean section. Mixed-feeding is associated with a higher risk of HIV transmission [14], and healthy breastfeeding practices constitute the cornerstone of preventing PMTCT [4]. Concerning the modes of HIV/AIDS transmission from mother-to-child in the current study, only 41 (12.9%) agreed that transmission occurs during delivery or labor, and 39 (12.3%) also agreed that transmission occurs during breastfeeding. The overall level of knowledge of PMTCT showed significant associations with the educational level. Mothers with SHS level of education were 19 times more likely to have a good knowledge of PMTCT than those with no formal education. This could be because mothers who had a basic level of education might have been educated on HIV/AIDS and might have understood the importance of prevention of HIV/AIDS from mother to child. Furthermore, when women are better educated their access to and interpretation of information may also increase.

Regarding the attitudes toward PMTCT from the current study, most of the respondents, 170 (50.1%) affirmed that the child would acquire HIV infection should an HIV-positive mother breastfeed him/her. A study conducted across SSA also indicated that 85% of the 150,000 children infected with HIV globally live in SSA and the majority of these infections was through breastfeeding [3]. The current study reported fewer participants 162 (47.8%) affirming that an HIV-positive woman should breastfeed the child. Even though, the current study revealed that the majority of participants had only primary education, their good attitudes towards PMTCT seem to be influenced by their high level of knowledge on PMTCT regardless of their educational level. Therefore, the current study reported a significant association between the level of

attitude and the level of knowledge of PMTCT. Regarding the practice of PMTCT in the current study, most participants 338 (99.7%) had tested for HIV during the period of their pregnancy. This might be because all pregnant women are educated on the importance and the need to be tested at ANC. This would ensure that an HIV-positive mother can seek care early to prevent the child from acquiring the infection. Furthermore, 337 (99.7%) of pregnant women said they would take ART if tested positive for HIV. Increasing efforts on regular visits among pregnant women should make use of these positive attitudes towards complying with ART treatment plans after testing [1,15]. Increasing adequate knowledge levels was also positively associated with PMTCT uptake. This, therefore, mandates regular assessment of the levels of knowledge. The study did not investigate the HIV status of the participants. It is possible that knowing one's HIV status, or participants that could already be on combination antiretroviral therapy (cART), would offer different responses compared to the HIV-negative, or cART-naïve patients [16].

## Conclusion

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The level of knowledge regarding PMTCT in this district is high. Participants' attitudes toward PMTCT are positive. Exclusive breastfeeding and elective caesarean sections, as effective HIV transmission prevention strategies, appear to be unknown, and likely under-utilised in this community. Health promotion services should incorporate these aspects in their intervention strategies and should target those with lower than SHS level of education.

### What is known about the topic

- The scale-up of Prevention of Mother-to-Child Transmission (PMTCT) of HIV, is one of the greatest public health achievements in recent times;
- Ghana has rolled out PMTCT of HIV services through the encouragement of pregnant women to know

their HIV serostatus to help reduce the risk of HIV transmission from mother-to-child;

- The prevalence of HIV amongst children born to HIV-positive mothers in Ghana was about 7%, which was in contrast with the less than 2% test result in the developed world.

### What this study adds

- The level of knowledge regarding PMTCT in this district is high;
- Participants' attitudes towards PMTCT are positive;
- Exclusive breastfeeding and elective caesarian sections, as effective HIV transmission prevention strategies, appear to be unknown.

## Competing interests

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The authors declare no competing interest.

## Authors' contributions

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Victoria Nyarko and Elvis Enowbeyang Tarkang conceived the research idea, wrote the protocol and carried out the data collection. Victoria Nyarko, Lilian Pencille, Derick Akompab Akoku and Elvis Enowbeyang Tarkang wrote and critically reviewed versions of the manuscripts. All authors read and agreed on the final version of this manuscript.

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## Tables

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**Table 1:** demographic characteristics of respondents

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**Table 3:** association between the socio-demographic characteristics and the level of knowledge of PMTCT among respondents

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**Table 6:** association between the socio-demographic characteristics, level of knowledge and the level of attitude toward PMTCT among respondents

**Table 7:** association between the socio-demographic characteristics, level of knowledge and the level of attitude and practice of PMTCT among respondents

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**Table 1:** demographic characteristics of respondents

Variable	Frequency (%)
<b>Age group</b>	n=339
14-20	64(18.9)
21-25	102(30.1)
26-30	95(28.0)
31-35	46(13.6)
36-43	32(9.4)
<b>Education level</b>	
No education	32(9.4)
Primary	92(27.1)
JHS	153(45.1)
SHS	43(12.7)
Tertiary	17(5.1)
vocational	2(0.6)
<b>Religion</b>	
Christian	304(89.7)
Muslim	35(10.3)
<b>Employment status</b>	
Unemployed	85(25.0)
Self-employed	226(66.7)
Civil servant worker	28(8.3)
<b>Marital Status</b>	
Married	157(46.3)
Cohabiting	146(43.1)
Single	36(10.6)



<b>Table 2: knowledge of PMTCT of respondents</b>	
<b>Having knowledge about HIV</b>	
Yes	339(100.0)
No	0(0.0)
<b>Having heard about PMTCT</b>	
Yes	339(100.0)
No	0(0.0)
<b>PMTCT is important</b>	
Yes	337(99.4)
I don't know	2(0.6)
<b>HIV can be transmitted from a mother to a baby</b>	
Yes	317(93.5)
No	6(1.8)
Do not Know	16(4.7)
<b>HIV could be transmitted during pregnancy (n=317)</b>	
Yes	249(78.5)
No	68(21.5)
<b>HIV could be transmitted during delivery/labour (n=317)</b>	
Yes	41(12.9)
No	276(87.1)
<b>HIV could be transmitted during breastfeeding (n=317)</b>	
Yes	39(12.3)
No	278(87.7)
<b>HIV transmission could be prevented</b>	
Yes	294(86.7)
No	7(2.1)
Do not know	38(11.2)
<b>HIV transmission can be prevented through the use of ARVs (n=294)</b>	
Yes	288(98.0)
No	6(2.0)
<b>HIV transmission can be prevented by avoiding breastfeeding (n=294)</b>	
Yes	6(2.0)
No	288(98.0)
<b>HIV transmission can be avoided through caesarean section (n=294)</b>	
No	294(100.0)
<b>An HIV-positive mother can help to reduce the risk of transmission when breastfeeding (n=339)</b>	
Yes	128(37.8)
No	56(16.5)
Do not know	155(45.7)
<b>Having heard about any drug that prevents a mother to child transmission (n=339)</b>	
Yes	297(87.6)
No	42(12.4)

<b>Table 3: association between the demographic characteristics and the level of knowledge of PMTCT among respondents</b>						
<b>Level of knowledge</b>						
	<b>Poor</b>	<b>Good</b>				
<b>Variables</b>	<b>Frequency (%)</b>	<b>Frequency (%)</b>	<b>χ<sup>2</sup></b>	<b>p-value</b>	<b>COR (95% C.I) P-Value</b>	<b>AOR (95% C.I) P Value</b>
<b>Age group</b>						
14-20	16 (25)	48 (75.0)				
21-25	7(6.9)	95 (93.1)			4.3 (1.71-10.98) 0.002	2.1 (0.62-7.29) 0.232
26-30	15 (15.8)	80 (84.2)	11.2603	0.024	1.8 (0.81-3.85) 0.152	0.6 (0.17-2.33) 0.489
31-35	8 (17.4)	38 (82.6)			1.5 (0.61-3.90) 0.362	0.7 (0.17-3.03) 0.645
36-43	7 (21.9)	25 (78.1)			1.2 (0.43-3.10) 0.773	0.6 (0.12-2.72) 0.490
<b>Education</b>						
No education	7 (21.9)	25 (78.1)				
Primary	28 (30.4)	64 (69.8)			0.7 (0.26-1.68) 0.389	0.8 (0.29-2.10) 0.618
JHS	18 (11.8)	135 (88.2)			2.2 (0.83-5.56) 0.113	2.6 (0.90-7.64) 0.078
SHS	0 (0.0)	43 (100.0)	29.4505	0.000	25.6 (1.40-466.98) 0.029	19.0 (1.08-333.82) 0.044
Tertiary	0 (0.0)	17 (100.0)			10.3 (0.55-192.14) 0.118	7.0 (0.02-2413.27) 0.513
vocational	0 (0.0)	2 (100.0)			1.5 (0.06-34.10) 0.810	1.3 (0.05-31.34) 0.876
<b>Religion</b>						
Christian	44 (14.5)	260 (85.5)				
Muslim	9 (25.7)	26 (74.29)	3.0066	0.083		
<b>Occupation</b>						
Unemployed	20 (23.5)	65 (76.5)				
Self-employed	33 (14.6)	193 (85.4)	9.3885	0.009	1.8 (0.98-3.35) 0.06	2.7 (0.95-7.68) 0.063
Civil servant	0 (0.0)	28 (100.0)			17.8 (1.04-305.24) 0.047	3.2 (0.03-394.49) 0.631
<b>Marital status</b>						
Married	21 (13.4)	136 (86.6)				
Cohabiting	23 (15.8)	123 (84.3)	3.0028	0.223		
Single	9 (25.0)	27 (75.0)				

<b>Table 4: attitudes towards PMTCT among participants</b>	
<b>Variable</b>	<b>Frequency (%)</b>
<b>An HIV-positive woman should bear a child</b>	
Yes	257(75.8)
No	82(24.2)
<b>Knowing your status when pregnant is important</b>	
Yes	339(100.0)
<b>An HIV positive woman should breastfeed her baby</b>	
Yes	162(47.8)
No	130(38.4)
Dont know	47(13.8)
<b>Opinion about a mother who is HIV positive breastfeeding baby</b>	
Baby will get HIV infection	170(50.2)
She may not have money for formula	16(4.7)
Baby can die if she doesn't breastfeed	126(37.2)
Dont Know	23(6.8)
other	4(1.1)

<b>Table 5: practice of PMTCT among respondents</b>	
<b>Having tested for HIV during your pregnancy</b>	
Yes	338(99.7)
No	1(0.3)
<b>Place the HIV test was conducted (n=338)</b>	
Antenatal Clinic	338(100.0)
<b>PMTCT counselling offered before and after the test (n=338)</b>	
Yes	327(96.7)
No	11(3.3)
<b>How the counselling was done (n=327)</b>	
One to One	217(66.4)
Group counselling	110(33.6)
<b>Being aware of the HIV counselling and testing before coming to this hospital</b>	
Yes	242(71.6)
No	96(28.4)
<b>Having received the result of the HIV test (n = 338)</b>	
Yes	322(95.3)
No	16(4.7)
<b>Having disclosed the HIV test result to anyone (n=338)</b>	
Yes	70(20.7)
No	268(79.3)
<b>Opinion on ARV intake if tested positive for HIV (n=338)</b>	
Yes	337(99.7)
Dont know	1(0.3)
<b>Opinion on whether all pregnant women should do HIV testing after being counselled</b>	
Yes	339(100.0)

**Table 6:** association between the demographic characteristics, level of knowledge and the level of attitude toward PMTCT among respondents

<b>Level of Attitude</b>						
<b>Variable</b>	<b>Poor Frequency (%)</b>	<b>Good Frequency (%)</b>	<b><math>\chi^2</math></b>	<b>p-value</b>	<b>COR (95% C.I) P-Value</b>	<b>AOR (95% C.I) P-Value</b>
<b>Age group</b>						
14-20	20 (31.3)	44 (68.8)				
21-25	23 (22.5)	79 (77.5)				
26-30	27 (28.4)	68 (71.6)	2.2268	0.694		
31-35	11 (23.9)	35 (76.1)				
36-43	7 (21.9)	25 (78.1)				
<b>Level of education</b>						
No education	9 (28.1)	23 (71.9)			1	1
Primary	34 (37.0)	58 (63.0)			0.7 (0.29-1.62), 0.391	0.8 (0.32-2.22), 0.735
JHS	43 (28.1)	110 (71.9)	23.0529	0.000	1.0 (0.45-2.36), 0.95	1.0 (0.37-2.51), 0.934
SHS	2 (4.7)	41 (95.3)			6.7 (1.52-29.55), 0.012	3.4 (0.72-16.53), 0.123
Tertiary	0 (0.0)	17 (100.0)			14.1 (0.77-259.83), 0.074	2.7 (0.04-209.04), 0.651
<b>Religion</b>						
Christian	76 (25.0)	228 (75.0)				
Muslim	12 (34.3)	23 (65.7)	1.408	0.235		
<b>Occupation</b>						
Unemployed	26 (30.6)	59 (69.4)			1	1
Self-employed	62 (27.4)	164 (72.6)	11.0204	0.004	1.2 (0.68-2.02), 0.566	0.9 (0.37-2.29), 0.86
Civil servant	0 (0.0)	28 (100.0)			25.4(1.49-431.58), 0.025	3.5 (0.06-196.16), 0.54
<b>Marital status</b>						
Married	35 (22.3)	122 (77.7)				
Cohabiting	41 (28.1)	105 (71.9)				
Single	12 (33.3)	24 (66.7)	2.4588	0.292		
<b>Knowledge Level</b>						
Poor	34 (64.2)	19 (35.8)			1	1
Good	54 (18.9)	232 (81.1)	47.6763	0.000	7.5 (4.02-14.15), 0.000	5.3 (2.76-10.35), 0.000

JHS: Junior High School; SHS: Senior High School

**Table 7:** association between the demographic characteristics, level of knowledge, the level of attitude and practice of PMTCT among respondents

<b>Level of Practice</b>						
	<b>Poor</b>	<b>Good</b>				
<b>Variable</b>	<b>Frequency (%)</b>	<b>Frequency (%)</b>	<b>χ<sup>2</sup></b>	<b>p-value</b>	<b>COR (95% C.I) P-Value</b>	<b>AOR (95% C.I) P-Value</b>
<b>Age group</b>						
14-20	3 (4.7)	61 (95.3)				
21-25	4 (3.9)	98 (96.1)				
26-30	5 (5.3)	90 (94.7)	0.8957	0.925		
31-35	1 (2.2)	45 (97.8)				
36-43	1 (3.1)	31 (96.9)				
<b>Education</b>						
No education	1 (3.1)	31 (96.9)				
Primary	2 (2.2)	90 (97.8)				
JHS	11 (7.2)	142 (92.8)	7.2591	0.202		
SHS	0 (0.0)	43 (100.0)				
Tertiary	0 (0.0)	17 (100.0)				
vocational	0 (0.0)	2 (100.0)				
<b>Religion</b>						
Christian	12 (3.9)	292 (96.1)				
Muslim	2 (5.7)	33 (94.3)	0.2475	0.619		
<b>Occupation</b>						
Unemployed	5 (5.9)	80 (94.1)				
Self-employed	9 (4.0)	217 (96.0)				
Civil servant	0 (0.0)	28 (100.0)	1.878	0.391		
<b>Marital status</b>						
Married	6 (3.8)	151 (96.2)				
Cohabiting	8 (5.5)	138 (94.5)	2.2601	0.323		
Single	0 (0.0)	36 (100.0)				
<b>Knowledge Level</b>						
Poor	6 (11.3)	47 (88.7)				
Good	8 (2.8)	278 (97.2)	8.2049	0.004	4.5 (1.54-13.03) 0.006	3.6 (0.98-12.87) 0.053
<b>Attitude Level</b>						
Poor	7 (8.0)	81 (92.0)				
Good	7 (2.8)	244 (97.2)	4.3914	0.036	3.0 (1.06-8.51) 0.039	1.6 (0.51-5.04) 0.425
JHS: Junior High School; SHS: Senior High School						