

## Common facts and fictions about HIV transmission, prevention and treatment among PLWHA attending a tertiary healthcare centre in North-Western Nigeria.

\*Amoko A.<sup>2</sup>, MacLeod ET.<sup>1</sup>, DR Koforade AY.<sup>2</sup>

### Abstracts

**Objectives:** The transmission, prevention, and treatment of the human immunodeficiency virus (HIV) are greatly influenced by human behavioral practices. This makes knowledge of some truths (facts) and lies (fictions) about the disease extremely important in its prevention and control. Several studies on the assessment of knowledge about HIV infection have been undertaken among the general population, but only a few have involved people living with HIV/AIDS (PLWHA). This study was conducted to assess the level of knowledge and understanding on transmission, prevention, and treatment of HIV infection among PLWHA attending an adult anti-retroviral therapy (ART) clinic at Federal Medical Centre, Birnin Kebbi, North-western Nigeria.

**Method:** The study was conducted as a hospital-based descriptive cross-sectional study using interviewer-administered questionnaires among 62 patients, selected by convenience sampling technique, attending adult ART-clinic over a period of 8 weeks. The data was analyzed using SPSS-16.

**Result:** More than 70% of the respondents scored above 75% in the questions on modes of transmission of HIV infection. However, 73.4% of the respondents believed HIV infection was curable, and 40.6% believed there is commercially available vaccination against HIV infection. There were statistically significant associations between high mean scores (75% and above) in questions on modes of transmission and prevention of HIV, and being of Hausa ethnicity (p-value=0.013), having a senior secondary or higher level of education (p-value=0.014) and being a resident in an urban setting (p-value=0.003)

**Conclusion:** There is a fairly good basic knowledge about HIV transmission, prevention and treatment among the respondents; however, there is need for improvement in knowledge on certain lies/fictions regarding the disease.

**Key words:** Facts, fictions, HIV, PLWHA, North-western Nigeria

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## Faits et fictions courants sur la transmission, la prévention et le traitement du VIH chez les PVVIH fréquentant un centre de soins de santé tertiaires dans le nord-ouest du Nigéria

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### Résumé

**Objectif de l'étude:** La transmission, la prévention et le traitement du virus de l'immunodéficience humaine (VIH) sont fortement influencés par les pratiques comportementales humaines. Cela rend la connaissance de certaines vérités (faits) et mensonges (fictions) sur la maladie extrêmement importante dans sa prévention et son contrôle.

Plusieurs études sur l'évaluation des connaissances sur l'infection à VIH ont été entreprises dans la population générale, mais seules quelques-unes ont impliqué des personnes vivant avec le VIH/SIDA (PVVIH). Cette étude a été menée pour évaluer le niveau de connaissances et de compréhension sur la transmission, la prévention et le traitement de l'infection à VIH chez les PVVIH fréquentant une clinique de thérapie antirétrovirale (ART) pour adultes au Centre médical fédéral de Birnin Kebbi, au nord-ouest du Nigéria.

**Méthode de l'étude :** L'étude a été menée sous la forme d'une étude transversale descriptive en milieu hospitalier à l'aide de questionnaires administrés par un intervieweur auprès de 62 patients, sélectionnés par une technique d'échantillonnage de commodité, fréquentant une clinique de TAR pour adultes sur une période de 8 semaines. Les données ont été analysées à l'aide de SPSS-16.

**Résultat de l'étude:** Plus de 70 % des répondants ont obtenu un score supérieur à 75 % aux questions sur les modes de transmission de l'infection à VIH. Cependant, 73,4 % des personnes interrogées pensaient que l'infection par le VIH était guérissable et 40,6 % pensaient qu'il existe un vaccin contre l'infection par le VIH disponible dans le commerce. Il y avait des associations statistiquement significatives entre des scores moyens élevés (75 % et plus) aux questions sur les modes de transmission et de prévention du VIH, et le fait d'être d'origine ethnique haoussa (valeur de  $p = 0,013$ ), d'avoir un niveau d'études secondaire supérieur ou supérieur ( $p$ -value=0.014) et être résident en milieu urbain ( $p$ -value=0.003)

**Conclusion :** Il existe une assez bonne connaissance de base sur la transmission, la prévention et le traitement du VIH parmi les répondants; cependant, il est nécessaire d'améliorer les connaissances sur certains mensonges/fictions concernant la maladie.

**Mots-clés:** Faits, fictions, VIH, PVVIH, Nord-ouest du Nigéria

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## INTRODUCTION

HIV/AIDS remains one of the most serious public health problems in sub-Saharan Africa and the world as a whole. Since the onset of the epidemics, more than 75 million people have been infected with the virus, and close to 32 million people have died from AIDS (1). As of 2018, an estimated 0.8% (0.6-0.9%) of adults aged 15-49 years worldwide were living with HIV infection (1). Africa remains the most severely affected region in the world with 1 in every 25 adults (3.9%) living with HIV, and accounting for more than two-thirds of the people living with HIV in the world (1). In Nigeria, in 2018, there were about 130,000 HIV newly infected individuals, and 1.9 million people were living with HIV/AIDS (2). In the same year, the HIV incidence per 1000 uninfected people in Nigeria was 0.65; the prevalence among adults (15-49yrs old) was 1.5% and there were 53,000 AIDS-related deaths (2).

Transmission of HIV is highly related to some specific behavioral patterns, which make adequate knowledge about the disease imperative in its prevention (3,4). Adequate knowledge about HIV infection can positively affect perceptions and attitudes towards the disease. Though modification of certain behavioral practices among PLWHA is highly important in reducing the transmission of HIV/AIDS, studies on knowledge, attitude, and perception of HIV infection rarely include PLWHA. Among the few studies found during the literature search for this work was a study done by Gupta *et al.* (5) among PLWHA attending a tertiary health centre in North India. In this study, up to 87.3% of the participants believed HIV infection could be contracted from public toilets, sneezing/coughing, hugging/kissing, shaking hands, and living in the same house with HIV infected persons (5). This study also showed that just 33% of the participants were aware that the disease could be transmitted through infected sharps, and up to 30.7% of the respondents believed that HIV infection could be transmitted by mosquitoes (5).

A similar study conducted in Puducherry, South India, among 200 HIV-positive subjects attending a tertiary care hospital and three Non-Governmental Organization centres, by Mahalashmy *et al.* (6) in 2011 showed that 41% of the participants believed HIV could be transmitted through saliva, toilet seats, casual social contacts, and mosquito bites. This study also showed that urban residents, patients with educational status above class 10 (senior

secondary school level of education and above), duration since diagnosis of more than one year, counseled subjects, and subjects who received care from the NGOs were more likely to have a high knowledge score (6).

Considering these studies, it is obvious that there is a possibility that an individual with HIV infection may not have adequate knowledge about the disease. Our study was set out to assess the knowledge about common facts (truths) and fictions (lies) that surround HIV transmission, prevention, and treatment among patients attending adult ART-clinic at the federal medical centre (FMC), Birnin Kebbi, Nigeria.

## MATERIALS AND METHODS

This study was conducted as a cross-sectional study among adult (18 years and older) HIV positive patients attending an anti-retroviral (ART) clinic at FMC, Birnin-Kebbi, North-western Nigeria. The study was conducted on clinic days (once weekly) over a period of 8 weeks (December 7<sup>th</sup>, 2019 to January 26<sup>th</sup>, 2020). The intention of the researchers was to recruit all patients who met the inclusion criteria and attended the clinic during the 8 weeks of the research using convenience sampling method. A total of 120 participants were anticipated to be recruited during the study duration, but just 64 participants were recruited due to low patients' turn-out during this period. All consenting adults of ages 18 years and older with HIV infections who were attending the ART clinic at FMC, Birnin Kebbi, were considered as eligible for the study. Patients that were less than 18 years of age; those that required emergency treatment, those that lacked adequate cognitive function to attend to the questionnaires; and those that did not grant their consent were excluded from the study. Data were collected using an interviewer-administered semi-structured questionnaire that was adapted from a questionnaire used in a similar study by Gupta *et al* in India (5). At the end of the study, the completed questionnaires were sorted and coded serially. Collected data were analyzed using the statistical package for social sciences (SPSS) version 16.0. Frequency tables were generated for relevant variables, and Chi-square test was used to assess the degree of association between the mean scores and socio-demographic variables. A probability-value (p-value) of less than 0.05 was considered statistically significant, and the confidence interval was set at 95%.

Ethical principles guiding research of this nature were adhered to. Clearance to conduct the study was obtained from the Ethical Review

Committee of FMC, Birnin Kebbi. Participants were adequately informed about the study, and written consent was obtained from them. Confidentiality with respect to the participants' information was thoroughly observed.

## RESULTS

Table 1 shows the socio-demographic characteristics of the respondents. A total of 64 patients participated in the study and were analyzed. Thirty-nine (60.9%) of the respondents were females, and 25 (39.1%) were males, giving female to male ratio of 1.6:1. Respondents' ages range from 18 to 60 years, with a mean age of 37.6 years (SD±9.4). More than 80% of the participants were between the ages of 20 and 50 years with the participants within the age group 30-39 years having the highest representation [25 (39.1%)]. About 90% of the respondents were Muslims, and the majority of the respondents were Hausas (79.6%). Close to 60% of the participants had at least a secondary level of education, and trading was the most common occupation practiced (34.4%). Majority of the respondents were currently married (62.5%). Thirty-five (56.3%) of the respondents were from urban settings.

Table 2 shows the sources of information on transmission, prevention and treatment of HIV/AIDS among the respondents. The major sources of information were radio (37.0%), family and friends (27.8%), and television (22.2%). Only 1.6% of the participants identified healthcare personnel as their only source of information.

Table 3 shows the scores of the respondents in the questions on modes of transmission of HIV. All the respondents (100%) knew HIV could be transmitted through unprotected sexual intercourse and transfusion with infected blood and blood products. More than 95% (98.3%) of the participants knew HIV could be transmitted through injury from or use of contaminated needles; 93.8% knew it could be transmitted from mother to child during childbirth; and 90.6% knew it could be transmitted through breast feeding. However, up to 28.1% and 25.0% of the participants believe HIV can be transmitted through kissing and mosquito/insect bites, respectively.

Table 4 shows the scores of the respondents in questions on the prevention and treatment of HIV infection. More than 95% of the respondents knew HIV transmission could be prevented by abstinence from sexual intercourse, 84.4% knew it could be prevented by use of latex condom, and 81.2% knew it could be prevented

by avoiding high risk behaviors such as excessive use of alcohol and/or recreational drugs. However, about 40% of the respondents thought there was commercially available vaccine to prevent HIV infection; 35.9% of the respondents thought that to prevent HIV transmission, all personal items should be separated from the items of infected persons, and 28.1% thought all physical contacts with infected persons should be avoided. Forty-seven (73.4%) of the respondents believed HIV/AIDS was curable. Sixty-three (98.4%) of the 64 respondents believed HIV/AIDS could be cured by prayers, even though 47 (73.4%) of the respondents chose yes in the question on whether HIV infection was curable or not. Out of the 64 total respondents, 43 (67.2%) and 12 (18.8%) believed HIV/AIDS could be cured with orthodox medicine and traditional medicine (complementary and alternative medicine) respectively.

Table 5 shows the association between the mean scores in questions on prevention and modes of HIV transmission and the socio-demographic characteristics of the respondents; 75% of the respondents had mean scores of 75% (high mean score). Significant associations were observed between high mean scores and the following socio-demographic characteristics: ethnicity, level of education, and social background. Respondents of Hausa ethnicity had a higher percentage of those with mean scores of 75% (82.4%) than those of non-Hausa ethnicity (46.2%) ( $p=0.013$ ). Respondents that had a senior secondary level of education and above had a higher percentage of those with mean scores of 75% (87.9%) than those with a junior secondary level of education and below (61.3%) ( $p=0.014$ ). Respondents that came from urban settings had a higher percentage of those with mean scores of 75% (85.7%) than those from rural setting (62.1%) ( $p=0.030$ ).

## DISCUSSION

This study was conducted to assess the knowledge on the common facts (truths) and fictions (lies) that surround HIV transmission, prevention, and treatment among PLWHA attending adult ART-clinic at FMC, Birnin Kebbi, Northwestern Nigeria.

Similar to other studies (7,5,8,9), radio (37.0%) and television (22.0%) were major sources of information for knowledge on HIV infection in this study. This shows the pivotal role that mass-media are capable of playing in providing health education about different kinds of health issues. It is, however, surprising that only 1 out of the 64 respondents (1.6%) indicated

healthcare personnel as a source of information on HIV infection. This is contrary to findings in some similar studies, such as Gupta's study in India, which indicated that 64.7% of the respondents identified healthcare personnel as source of information (5). Ojieabu *et al.* (8) revealed in their study among pregnant women in South-western Nigeria, that a relatively lower percentage of the participants indicated medical personnel (36.5%) as a source of information on HIV infection when compared to television (79.2%) and radio (about 60%). These findings may be an indication of the inadequate provision of health education on HIV/AIDS by healthcare personnel in Nigeria.

The knowledge of the respondents on ways HIV can be transmitted was very good, with 100% of the respondents knowing that HIV can be transmitted through unprotected sexual intercourse and transfusion with infected blood and blood products. Over 90% of them knew HIV can be transmitted through contaminated needles and syringes, contaminated blades or razors, from an infected mother to a child during birth, and through breast feeding. A similar study by Gupta in India also showed that high percentage of the respondents knew HIV could be transmitted through unprotected sexual intercourse (82.7%) and transfusion with infected blood (70.7%) (5). The proportions of respondents in Gupta's study (5) who knew HIV could be transmitted from mother to child during birth and through breast feeding (38.7% and 22.7% respectively) were, however, well below the findings in our study (93.8% and 90.6% respectively). Ojieabu's study among pregnant women also indicated a lower percentage of participants (51.4%) were aware of mother to child transmission of HIV (8). The higher percentage of respondents with knowledge on mother –to-child transmission of HIV in our study may be due to an increase in awareness of mother-to-child transmission of HIV that has come over time with the global campaigns on prevention of mother-to-child transmission of HIV.

The performance of the respondents in questions on ways HIV is not usually transmitted was not too impressive, with up to 50% of the participants believing HIV can be transmitted through the sharing of personal items like clothes with the infected person. About 28% of the respondents also believed HIV could be transmitted through kissing, and 25% of them believed HIV could be transmitted through insect or mosquito bites. These findings were similar to

those of Gupta in India, who found in his study that the percentages of respondents who believed HIV could be transmitted through sharing of personal items, kissing, and mosquito bite were 26.7%, 21.3% and 30.7% respectively (5). Mahalasmay *et al.* (6) in their study in South India found that up to 41% of PLWHA that participated in their study believed HIV could be transmitted through saliva, toilet seats, casual social touch and mosquito bite. It is surprising that such proportions of respondents could still be holding such misconceptions about HIV transmission. This may be due to significant number of the respondents having little or no formal education (48.4% of respondents had less than senior secondary level of education) which can possibly reduce their ability to access information on HIV infection.

Questions on facts about prevention of HIV transmission revealed that 95.3% of the respondents were aware that HIV could be prevented by abstinence from sexual intercourse, 84.4% were aware of prevention by the use of latex condoms during sexual intercourse, and 81.2% were aware that the risk of contracting HIV can be significantly reduced by avoiding certain high risk behaviors. Durojaiye (7), in his study of the general population among tertiary education students in Nigeria, also found that a high percentage of the respondents were aware that HIV transmission can be prevented by abstinence from casual sex (75.5%) and use of condom (80.8%). The study by Gupta *et al.* (5) shows a high percentage of the respondents (70.7%) were aware that HIV transmission can be prevented by use of condom but only 16% of the participants favored complete abstinence as a preventive measure. Having a high percentage of respondents aware of the fact that HIV transmission could be prevented by abstinence from sexual intercourse and the use of condoms in our study was good and not surprising, as campaigns on prevention of HIV transmission through the use of A (abstinence), B (be faithful), and C (condom) measures have been popular and in existence for some time. A multilevel analysis study done by Uthman *et al.* (10) in Ilorin on individuals and contextual socio-economic determinants of knowledge of the ABC approach to preventing sexual transmission of HIV in Nigeria, showed that about 80% of the respondents were aware of at least one of the components of ABC approach to preventing sexual transmission of HIV.

In respect to the questions on fictions about prevention of HIV transmission, 28.1% of

the respondents thought avoidance of all physical contacts was necessary for prevention of HIV transmission; 35.1% thought all personal items must be separated from the items of the infected persons; and 40.6% thought there was a commercially available vaccine to prevent HIV transmission. Gupta *et al.*<sup>5</sup> also found a significant number of participants in their study, who believed avoidance of physical contacts (28.7%) and separating personal items (18.7%) would help prevent HIV transmission. It is surprising that such misconceptions still exist, particularly among PLWHA.

Concerning the treatment of HIV infection, 73.4% of the respondents believed the disease is curable at present; 98.7% believed it can be cured with prayer; 67.2% believed it could be cured with orthodox medicine; and 18.8% believed it can be cured with traditional medicine. Up to 73.4% of the respondents believe HIV infection is curable at present, which is surprising. This may be due to high influence of religion in the country. An average Nigerian, irrespective of their level of education, believes God can do all things through prayers. This can also be observed in the number of people who believed HIV could be cured with prayers; 98.4% of the respondents believed HIV/AIDS could be cured with prayer, despite the fact that 73.4% were those who indicated that HIV/AIDS was curable. A study by Oluwabamide and Umoh in 2010 on the assessment of the relevance of religion to healthcare delivery in Nigeria in Akwa Ibom, South-south Nigeria, revealed that nearly all the participants of the study expressed their total dependence on God for healing regardless of the nature of the illness (11).

The number of respondents who believed HIV/AIDS could be cured with orthodox medicine at present was high (67.2%). Gupta *et al.*<sup>5</sup> in their study also discovered that 31.3% of the respondents believed HIV/AIDS was curable with early treatment. This kind of information is important as it can be a reflection of the patients' expectations which can affect their compliance with treatment in future, especially when they are no longer symptomatic. It is therefore important to bridge this knowledge gap in managing a patient with HIV infection. It is, however, impressive that despite the claims by many traditional healers that they can cure HIV/AIDS, only 18.8% of the respondents in this study believed HIV could be cured with traditional medicine.

Statistically significant associations were found between higher mean scores in

questions on modes of transmission and prevention of HIV infection and: 1) Hausa ethnicity (p-value=0.013); 2) secondary or higher level of education (p-value=0.014); and 3) being from an urban setting (p-value= 0.003). A similar study done by Mahalasmay *et al.* (6) in South-India in 2011, also showed that urban residents and patients with educational levels above class10 (senior secondary school and above) were more likely to have higher knowledge scores. Mehmet's study among university students in Xinjiang, China, showed that mean knowledge scores were significantly different by ethnicity, gender, subject major, and year of study in the University (12)

The significant association between higher mean scores and Hausa ethnicity may be due to the fact that the study was conducted in a place where Hausa is the main local language, making access to information on HIV, especially through mass media, easy for the Hausa ethnic group. The significantly positive association between higher mean scores, and senior secondary and higher levels of education, may be a result of higher literacy level among this group of respondents, which increases their chances of accessing information on HIV/AIDS. Higher mean scores among respondents from urban settings may be a result of access to more information and communication media in urban areas.

## CONCLUSION

This study reveals a fairly good knowledge of the common facts, and a relatively poor knowledge of some common lies (fictions) about the transmission and prevention of HIV infection among PLWHA attending adult ART-clinic at FMC, Birnin Kebbi, North-western Nigeria. There is therefore need to improve knowledge on some common lies (fictions) about HIV transmission, prevention, and treatment among this group of patients..

**Limitations of the study:** The study was conducted among just 64 participants selected by convenient sampling techniques using interviewer-administered questionnaires in only one tertiary health centre in north-west Nigeria. All these factors are capable of affecting the strength of the findings and should be taken into consideration in generalizing the results.

**Recommendations:** We recommend adequate health education of HIV-infected patients, especially by healthcare workers, when attending

to these patients. Questions should be asked on transmission, prevention, and treatment of HIV infection each time we come in encounter with these patients in order to clarify issues.

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**Table1: Socio-demographic characteristics of the respondents. N=64**

<b>Variable</b>	<b>Frequency (%)</b>
<b>Age group (years)</b>	
<20	1(1.6)
20-29	10(15.6)
30-39	25(39.1)
40-49	19(29.7)
50-59	8(12.5)
60&above	1(1.6)
<b>Gender</b>	
Female	39(60.9)
Male	25(39.1)
<b>Religion</b>	
Islam	58(90.6)
Christianity	5(7.8)
Traditional	1(1.6)
<b>Ethnicity</b>	
Hausa	51(79.6)
Fulani	2(3.1)
Zuru	2(3.1)
Igbo	2(3.1)
Others (minorities)	7(10.9)
<b>Level of education</b>	
None	1 (1.6)
Arabic (basic) only	20(31.2)
Primary level	6(9.4)
Junior secondary school level	4(6.3)
Senior secondary school level	20(31.2)
Tertiary level	13(20.3)
<b>Nationality</b>	
Nigerian	64(100)
Non-Nigerian	0(0)
<b>Marital status</b>	
Single	11(17.2)
Currently married	40(62.5)
Separated/divorced	4(6.2)
Widow/widower	9(14.1)
<b>Occupation</b>	
Trading	26(34.4)
Civil service	12(18.8)
House-wife	12(18.8)
Farming	5(7.8)
Artisan	5(7.8)
Professional	1(1.6)
Schooling	1(1.6)
Unemployed	6(9.4)
<b>Social Background</b>	
Rural	29(49.5)
Urban	35(56.7)

N= Total number of respondent. %= percentage of the variable.

CI= confidence interval

**Table2: Sources of information. N=54**

Source	Frequency (%)
Radio	20(37.0%)
Television	12 (22.2%)
Family and friend	15(27.8%)
Healthcare personnel	1(1.9%)
Other sources	1(1.9%)
Multiple sources	5(9.2%)

N= total number of respondents.

**Table3: Knowledge of respondent on modes of transmission of HIV infection. N=64**

Question	Yes (%)	No (%)	Don't know/ can't remember
HIV can be transmitted by:			
Unprotected sexual intercourse	64(100.0)	0(0.0)	0(0.0)
Using contaminated needles and syringes	63(98.4)	0(0.0)	1(1.6)
Transfusion with infected blood and blood products	64(100.0)	0(0.0)	0(0.0)
From infected mother to the child during delivery	60(93.8)	2(3.1)	2(3.1)
From infected mother to the child through breast feeding	58(90.6)	3(4.7)	3(4.7)
By sharing personal items like cloths with the infected person*	32(50)	29(45.3)	3(4.7)
By kissing infected person*	18(28.1)	40(62.5)	6(9.4)
By holding/shaking hands with the infected person*	2(3.1)	59(92.2)	3(4.7)
By living together in the same house with the infected person*	3(4.7)	60(93.7)	1(1.6)
By using public toilet*	5(7.6)	53(82.8)	6(9.4)
By inhaling droplets from coughing or sneezing of the infected person*	3(4.7)	57(89.1)	4(6.2)
Through insect or mosquito bite*	16(25.0)	45(70.3)	3(4.7)
Through contaminated blade/razor	62(96.9)	2(3.1)	0(0.0)

N=total number of the respondents. %= percentage of the affected variable

\*= ways HIV is not transmitted

**Table 4: knowledge and perception of respondents on prevention and cure of HIV infection. N=64**

Question	Yes (%)	No (%)	Don't know/ can't remember (%)
<b>Transmission of HIV can be prevented</b>			
By complete abstinence from sexual intercourse	61(95.3)	3(4.7%)	0(0)
By using latex condom during sexual intercourse	54(84.4%)	8(12.5)	2(3.1)
By avoiding all physical contacts with infected person*	18(28.1)	44(68.8)	2(3.1)
By separating all personal items from the items of the infected person*	23(35.9)	39(60.9)	6(9.4)
By avoiding smoking, excessive use of alcohol , use of recreational drugs and other high risk behavior	52(81.2)	6(9.4)	6(9.4)
By use of commercially available vaccines*	26(40.6)	26(40.6)	12(18.8)
<b>Concerning the cure of HIV infection</b>			
HIV infection is curable	47(73.4)	8(12.5)	9(14.1)
HIV infection can be cured with prayers	63(98.4)	1(1.6)	0(0)
HIV infection can be cured with orthodox medicines	43(67.2)	11(17.2)	10(15.6)
HIV infection can be cured with traditional medicine (CAM)	12(18.8)	29(45.3)	23(35.9)

N=total number of the respondents. %= percentage of the affected variable;

\*= fictions about prevention of HIV transmission

**Table5: Association between the mean scores in questions on prevention and modes of transmission of HIV and socio-demographic characteristics of the respondents. N=64**

Variable	Mean Scores		Total N=64 X(%)	X <sup>2</sup>	df	p-value
	<75% of total score N <sub>1</sub> = 16 X <sub>1</sub> (%)	=75% of total score N <sub>2</sub> =48 X <sub>2</sub> (%)				
<b>Age group</b>						
<20years	0(0.0)	1(100)	1(100)			
20-29 years	4(40.0)	6(60.0)	10(100)			
30-39 years	5(20.0)	20(80.0)	25(100)			
40-49 years	6(31.6)	13(68.4)	19(100)			
50-59 years	1(12.5)	7(87.5)	8(100)			
=60 years	0(0.0)	1(100)	1(100)	3.409		*0.706
<b>Gender</b>						
Female	8(20.5)	31(79.5)	39(100)			
Male	8(32.0)	17(68.0)	25(100)	1.072	1	0.300
<b>Marital status</b>						
Currently married	10(25.0)	30(75.0)	40(100)			
Single	2(18.2)	9(81.8)	11(100)			
Separated/divorced	2(50.0)	2(50.0)	4(100)			
Widow/widower	2(22.2)	7(71.8)	9(100)	1.761		*0.684
<b>Ethnicity</b>						
Hausa	9(17.6)	42(82.4)	51(100)			
Non-Hausa	7(53.8)	6(46.2)	13(100)	7.240	1	0.013
<b>Educational status</b>						
JSS & below, none	12(38.7)	19(61.3)	31(100)			
SSS and above	4(12.1)	29(87.9)	33(100)	6.027	1	0.014
<b>Occupation</b>						
Trading	6(27.3)	16(72.7)	22(100)			
Civil service	3(25.0)	9(75.0)	12(100)			
Farming	1(20.0)	4(80.0)	5(100)			
Housewife	4(33.3)	8(66.7)	12(100)			
Artisan	1(20.0)	4(80.0)	5(100)			
Professional	0(0.0)	1(100.)	1(100)			
Schooling	0(0.0)	1(100)	1(100)			
Unemployed	1(16.7)	5(83.3)	6(100)	1.927		*0.995
<b>Religion</b>						
Christianity	2(40.0)	3(60.0)	5(100)			
Islam	14(24.1)	44(75.9)	58(100)			
Others	0(0.0)	1(100)	1(100)	1.305		*0.695
<b>Social background</b>						
Rural	11(37.9)	18(62.1)	29(100)			
Urban	5(14.3)	30(85.7)	35(100)	4.729	1	0.030

N=total of respondents; N<sub>1</sub>=total number of respondents with mean score <75% of the total score; N<sub>2</sub>=total number of respondents with mean score =75% of the total; X<sub>1</sub>=number of respondents with mean score <75% of total score affected by the variable; X<sub>2</sub>=number of respondents with mean score =75% of total score affected by the variable; X<sup>2</sup>=Chi square value/Fisher's Exact Test value; df=degree of freedom. \* Fisher's Exact Test was used.