

Knowledge Attitude and Practices of Commercial Drivers towards HIV/AIDS and Prevention in OSE Local Government area ONDO State Nigeria

Article by Ebenezer Obi Daniel
MPH, BMR(Physiotherapy), Texila American University, Nigeria
Email: dannypressy@texilaconnect.com

Abstract

This descriptive survey study, which was carried out in Ose local government area of Ondo State, investigated the knowledge, attitude and practices of road transport workers towards the prevention of HIV/AIDS in Ose, Ondo state, Nigeria. A structured questionnaire was used as instrument. Summated scores was used to access respondents' knowledge about HIV/AIDS, attitude towards HIV/AIDS prevention, practices towards HIV/AIDS prevention and knowledge about HIV/AIDS protective measures. Data analysis was done with SPSS version 17. Descriptive statistics of frequencies, tables, pie and bar charts were used to present the results. Chi square was used to determine the significant association between various socio-demographic characteristics and knowledge of HIV/AIDS, practice towards prevention of HIV/AIDS and knowledge of HIV/AIDS protective measures among commercial drivers.

The results of the 150 participants study revealed that many of the commercial drivers are above 30 years old (52.4%). A considerable percentage of respondents have girlfriends (27.9%), engage in extramarital sex (54.1%), and visit sex workers more than twice per week (21.4%). This study equally revealed that considerable high percentage (40%) of the respondents have poor knowledge about HIV/AIDS, while the level of education, ethnic group and number of visits to sex workers have statistically significant association with their knowledge about HIV/AIDS. It was also revealed that 100% of commercial drivers have varying degrees of poor attitude towards HIV/AIDS prevention, coupled with 93% of varying degrees of poor practice of HIV/AIDS prevention and 77% of their varying degrees of poor knowledge of HIV/AIDS protective measures. Marital status, levels of education, ethnic group and extramarital sex were found to be significantly associated with the practice of commercial drivers towards HIV/AIDS prevention. Finally, this study also discovered that level of education and occasional extramarital sex has statistically significant association with the knowledge of commercial drivers about HIV/AIDS protective measures in Ose metropolis. Helpful recommendations on how to improve the situation were made and suggestions for further research were also given.

1.0 Introduction

The acquired immunodeficiency syndrome (AIDS) is a disease that is caused by infection from the retrovirus human immunodeficiency virus (HIV). This virus attacks and destroys white blood cells that are essential to the body's immune system. HIV/AIDS are one of the most encompassing and highly recognized infectious diseases in the world today. It contributes significantly to the overall deaths in our country and it causes economic hardship.

In the world, 3 million people died of AIDS related diseases in 2005 and more than forty million people are living with HIV. Each day 14,000 people half of them aged 15 to 24 are infected. UNFPA 2012 Sub-Saharan Africa continues to record the greatest number of HIV infection and death (Uwalaka& Matsuo 2002). Statistics indicated that 23.5 million people are living with HIV (Avert 2011) out of these, Nigeria accounts for about 3,400,000 people living with HIV while adult prevalence rate is 3.4 percentage. Aids related deaths are 210,000 (Avert 2011).

In Nigeria, HIV/AIDS epidemic remains a public health problem that must be given priority attention. The country has the second highest number of people living with HIV after

South Africa. In 1991 the prevalence rate was 1.8% and reached its peak in the year 2001 at 5.8% and declined merely by 2.4% within ten years. About 388, 864 Nigerians were infected with the HIV disease in 2011 alone (NACA fact sheet 2011). The national survey conducted by the federal government for the 2012 National HIV/AIDs and reproductive Health Survey Plus (NARHS Plus) estimated Nigeria's HIV/AIDs prevalence rate at 3.4 percent. Also current statistics from the National HIV sero prevalence sentinel survey reports showed that for HIV/AIDs prevalence rate at 3.4 percent. Also current statistics from the National HIV sero prevalence sentinel survey reports showed that for the twenty five year period from 1986 when AIDs was first reported in Nigeria till December 2011, 3, 459, 363 people now live with HIV and on estimate of 1,449,166 require anti-retroviral. About 388,864 new infections occurred in the year 2011 while 217, 148 AIDs related deaths also occurred. (businessdayonline.com 2012)HIV/AIDs epidemic in Nigeria poses a big challenge to health and development; its impact will erode the developmental goals of the country and destabilize the vision of the nation. Currently, about 3.4 million Nigerians are living with HIV/AIDs, the second largest globally (NACA 2014). HIV transmission occurs through unprotected sexual intercourse with an infected person, transfusion of contaminated blood or blood products, from infected mother to the unborn child and of sharing of unsterilized injection equipment that they previously been used by someone who is infected. About 80% of new HIV infections in Nigeria are transmitted through heterosexual activities, 10% through transfusion on infected blood while 10% of HIV infection is transmitted through mother to child transmission and other HIV-risk behaviours such as circumcision and incision of tribal marks (AVERT 2009).

Transport business is majorly male occupation and drivers are at risk and vulnerable to HIV infections. They spend large amounts of their time away from their wives because of long distance travelling and in order to satisfy their sexual needs, they visit commercial sex workers without using any preventive measure such as condoms. This increases the chances of road transport workers to contract HIV and they transmit the infection to their partners. Untreated HIV eventually leads to AIDs.

1.1 Justification of the Study

Theories from health psychology, social and behavioral science, and psychology have been proposed to explain the link between knowledge, attitude, skills, social and environmental influence and health behaviors. Health Belief Model (HBM) is a typical example among many. Few studies have been done to access the knowledge and attitude of commercial auto-drivers towards the prevention of HIV/AIDs in Nigeria and no record of such study has been found to have been done in Ose Local government of Ondo State. This was the motivation behind this study.

1.2 Statement of the Problem

According to Technical report of 2010 National HIV sero-prevalence sentinel survey of Federal Ministry of Health which acknowledge that AIDs cases are becoming very visible in Nigeria, and about one out of every 4 persons in Nigeria have seen someone with HIV or known someone who died of AIDs. In additions awareness of HIV/AIDs was generally very high, (93.0%). The use of condom was low (about 16%) despite the fact that sexual transmission is the predominant mode of HIV spread in Nigeria (IBRD/Worldbank, 2000) Many transport workers work on long distance route and spend much time away from home and this expose them to extra marital affairs with girlfriends and sex worker and most of them lack knowledge on how to protect themselves by using condom persistently and correctly

Transport workers are badly affected by the epidemic due to their sexual activities and lack of preventive measure such as not using condoms, leading to transmission of HIV disease to their wives, and consequently the women may come down with AIDs and their children usually affected too. Young people and women are the most vulnerable because women are often powerless to insist on safe sex and easily become infected by HIV positive partners. The

magnitude of the epidemic result not only in loss of human life, but enormous financial burden to the health care system and loss of productivity to the country. Hence this study was necessary in order to explore the knowledge, attitude, and practices of road transport workers towards the prevention of HIV/AIDS in Ose, Ondo state.

AIM- To determine the knowledge, attitude and practices of commercial drivers towards HIV/AIDS and prevention in Ose local government are of Ondo State, Nigeria.

1.3 Research questions

This capstone project intends to answer the following questions;

1. What is the knowledge of road transport workers about HIV and its prevention in Ose local government, Ondo State Nigeria?
2. What is the attitude of road transport workers towards the prevention of spread of HIV/AIDS in Ose local government of Ondo State?
3. What are the factors responsible for the attitude of road transport workers in Ose local government toward the prevention of the spread of HIV/AIDS?
4. What are the sexual practices of road transport workers that expose them to HIV infection in Ose local government of Ondo State?

1.4 Significance of the study

Studies which specified that commercial auto-drivers have good or bad attitude towards cause and prevention of HIV/AIDS have not been published in well circulated academic journals. More so, in ondo state, Nigeria, not much has been done on knowledge, attitude and practices of commercial auto-drivers towards HIV/AIDS. So, the researcher is interested in the topic 'knowledge attitude and practices of commercial drivers towards the prevention of HIV/AIDS in Ose Local Government area of Ondo State Nigeria', because it will contribute to the body of public health knowledge, thereby serving as a tool in the planning of the necessary intervention to combat the spread of HIV virus through this hidden, but highly significant group of people.

1.5 Limitations of the study

1. Only the commercials drivers participated in this study even though the road transport workers are not limited to them.
2. Not all the participants in the study understood English Language and this necessitated interpretation, which might have introduced some response bias.

1.6 Delimitations of the study

1. Drivers among the road transport workers were the participants in this study.
2. The study was carried out in the semi-urban city of Ose in Ondo State Nigeria.
3. Data were collected from commercial drivers through the use of questionnaire.
4. All commercial drivers were included in the study independent of the type of vehicle they drive.

Literature Review

2.1 Introduction

Road Transport workers (especially commercial drivers) are people who engaged in the mobility of people and goods from one place to another via the road vehicle transportation. They are highly mobile transporting people and goods from one location to the other. Studies overtime has proved the fact that HIV/AIDS is common among transport workers due to the nature of their work. A study conducted by Ibe, Nwoke, Emerole, Onydeocha, and Nwaokoro, (2000) revealed that the transport sector is especially vulnerable to HIV/ AIDS due to the nature and environment of its work place and economic activities.

They stated further that long distance travelling has been implicated to be a risk factor in HIV infection, and that the drivers are mostly at risk because they leave their families

frequently to satisfy their sexual need by patronizing Commercial Sex Workers. (CSWS) and engaging in casual relationship with female hawkers in stop stations.

Peter (2002) stated that the sexual risk behaviour that lead to increased incident of HIV and STI's include unprotected sexual intercourse, premarital sex, extra-marital and commercial sex, multiple sexual partners and extra vagina sex as in homosexuals.

However, it is in respect of this nature of the road transport worker as profession that prompts the need to evaluate the knowledge attitude and practices of commercial drivers towards the prevention of HIV/AIDS particularly in Ose local government area of Ondo State, Nigeria.

2.2 Road transport workers

Road transport workers are individual in transport sector that move people and goods from one place to another. Olatunji (2013) affirmed that transport worker also serve as bridge people linking with general population. Transport workers comprise of vehicle drivers, truckers, rails coach, train crews etc.

UNAIDS (2002) on a research by the internationals transport workers federation, report on the Global/HIV/AIDS epidemic stated that transport workers are twice as likely to acquire HIV as workers in low-risk occupations". This is not far fetch from the fact that transport workers (vehicle drivers) leaves their homes to embark on long journey and their risky behaviour makes them to be vulnerable to HIV because the chances of keeping multiple sexual partners is high. Truckers and other long distance drivers do have sexual contact with market women and sex workers along the road and even in transit parks.

Road transport workers engaged in mobile duty, and it includes drivers, cleaners, conductors and checkers employed by or in a road transport service. According to international transport workers' federation (ITF 2003), mobility and long absences from home make transport workers vulnerable to HIV infection, those that are particularly affected are transport workers, seafarers and fight crew and it was further confirmed that pre-employment medical screening are been carried out for transport workers by the employers. Dismissals as a response to actual or perceived HIV status are common.

Mobile population are more vulnerable to HIV/AIDS than populations that do not move and therefore they are subject to discrimination harassment, and enjoy scant legal or social protection in the host community they have little or no access to HIV information, health services and means of AIDS prevention such as condoms or treatment of sexually transmitted infections (STI). Mobile people may acquire HIV while on move and return home with the virus. International Organization for Migration (IOM 2003)

2.3 HIV/AIDS

HIV stands for Human Immunodeficiency virus. It is a virus that attacks the body's immune system called the helper T-cells or CD4 cells. A person may be infected with HIV and not know or not feel ill for many years. When the virus harms the immune system to that point that it can no longer protect it from common illnesses, that person is said to have the disease called AIDS.

The full name of AIDS is Acquired Immune Deficiency Syndrome. As the name implies, it is a disease caused by a deficiency in the body's immune system. It is a syndrome because there are a range of different symptoms which are not always found in each case. It is acquired because AIDS is an infectious disease caused by a virus which is spread from one person to person through a variety of routes. This makes it different from immune deficiency from other causes such as treatment with anti-cancer drugs or immune system suppressing drugs given to persons receiving transplant (Hubley, 1995).

A damaged immune is not only more vulnerable to HIV, but also to the attacks of other infections. It will not always have the strength to fight off things that would not have bothered it before. As time goes by, a person who has been infected with HIV is likely to become ill more and more often until, usually several years after infection, they become ill of a number

of particularly severe illnesses. It is at this point that they are said to have AIDS – when they first become seriously ill, or when the number of immune system cells left in their body drops below a particular point.

The Immune response is ineffective in the late stages of infection; HIV/AIDS destroys increasing numbers of CD4 cells until the body's capacity to fight other viruses and bacteria gradually begins to decline. The immune system stops functioning leaving the body defenseless against other infections agents (Irwin, Millen and fallow, 2003). There is no cure for HIV and AIDS, but medicines that are antiretroviral are available, that can help to prevent other infections and to slow down the virus and help HIV positive people to stay healthy and longer. AVERT

The origin of HIV is unknown. Although some authors have postulated an African origin (Gallo, 1987, Saxinger et al 1985), there is still no conclusive evidence that HIV originated in Africa. Findings in favour of an African origin include report that described the earliest known instances of HIV infection which are as follows:

- A plasma sample taken in 1959 from an adult male living in what is now the Democratic Republics of Congo (Zhu, 1959).
- HIV found in tissue samples from an American teenager who died in St. Louis in 1969 Kolata, 1987.
- A lymph node sample taken in 1960 from adult female from Democratic Republic of Congo (Zhu 1959)
- HIV found in tissue samples from Norwegian Sailor who died around 1976 (Froland, 1988).

A 1998 analysis of the plasma sample from 1959 suggested that HIV was introduced into humans around the 1940s.

In January 2000, the results of a new study presented at the 7th conference on retroviruses and opportunistic infections, suggested that the first case of HIV 1 occurred around 1930 in West Africa. The study was carried out by Dr. Dette Korbers of the LOS Alamos National laboratory. Another retrovirus HIV was also isolated in Africa (Bygbjery, 1983). In the first decades of AIDS pandemic, cases were reportedly largely from North America, Africa, Europe, Australia and part of lantin America. The first clinical report of AIDs was in 1981 from east and West coast of United State of America, affecting mainly homosexual men. Since then, the disease has spread dramatically all over the world.

HIV is classified as a retrovirus because it contains reverse transcriptase. It is a D type of virus in the Lentivirus Family Retroviruses are ribonucleic acid (RNA) viruses. It replicates itself by making deoxyribonucleic acid (DNA) copy of their RNA because it is the DNA genes that allows virus to replicate. After the virus enters the infected cell the reverse transcriptase makes a DNA copy of the HIV RNA, which is incorporated into the host DNA genome. This pro-viral DNA remains latent until a cellular activation event initiates pro-viral DNA transcription and sequential protein formation.

The appropriate complement of viral genomic RNA processed proteins and enzymes are then assembled at the cell surface and subsequently bud from the cell as mature viral particles. HIV infection results in clinical manifestations by causing a progressing dysfunction and depletion of infected cells. Most reported cases of AIDS around the world have been attributed to HIV 1. A few cases in North America, Europe, and Asia have been associated with HIV 2 Infections. HIV – 2 is found predominantly in West Africa, while HIV – 1 is the predominant virus in Eastern, Central and southern Africa.

There are several factors that contributed to the rapid spread of HIV 1 infection in sub-Saharan. Africa. Firstly, the Urbanization of Africa with subsequent disruption of the traditional family unit led to an increase in prostitution, a known mode of transmission of HIV in Africa. Deteriorating health care in certain areas, political changes, and war were also important in the development of the current HIV epidemic in Africa. War has always been associated with the spread of sexually transmitted diseases (STDS), and in times of political instability, health care services usually suffer.

According to Daniel B. Herdy 1987 in a journal titled review of infectious disease highlighted some factors that are unique in the transmission of HIV/AIDS such as.

- Promiscuity with high prevalence of sexually transmitted disease.
- Sexual practices that have been associated with increased risk of transmission of AIDS virus such as anal intercourse
- Cultural practices such as female circumcision and infibulation.
- Practices involving the use of shared instrument such as group circumcision and ritual scarification.
- Needle stick injuries can transmit HIV.

Many researchers have raised the possibility that unsterilized or shared needles may be responsible for AIDS transmission due to fact that unqualified medical practitioners who administer over the counter parenteral antibiotics are many in Africa. Scarification which is the commonest of all the practices involving shared instrument which was found among many groups in west, Central, East Africa example are Nuba, Dinka and TivDesrosiers R.C. (1986).

Other important factors driving the epidemic especially in Nigeria are unwholesome sexual behaviours, stigma and discrimination inadequate sexual health education, and inadequate voluntary HIV testing and Counselling services. Jimoh(2003, Alao (2004) According to international organization for migration (IOM) 2013 highlighted the following factors as the factors that boost the risk of HIV infection among truck drivers; the highly mobile lifestyles and high risk sexual behaviour of many truck drivers is widely believed to have facilitated the spread of HIV infection along major road transportation routes. Duration spent away from home, poor working conditions and delay, at border crossing are the points highlighted.

2.4 Pathophysiology of HIV

The principle is all about the continuous conflicts existing between HIV replication and the immune responses of the patient, via cell-mediated and immune-mediated reactions. The burden of HIV directly and indirectly mediates CD4+ T-cell destruction. Matured CD4+ cells are destroyed without exemption of CD4+ progenitor cells in bone marrow, the thymus, and peripheral lymphoid organs; as well as CD4+ cells within the nervous system, such as microglia. This consequently led to failure of T-cell production and immune suppression will be an unavoidable result (Clatt 1999).

Many mechanisms exist for the CD4+ cell depletion by HIV infection. Direct HIV-mediated cytopathic effects include single-cell killing as well as cell fusion, or syncytium formation. The syncytium is a fusion of multiple uninfected CD4+ cells with one HIV-infected CD4+ cell via CD4–gp120 interaction. This fusion results in a multinucleated syncytium, or giant cell, which may ultimately serve as a means to produce many virions. The host's natural immune responses also play a role in CD4+ cell depletion, mainly through cytotoxic CD8+ T-cells, antibody-dependent cellular cytotoxicity, and natural killer cells. Other type of cells that can be invaded by HIV includes outside lymphoid organs to the brain, spinal cord, lung, colon, liver, and kidney usually occurs late during illness (Clatt 1999).

The changes in immune systems of children and adults are similar in nature. B-cell activation occurs in most children early in the infection, evidenced by the presence of hyper-gamma-globulinemia (>1.750 g/L) with high levels of anti-HIV-1 antibody. This shows both dysregulation of T-cell suppression of B-cell antibody synthesis as well as active CD4+ enhancement of B-lymphocyte humoral response.

Primary Infection or Acute Retroviral Syndrome

This is when HIV freshly enters the body. At this time, the infected blood carries a high viral load, which implies that there are many individual viruses in the blood. The number of copies of virus per milliliter of plasma or blood can exceed 1 million. Newly infected adults almost always experience an acute retroviral syndrome. Signs and symptoms at this stage includes include fever, myalgia (muscle pain), headache, nausea, vomiting, diarrhea, night sweats, weight loss, and rash. These signs and symptoms usually occur 2–4 weeks after

infection, and reduce after two days, and at various times have been misdiagnosed as influenza or infectious mononucleosis. An essential distinguishing symptom that is often absent is the presence of a nasal congestion or running nose (Montero and Nadler 2005)

The CD4+ count in the blood noticeably decreases, but rarely drops to less than 200 cells/ μ L. The targets of the virus at this time are the CD4+ cells in the lymph nodes and the thymus, and this exposes the HIV-infected person to opportunistic infections and impedes the production of T lymphocytes by thymus. The testing of HIV using an enzyme-linked immunosorbent assay or enzyme immunoassay may be highly sensitive or otherwise depending on the time of seroconversion.

Clinical Latency/Asymptomatic Disease (Clinical Stage 1)

It is not uncommon that patients infected with HIV usually experience a “clinically latent” period of years between HIV infection and clinical signs and symptoms of AIDS, but evidence of HIV replication and host immune system destruction exists from the point of infection. At the early phase of Clinical Stage 1, the immune system shield itself from the ravaging effect of HIV by producing antibodies. The rate of the disease progression can be determined by the viral load at any set point. This implies that higher viral load set points is directly proportional to disease progression. (CDC 1994)

The latent period may or may not be associated with signs and symptoms, though persistent lymphadenopathy is common. This phase may last 8–10 years in HIV infected adults. Usually, the CD4+ count at this stage is greater than 500 cells/ μ L in children over 5 years of age, and HIV enzyme-linked immunosorbent assay and Western blot or immunofluorescence assay will be positive.

Mild Signs and Symptoms of HIV (Clinical Stage 2)

The appearance of HIV-infected people may not be different from that of normal individual for some years, after which mild signs and symptoms gradually ensue. These include candidiasis, lymphadenopathy, molluscom contagiosum, persistent hepatosplenomegaly, popular pruritic eruptions, herpes zoster, and/or peripheral neuropathy. As viral load increases, the CD4+ count falls to between 350-499/uL (CDC 1994).

Advanced Signs and Symptoms of HIV (Clinical Stage 3)

The weakened immune systems of HIV infected patients expose them to life-threatening infections. The common infections at this stage include cryptosporidiosis, pulmonary and lymph node tuberculosis, wasting, persistent fever (longer than one month), persistent candidiasis, recurrent bacterial pneumonia, and other opportunistic infections. They may experience body wasting, or weight loss. Their viral load upsurges, and the CD4+ count crashes to less than 200-349 cells/ μ L. (CDC 1994)

Clinical Stage 4

Advanced stage of HIV is always associated with new opportunistic infections, such as *Pneumocystis jirovecii* pneumonia (formerly *Pneumocystis carinii* pneumonia), cytomegalovirus infection, toxoplasmosis, *Mycobacterium avium* complex, cryptococcal meningitis, progressive multifocal leukoencephalopathy, Kaposi sarcoma and other infections that commonly occur with a chronically depressed immune system. At this advanced stage, viral load is significantly high, and death is imminent because the CD4+ count is less than 200 cells/ μ L. (CDC 1994)

2.5 Prevention of HIV/AIDS

These are measures to guide against transmission of HIV/AIDS. There are key things that can be done to help in the prevention of HIV transmission among transport workers. First among these is promoting widespread awareness of HIV and how it can spread through media campaigns and public enlightenment at their various parks.

UNAIDS (2001) stated that HIV prevention and care programmes for truck drivers must include surrounding communities, the particular environments that grow up around transport nodes and the families and other partners of the truckers. Another essential part of prevention programmes is HIV voluntary Counselling testing (VCT). Widespread uptake of voluntary counselling and testing (VCT) within a given community, can help to normalize HIV/AIDS and to reduce AIDS related stigma. It can also help to raise the awareness of the epidemic (UNAIDS 2001). Automobile drivers should maintain regular and faithful sex partners. They should not share partners or try to engage in group sex. They should try as much as possible to avoid patronizing commercial sex workers.

Road transport workers must avoid casual sex; if they cannot do this, condom must be used. Numerous studies have shown that condoms if used consistently and correctly are highly effective at preventing HIV infection. There is no evidence that promoting condoms leads to increased sexual activity among young people. Therefore condoms should be made readily and consistently available to all those who need them.

UNAIDS (2004) stated that automobile drivers should not share injection needles or other surgical appliance. People who share equipment to inject drug stand the risk of becoming infected with HIV from other drug users. Methadone maintenance and other drug treatment programmes are effective ways to help people eliminate this risk by giving up injected drugs altogether. However, there will always be some injection drug users who are unwilling or unable to end their habit, and these people should be encouraged to minimize the risks of infections by not sharing equipment (WHO, 2005).

Road transports workers must avoid patronizing unqualified medical personnel for injection. They should request and insist that traditional medical practitioners use fresh blades or other incision instruments when any cut or scarification is to be done. Pandey (2008) stated that HIV prevention interventions has been focused on truckers in India since 1996 with funding from the department for international development (DFID) and the National AIDS control/programmes.

Long-distance truckers are the target population for HIV. HIV can be prevented and this prevention requires a team effort of the family, the community, institutions both governmental and non-governmental. A survey on mobile populations and HIV/AIDS in the Southern African region by International organization for migration (2013) stated that many efforts have been made to address HIV/AIDS among mobile workers in the transport sector specifically in road transport but such efforts have too often been limited to distributing information and did not address the underlying causes of transport workers vulnerability including their working conditions.

There are common HIV/AIDS prevention strategies currently being implemented to prevent the spread of HIV and for treating people already infected with the virus. These strategies can be used and adapted to specifically meeting the challenges posed by the epidemic in the transport sector. The main interventions available to combat HIV in transport sector are as follows:

- Behaviour communications
- Peer counseling
- STI/STD treatment
- Use of condoms
- Voluntary counseling and treatment.

2.6 Knowledge of Commercial Drivers towards the Prevention of HIV/AIDS.

Knowledge, attitude and practice regarding diseases are a general pre-requisite for the prevention of HIV/AIDS. Knowledge is very important, knowledge on mode of transmission of HIV/AIDS, how to remain free from infection and preventive methods. Olatunji (2013) stated that a well-designed sexual health education intervention will increase knowledge and bring about positive behaviour which will reduce the exposure to STI and HIV/AIDS. The gaps in knowledge about HIV transmission are very worrisome. In every country at least one

person thought HIV can be transmitted in food or drink. (International transport workers federate 2013). Low levels of knowledge will make a road transport workers to be prone to HIV/AIDS. A lot of people believe that AIDS could be cured whereas AIDS is incurable. The antiretroviral prevents early occurrence of opportunistic infections and can prolong the time between HIV infection and the onset of AIDS. Modern combination therapy is highly effective and theoretically, someone with HIV can live for a long time before it becomes AIDS. There is currently no cure for AIDS, or HIV infection. Although antiretroviral treatment can suppress HIV, the virus that causes AIDS and can delay AIDS – related illness for many years, it cannot clear the virus completely (AVERT). Olatunji (2013) stated that some vulnerable group lack common sense knowledge in HIV/STD and how to protect themselves, therefore changing attitude and practices by focused interventions is one of the key strategies in reducing the spread of HIV. Overall, awareness of HIV/AIDS among transport sector workers is high, however knowledge on transmission and prevention varies misconceptions and myths about HIV/AIDS are common and stigma remains prevalent. (World bank, 2013).

A study conducted by American Association for Science and Technology on knowledge attitude and perception of road transport workers to HIV/AIDS in South east, Nigeria (2014). A descriptive survey design was employed for the study and a total of five hundred and ninety seven respondents were drawn from four major motor parks in Imo and Abia states of Nigeria.

Data collection was done by them with the aid of questionnaires. The result of the survey revealed poor knowledge of STIs including HIV/AIDS, 206 (51.3%), while moderate knowledge of HIV/AIDS, STI and condoms had 237 (39.7%) three hundred and ninety (65.3%) of the respondents could state the difference between HIV and AIDS while 207 (34.7%) had poor and could not state the difference between HIV and AIDS. However about 284 (47.6%) of them were knowledgeable on the routes of HIV transmission and prevention while 313 (52.4%) of the respondents had poor knowledge of STI, about 290 (48.6%) have a good knowledge of STI while 307 (51.4%) did not. Most of the respondents 486 (81%) had seen condom before and could recognize it while the rest 111 (19%) had seen condom and could not recognize it. Lack of interest in the use of condom was also 198 (33.2%), inconsistent use of condom was 237 (39.7%) and 290 (48.6%) of the respondents use condom to prevent HIV, STIs and Pregnancy.

2.7 Attitude of commercial drivers towards prevention of HIV/AIDS

Attitude is a disposition or state of mind towards a thing. Various types of attitude are been shown to people living with HIV/AIDS. Some people are even afraid to touch a known HIV patient and have the belief that people with HIV are guilty of immoral behaviour. According to international transport workers federation (2013) stated that as long as people not only lack correct information but they suffer from mistaken beliefs, and the pressure of shame and taboos the fears which help create stigma will go unchallenged.

According to B N cama, G McLunu, J Naidoo, S. Majeke, P. Pillay, T. Myeza and T N debele (2013) in a study conducted in South African as cited in a journal title **Curationis** volume number 36 issues 1. The study was carried out among minibus taxi drivers in order to assess their level of knowledge, belief and attitude regarding HIV infection. An exploration descriptive design was used and 175 minibus taxi drivers participated in the study after permission from their union and from individuals. Both qualitative and quantitative method was used. Data collection was through the use of questionnaire to explore and describe sexual beliefs and practices associated with HIV infections and AIDS.

The study revealed that these groups of people are one of the high risk groups in the spread of HIV/AIDS. They lack the necessary knowledge and attitude, and they need attention in relation to control and prevent the spread of HIV/AIDS. Multiple sexual partners without condom usage are common among them. In their findings, 73.3% admitted having more than one sexual partner at a time in the past year and less than half of the mini drivers used

condom consistently. Multiple sexual partners are common among them and this will increase the likelihood of transmitting HIV and other sexually transmitted infections to their partners. Seventy six percent (76%) agreed of having sex without condom and this will expose them to HIV transmission and 22% erroneously believe that there is cure for HIV infection.

A study conducted by Chaudhary, Nagargoje, Kubde, Bhardway (2011) on Auto-rickshaw which was their main mode of public transport in Nagpur city, India. The study was from June 2006 to December 2008. A total of 296 auto-rickshaw drivers were studied regarding attitude towards persons living with HIV/AIDS, 53.04% subjects said that they would not avoid a person with HIV/AIDS, while 69.59% said they would remain friendly with persons living with HIV/AIDS and 69.93% said that people living with HIV/AIDS should be allowed to continue their work.

When the study subjects were further asked with whom they would like to discuss regarding STDs including HIV/AIDS, 200 (67.57%) subjects said that they would like to discuss it with Doctors while 65 (21.96%) subjects would like to discuss it with friends and 23 (7.77%) subjects would like to discuss it with relatives.

So, the level of attitude of auto-rickshaw drivers regarding various STDs including HIV/AIDS was not satisfactory. It is recommended to make them aware regarding transmission route, safe sex and regular condom use which can be done through health education campaigns by using mass media i.e. television, radio, newspaper or by conducting health camps.

2.8 HIV and commercial drivers

Many studies reports have shown the role of transportation drivers, particularly commercial drivers and commercial sex workers in the spread of HIV/STI. However, most of these studies focus on risk behaviors and the epidemiology of HIV/STI among truck drivers (Lacerda, Gravato, Mcfarland and Iskrant, 1997; Bwayo, Plummer, Omari and Mutere, 1994) For example, research of long-haul truckers in Florida found that high risk sexual behavior is common and that truckers are at risk for HIV infection primarily because of unprotected sexual intercourse with multiple sex partners (Stratford, Ellerbrock, Akins and Hall, 2000). Pakistani truckers have been studied and are found to be at risk due to their sexual practices and high mobility (Agha 2000; Rao, Pill, Chalam, 1999) Very few data are available on HIV/AIDS prevention programs among transportation drivers in Nigeria. Studies specific to road transport workers (especially on all commercial drivers) have not been published in well circulated academic journals.

Most of these studies focus on health and problems of HIV infections among taxi drivers. For example, several studies on taxi drivers in other countries focused primarily on their general health and driving behaviors. A typical example of such study was an investigations done in Japan which described the working conditions and daily life of taxi drivers and how their occupation effects their health status (Ueda, Steinbrook and Cooke, 1992) A few studies on taxi drivers as it relates to HIV/STI have been published, such as the Beijing study that investigated the knowledge, attitudes and beliefs (KAB) of AIDS among taxi drivers which indicated that HIV/STI education is important in reducing the number of sexual partners and promoting the use of safe sex practices like condom use (Zhang, Proenca, Maffel, Barone and Leopold, 1994). A study in Nigeria concluded that commercial taxi and bus drivers are at high risk for HIV infection and transmission and stated that interventions are urgently needed to prevent the spread of HIV among drivers and their partners (Akinola 2000). A study in the Philippines investigated the characteristics, working and social environment, and KAB of drivers and owners of vehicles in the transportation industry, in relation to HIV/AIDS/STI and found them to be at high risk for HIV/STI infections. The study recommended intensive and continuous education (Gust, Walrimuchege, Sherri, Pal, Robert Chen, and Timothy, 2012). The Lesotho Assessments for the USAID Southern Africa Regional Program on HIV/AIDS from 1999 to late 2000 conducted interviews with taxi drivers among others in risk environments of border crossings and trade towns, and found them to be an important

bridge population in the sexual networks, linking transient and residential communities (Wilson, Sibanda, Nyathi, Lamson and T. Sibanda, 1994)

None of these studies, however, focused their research on the core knowledge, attitude and practices of road transport workers towards HIV/AIDS and effect of intervention programs on HIV/AIDS prevention for commercial drivers.

2.9 Summary of literature review

In spite of the above highlighted literature information, future HIV/AIDS prevention efforts should focus on the high-risk, male population in the transportation industry, who play a major role in the transmission of HIV/AIDS. Men generally still dominate and control to a large extent, women's sexual behavior in Nigeria. The previous study by Morisky, Pena, Tiglao and Liu (2002) found that despite efforts to educate Commercial Sex Workers (CSWs) to practice safe sex and to have a greater impact, there was a great need to focus on their male clients such as taxi and tricycle drivers as well, in order to curb the escalating HIV/STI infection rates. This intervention confirms the effectiveness of similar interventions which targets clients of CSWs (Calentano, Bond, Lyles, 2000; FHI 1997; Wong, Lee, Lo and Lo K. K. 1994) and supports the Merson (2000) analysis, which found that behavioral change interventions are effective when targeted to populations at high risk, particularly CSWs and their clients.

The findings present important implications for research and program planning in designing community-based peer education intervention programs. Commercial drivers are in a unique position to help further the HIV/AIDS prevention efforts; they have the potential to change their sexual behaviors and lifestyle as well as to educate and counsel their passengers when they are given the proper health education, training, and motivation to do so.

Methodology

3.1 Area of study

Ose local government is located in North Senatorial District of Ondo State Nigeria. It is an ancient town and the indigenes are mainly Yorubas. Ose shares her boundary with Akure on the Western part. At Eastern part, it shares her boundary with Ifon, Owo Local Government at Elegbeka towards the Northern part, with Akoko at Ose River, Southern part, with Ute at Ajalomenme River. According to National Population Commission, 2006, Ose is made up of eleven wards and has population of 280,000 (Census, 2006).

3.2 Study population

The target population was all commercial drivers who engage especially in intra-state or inter-state journeys and available at the time of data collection stage of the study. The record with the Chairman, National Union of Road Transport Workers, (NURTW) Ose branch, revealed that, there are 405 commercial drivers in that category.

3.3 Sampling size determination/procedure

The minimum sample size was calculated using the **Leslie and Kish formula** for descriptive studies

$$N = P(1-P) Z^2/D^2$$

- Where N is the minimum sample size needed
- D is the level of error that can be tolerated (0.05 chance of error)
- P is the estimated prevalence rate (0.1) of good knowledge of HIV and prevention among drivers [Chaudhry M. A, Naeem, Iqbal R, Shabbir (2005)]
- Z is the standard variate corresponding to confidence level. At confidence level of 95%, Z= 1.96

$$N = 0.1(1-0.1) 1.96^2/0.05^2$$

$$N = 138$$

To allow for a non-response/attrition rate of 10% (14 respondents), the sample size was increased by 14 to make **152** respondents. According to the record of the Chairman of National Union of Road Transport Workers (NURTW) of Ose local government, there are 405 commercial drivers in the metropolis with almost equal distribution of the drivers across the loading units. The calculated sample size was consistent and realizable when compared with the target population. There are ten major loading units in the area. Hence minimum of 15 respondents was selected from each loading unit using simple random sampling.

3.4 Instrumentation

The data for this cross-sectional descriptive survey/study was obtained through the use of structured questionnaire that contains 39 questions which include questions on respondent demographics; questions on knowledge, attitude and practices was be assessed using Likert-type scales of 'Yes' 'No' and 'Don't know'.

Researchers reviewed the questionnaire for content validity. The instrument underwent pilot testing among 20 participants in the study area and suggestions regarding clarity, and appropriateness were incorporated.

3.5 Data Collection Procedure

Two research assistants were recruited and trained on how to administer the questionnaire. The questionnaire was administered by the trained research assistants in order to reduce response bias, if I was directly involved in the administration of the questionnaire. Each head of the loading unit (Motor Park) was contacted to seek consent, after which each participant's consent was also sought before the questionnaire was administered. Detail explanation on the content of the questionnaire was properly explained to each participant for clarity purpose. Verbal interpretation of the content of the questionnaire was done for participants who cannot read, write and understand English Language.

3.6 Data Analysis

Data analysis was done using the Statistical package for Social Science (SPSS) version 17. Data was presented using descriptive statistics of frequencies, percentages, pie and bar charts. However, inferential statistics of Chi-square was used to test for associations between various factors and the attitude/practices of commercial drivers towards prevention of HIV/AIDS. Statistical level of significance was set at P-value of 0.05.

Result analysis and findings

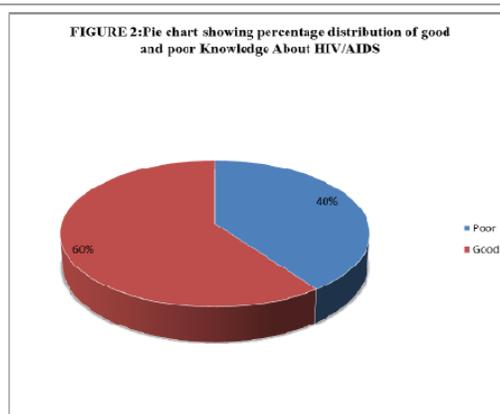
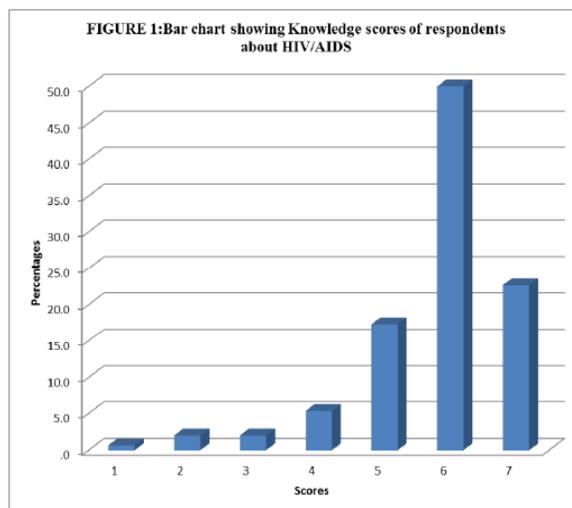
4.1. Introduction

In this study, a total of 160 questionnaires were distributed, out of which 150 questionnaires were recovered giving a response rate of 95%. The data analysis was done using SPSS version 17. Summated scores were used to arrive at each respondent's knowledge about HIV/AIDS, attitude towards HIV/AIDS prevention, knowledge of HIV/AIDS protective measures and practices towards HIV/AIDS prevention.

Each right response was scored **1** while each wrong response was scored **0**. The highest marks obtainable under knowledge about HIV/AIDS was 7, attitude towards HIV/AIDS prevention was 10, knowledge of HIV/AIDS protective measures was 5 and practices towards HIV/AIDS prevention was 6. Each respondent must score the highest mark obtainable in each section to be assigned as 'Good'. Any score below the highest obtainable mark was rated as 'Poor'.

Table 1: Socio-Demographic Characteristics of Respondents

CHARACTERISTICS	FREQUENCIES	PERCENTAGES
Age (Years)		
15 - 19 years	13	8.8
20 - 24 years	39	26.5
25 - 29 years	18	12.2
30 years and above	77	52.4
Marital Status		
Single	38	25.3
Married	91	60.7
Co-habiting	4	2.7
Separated	8	5.3
Divorced	5	3.3
Widowed	4	2.7
Level of education		
No formal Education	21	14.2
Primary	37	25.0
Secondary	35	23.6
Tertiary	55	37.2
Religion		
Christianity	112	74.7
Islam	37	24.7
Others	1	0.7
Ethnic group		
Yoruba	93	62.0
Igbo	40	26.7
Hausa	9	6.0
Others	8	5.3
Age at first sexual intercourse		
15 - 19 years	77	52.4
20 - 24 years	39	26.5
25 - 29 years	18	12.2
30 years and above	13	8.8
Years of Experience in commercial driver		
Less than 1 year	22	14.7
1 - 5 years	85	56.7
5 - 10 years	20	13.3
More than 10 years	23	15.3
Partner at first sexual encounter		
Wife	94	63.9
Girlfriend	41	27.9
Neighbor	9	6.1
Commercial Sex Worker	3	2.0
Occasional extramarital sex		
Yes	80	54.1
No	68	45.9
Number of visit to commercial sex worker per week		
Once	17	13.0
Twice	12	9.2
More than Twice	28	21.4
Never	74	56.5

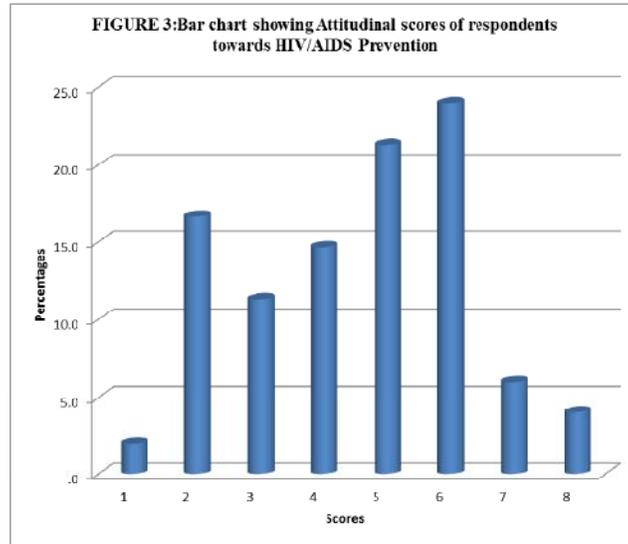


In the pie chart above, 60% of the respondents have good knowledge but 40% of them still have varying degrees poor knowledge about HIV/AIDS

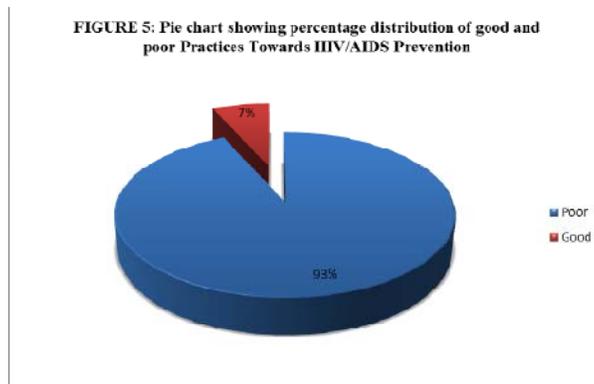
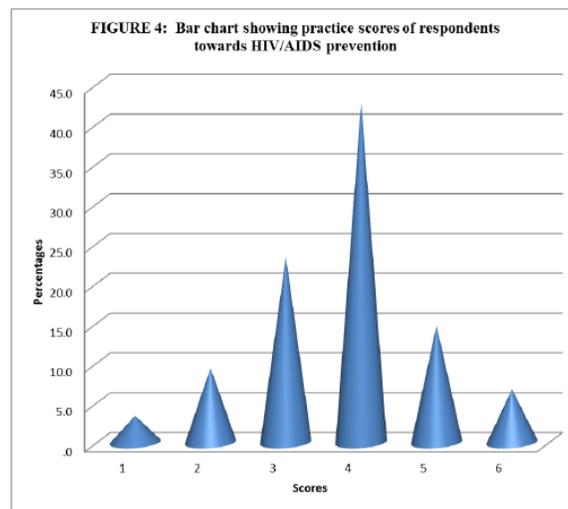
Table 2: Knowledge About HIV/AIDS

Variables	Knowledge		Chi-square χ^2	P – value
	Good (n, %)	Poor (n, %)		
Age	89(59.3)	61(40.7)	0.9865	0.079
Marital Status	92(61.3)	58(38.7)	0.094	0.759
Level of education	88(58.7)	62(41.3)	0.8279	0.041*
Religion	91(60.7)	59(39.3)	0.0673	0.714
Ethnic group	90(60)	60(30)	0.8017	0.046*
Years of Experience as a commercial driver	89(59.3)	61(40.7)	0.7253	0.064
Occasional extramarital sex	89(60)	59(30)	1.0960	0.295
Number of visit to commercial sex worker per week	82(54.7)	68(44.3)	18.511	0.000*

From the table above, There was statistically significant association between level of education, ethnic group, number of visits to sex worker per week of commercial drivers and the knowledge about HIV/AIDS (**P<0.05**)*. But there was no significant association between ages, marital status, religion, years of experience as a commercial driver, occasional extra-marital sex of commercial drivers and knowledge about HIV/AIDS ($P>0.05$)



In the bar chart above, none of the respondents scored the highest obtainable mark of 10 (assigned as 'Good'). Hence, all the commercial drivers (100%) have varying degrees of poor attitude towards HIV/AIDS prevention

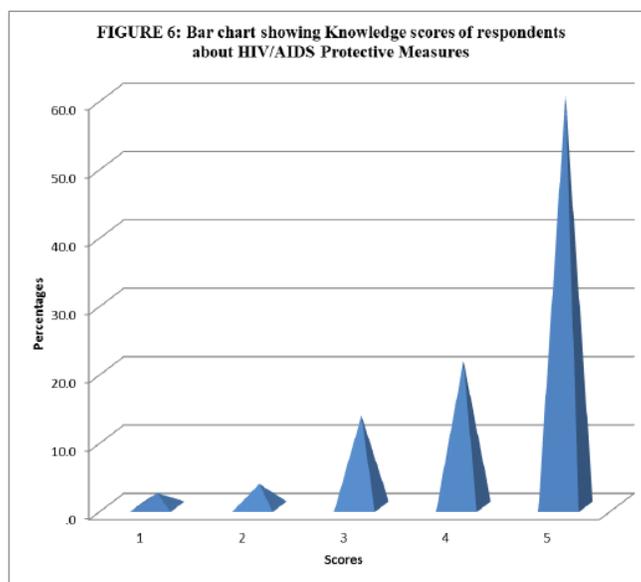


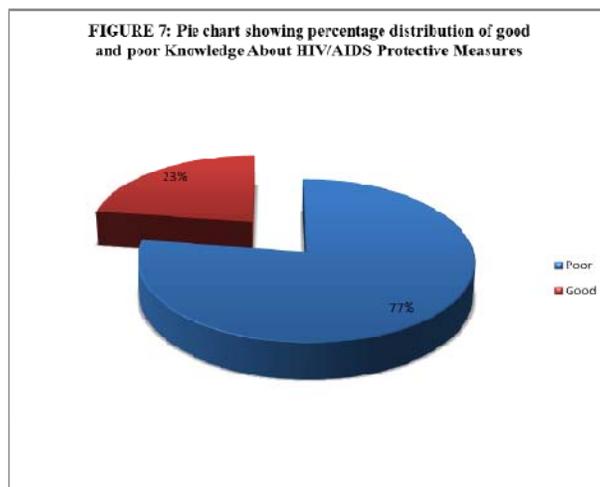
From the pie chart above, 93% of the respondents have varying degrees of poor practices while only 7% have good practices towards HIV/AIDS prevention.

Table 3: Practices Towards HIV/AIDS Prevention

Variables	Practices		Chi-square χ^2	P - value
	Good (n %)	Poor (n, %)		
Age	11 (7.3)	139 (92.7)	0.7495	0.186
Marital Status	10(6.7)	140(93.3)	0.6807	0.009*
Level of education	12(6.8)	138(93.2)	0.8628	0.035*
Religion	9(6)	141(94)	0.3732	0.155
Ethnic group	10(6.7)	140(93.3)	0.8381	0.039*
Years of Experience as a commercial driver	13(8.7)	137(91.3)	0.2276	0.517
Occasional extramarital sex	13(6.8)	137(91.3)	0.8381	0.004*
Number of visit to commercial sex worker per week	19(12.7)	131(87.3)	0.3128	0.372

Considering the table above, it can be inferred that, there was statistically significant association between marital status, level of education, ethnic group, occasional extramarital sex of commercial drivers and their practices towards HIV/AIDS prevention (**P<0.05**)*, but no statistically significant association was found between ages, religion, years of experience as a commercial driver, number of visits to commercial sex worker per week of commercial drivers and their practices towards HIV/AIDS prevention ($P>0.05$).





The pie chart above reveals that, 77% of commercial drivers have varying degrees of poor knowledge, while only 23% have good knowledge about HIV/AIDS protective measures

Table 4: Knowledge of HIV/AIDS Protective Measure

Variables	Practices		Chi-square χ^2	p - value
	Good (n, %)	Poor (n, %)		
Age	33(22)	117(78)	3.375	0.642
Marital Status	34(23)	116(77)	2.306	0.129
Level of education	32(22.7)	116(77.3)	14.088	0.003*
Religion	35(23.3)	115(76.7)	0.359	0.836
Ethnic group	30(23)	120(80)	5.926	0.115
Years of Experience in commercial driver	29(19.3)	121(80.7)	1.983	0.576
Occasional extramarital sex	36(24)	114(76)	13.523	0.000*
Number of visit to commercial sex worker per week	34(26)	97(74)	4.358	0.225

The table above shows that level of education and occasional extramarital sex have statistically significant association with the knowledge of HIV/AIDS protective measures (**P<0.05**)*

4.2 Discussion of Results

In this study, it was revealed that, out of 150 respondents who participated in this study, above average (52.4%) of the commercial drivers are aged thirty years and above. It was also revealed in this study, that 60.7% of the commercial drivers are married, which implies that many of them are bread winners in their respective homes, with a possibility of family pressures on young married drivers to be able to meet up with the marital demands.

Also, 37.2% of the respondents have tertiary education, which means that a good number of commercial drivers in Ose are learned, but may not be opportune to have access to white collar jobs, which is in tandem with the present state of high prevalence of unemployment among youths in Nigeria. Sixty two percent (62%) of the respondents were Yoruba by tribe which may be attributed to the location of the study being carried out in the western part of the country, a region dominated by Yoruba people. Early sexual relationship was also reported by this study, as more than half (52.4%) of the respondents reported their involvement in sexual actions early enough. 27.9% of the respondents have girlfriends and 54.1% claimed to be engaging in extramarital sex coupled with 21.4% of the respondents visiting sex workers more than twice per week. All these facts may predispose these

individuals to high risk of contracting HIV/AIDS when compared with the general population. This result agrees with the research findings of Mupemba (1999) which revealed a sizeable number of truck drivers in Harare, Zimbabwe who engage in extramarital affairs and gave their reason as their unbelief in restricting sexual relationship to a single woman.

Considering the knowledge of the respondents about HIV/AIDS, although 60% of them have good knowledge of HIV/AIDS, which may be as a result of occasional awareness program organized by the community health department of Federal Medical Centre, Owo, and State Specialist Hospital Ose, 40% of the respondents have varying degrees of poor knowledge about HIV/AIDS. This is analogous with the findings of Ibe et al (2014) whose result showed that 51.3% of road transport workers in the eastern part of Nigeria have poor knowledge about HIV/AIDS, but disagrees with the research findings of Mupemba (1999) which reported over 80% good knowledge of HIV/AIDS among truck drivers in Harare Zimbabwe. This may be as a result of increased level of education given by public awareness through the concentrated efforts of the government of Zimbabwe, which may comparatively be higher than that of Nigeria. This study reported a considerably high prevalence of poor knowledge of HIV/AIDS among commercial drivers in Ose metropolis, a situation that demands concerted efforts from all stakeholders in the public health sector in order to improve the situation.

It was also revealed in this study that, there was statistically significant association between levels of education, ethnic group, number of visits to sex workers per week of commercial drivers and their knowledge about HIV/AIDS ($P < 0.05$). This is in partial agreement with the result of Ibe et al (2014) which showed similar result with respect to the level of education but did not report any significant association between the knowledge of road transport workers and ethnic group or number of visits to sex workers.

The result about respondents' attitude towards HIV/AIDS Prevention revealed that, all the 150 (100%) commercial drivers in this study have varying degrees of poor attitude towards HIV/AIDS prevention. This is a serious situation that calls for quick response, because it implies that commercial drivers in Ose metropolis have wrong attitude towards HIV/AIDS prevention, and this can lead to a state of serious problem in HIV/AIDS epidemic in Ose in particular, and Nigeria in general.

Furthermore, the result of the practice of the respondents towards HIV/AIDS prevention is also of great interest as 93% of them have varying degrees of poor practices towards HIV/AIDS prevention, which implies that most of the commercial drivers do not practice the use of protective measures during extramarital sex. This result corroborates the findings of the similar research of Ibe 2014 which reported 33.3% of road transport workers in the eastern part of Nigeria who lack interest in the use of condom during extramarital sex and the findings of Donald 2008, who reported similar degree of poor practice towards HIV/AIDS among taxi drivers in Philippines. This is bound to have grave consequences on the future prevalence of HIV/AIDS among commercial drivers in Ose local government area, Ondo State and Nigeria as a whole if the present situation persists. This study also reveals a statistically significant association between marital status, level of education, ethnic group, occasional extramarital sex of commercial drivers and their practice towards HIV/AIDS prevention ($P < 0.05$). The significant association with the level of education has been reported by some studies (Ibe et al 2014, Donald 2008, Karoline 2002), but the significant association between the practice and ethnic group/extramarital sex is widely undocumented.

It was further revealed in this study that, 77% of the respondents have varying degrees of poor knowledge of HIV/AIDS protective measures and this corroborates their poor practice of HIV/AIDS prevention. The revelation of poor practice and poor knowledge of commercial drivers in Ose metropolis about HIV/AIDS protective measures in this study, implies that, commercial drivers in Ose are in dire need of well-planned orientation/education about HIV/AIDS by public health experts, failure of which the situation may get out of hand with respect to the population health in Ose local government. There was statistically significant

association between level of education, occasional extramarital sex of commercial drivers and their knowledge about HIV/AIDS protective measures ($P < 0.05$).

4.3 Summary of the findings

In this study, a considerable percentage of respondents have girlfriends (27.9%), engage in extramarital sex (54.1%), and visit sex workers more than twice per week (21.4%). Also, considerable high percentage (40%) of the respondents have poor knowledge about HIV/AIDS, while the level of education, ethnic group and number of visits to sex workers are determining factors of their knowledge about HIV/AIDS, because all were found to be significantly associated with their knowledge about HIV/AIDS.

It is highly provocative that this study revealed a bad situation of 100% varying degrees of poor attitude of commercial drivers towards HIV/AIDS prevention, coupled with 93% of varying degrees of poor practice of HIV/AIDS prevention and 77% of their varying degrees of poor knowledge of HIV/AIDS protective measures. Marital status, levels of education, ethnic group and extramarital sex were also revealed in this study as possible factors that may determine the practice of commercial drivers towards HIV/AIDS prevention due to the level of statistical significance.

Also this study discovered that, level of education and occasional extramarital sex may be responsible for the knowledge of commercial drivers in Ose about HIV/AIDS protective measures.

Conclusion and Recommendations

5.1 Introduction

This study was originally carried out to determine the knowledge, attitude and practices of road transport workers (especially commercial drivers) towards HIV/AIDS and prevention in Ose local government area of Ondo State, Nigeria. Many exhilarating results were found, most of which are of great interest to the field of public health. The present situation among commercial drivers in Ose local government of Ondo State demands urgent and decisive attention in order to salvage the situation. However, all hands must be on deck in order to win the battle against the spread of HIV/AIDS in Nigeria and the world at large.

5.2 Implication of the study

This study has discovered salient information on the prevalence of knowledge, attitude and practice of HIV/AIDS and its prevention among the commercial drivers in Ose metropolis. This will serve as an update to the already existing and documented discoveries about HIV/AIDS which serves as an indispensable tool in the hand of all stakeholders in the public health sector. For example, the 40% poor knowledge about HIV/AIDS of commercial drivers as revealed by this study is a pointer that more of public awareness about HIV/AIDS still needs to be done, because ignorance can kill, especially in the area of HIV/AIDS.

Another example is the existence of 100% poor attitude towards HIV/AIDS prevention among commercial drivers in Ose which is of great implication, because what the present situation connotes is that, all the commercial drivers in Ose metropolis have varying degrees of poor attitude towards prevention of HIV/AIDS and this can spell doom in HIV/AIDS epidemics for this population in Ose and even Nigeria in general. Furthermore, this study is of great significance because it revealed that 93% of commercial drivers have poor practice towards HIV/AIDS prevention as a consequential outcome of 77% of them who have poor knowledge about the HIV/AIDS preventive measures. This duo outcome of the study, can easily promote the spread of HIV/AIDS in Ose metropolis, Ondo state and Nigeria as a whole.

Hence, the outcome of this study can facilitate the responsive interventions by all public health stakeholders, to further prevent community spread and epidemic of HIV/AIDS in Ose local government of Ondo state, and Nigeria as a whole. If the goal of combating and reducing the spread of HIV/AIDS is to be achieved by Nigeria according to the Millennium

Development Goal 6 (MDG6), then the results of this study should be given the deserving consideration.

5.3 Recommendations

The following suggested recommendations are hereby made as a result of the outcome of this study;

1. The public awareness on HIV/AIDS should be strengthened by all concerned public health bodies among commercial drivers in Ose local government, Ondo State and Nigeria in general.
2. Policies on HIV/AIDS should be well established and implemented by the authority concerned in Ose local government, with replication of same in other local governments in Nigeria.
3. Effective and efficient education on the preventive measures among commercial drivers to combat the spread of HIV/AIDS should be well embarked upon by all health institutions in Ose metropolis, and all over Nigeria.
4. Commercial drivers in Ose should be encouraged, through proper education to imbibe the attitude of prevention of HIV/AIDS by practicing safe sex.
5. Condoms, which is a considerably safe and cost effective preventive measure should be distributed free and made available to all commercial drivers at their respective motor parks for easy access.

5.4 Suggestions for further study

The following suggestions will be of great value in the area of further research about this study

1. This research should be extended to other neighboring cities and states in the future in order to compare the results and determine which community should be given the most deserving attention.
2. Further research should include other high risk population like sex workers, drug users, Men who have Sex with Men (MSM) and Transgender populations.
3. Extensive research should be carried out to determine the best way to educate the commercial drivers on HIV/AIDS prevention due to the fact that, their compliance with the best practice of HIV/AIDS prevention could be a difficult task.
4. Further research should be carried out on Monitoring and Evaluation (M & E), in order to determine the level of impact of various interventions to combat the spread of HIV among, and through commercial drivers.
5. There is need for research to be done in the area of community participation in the fight against the spread of HIV in Ose local government and Nigeria as a whole in line with the best practice all over the world.

5.5 Conclusion

In spite of the results of this study, the following conclusions can be drawn;

1. There is a considerable poor knowledge about HIV/AIDS among commercial drivers in Ose metropolis
2. Level of education, ethnic group, and number of visits to sex workers per week are probable factors that can determine the knowledge of commercial drivers in Ose about HIV/AIDS.
3. Commercial drivers in Ose metropolis have poor attitude towards HIV/AIDS prevention
4. There is high prevalence of poor practice towards HIV/AIDS prevention among commercial drivers in Ose metropolis.
5. Marital status, level of education, ethnic group, and occasional extramarital sex may contribute to the practice of commercial drivers in Ose towards HIV/AIDS prevention

6. The existence of high prevalence of poor knowledge about HIV/AIDS preventive measures among commercial drivers in Ose metropolis is of great concern.
7. Level of education and occasional extramarital sex could determine the level of knowledge of commercial drivers in Ose about the HIV/AIDS preventive measures.

References

- [1.] Agha S. (2000): Potential for HIV Transmission among Truck Drivers in Pakistan. *AIDS* 20; 14 (15); 2404-6.
- [2.] Berlier W, Bourlet T, Lawrence P, Hamzeh H, Lambert C, Genin C, Verrier B, Dieu-Nosjean MC, Pozzetto B, Delezay O. (2005). "Selective sequestration of X4 isolates by human genital epithelial cells: Implication for virus tropism selection process during sexual transmission of HIV". *J Med Virol* 77: 465-474
- [3.] Bwayo J, Plummer F, Omari M, Mutere A, Moses S, Ndinya-Achola J, Velentgas P, Kreis J. (1994) Human immunodeficiency virus infection in long-distance truck drivers in east Africa. *Arch Intern Med* 27; 154 (12); 1391-6.
- [4.] Bygbjerg IC. (1983). AIDS in a Danish surgeon (Zaire, 1976). *Lancet*; 1:925
- [5.] Carvel J. W. Injection abscess. *Ugandan Medical Journal* 1983, 5, 16-20
- [6.] Celentano D, Bond K, Lyles C, (2000) ncv Preventive intervention to reduce sexually transmitted infections: a field trial in the Royal Army. *Arch Intern Med* 160: 535-540.
- [7.] Centre for Disease Control uptake. (1988). Serologic testing for anti-body to HIV. *MMWR*; 36:883-40
- [8.] Chan, D. Kim, P. (1998). HIV entry and its inhibition. *Cell* 93: 681-684.
- [9.] Chan, DC., Fass, D., Berger, JM., Kim, PS. (1997). Core Structure of gp41 from the HIV Envelope Glycoprotein (pdf). *Cell* 89: 263-273.
- [10.] Chaudhary S. S., Nagargoje M. M, Kubde S. S, Bhardway A. K and Singh R. (2002). Article on knowledge and attitude of autorichaw drivers about HIV/AIDS and other sexually transmitted diseases by Lumenis Agra India utter Pradesh 282002.
- [11.] Chaudhry M. A, Naeem, Iqbal R, Shabbir (2005). Level of Awareness about HIV/AIDS among truck drivers and their attitude towards persons with AIDS. *Gomal J. Medical Science*. 3: 19-23.
- [12.] Clavel F, Guetard, Brun-Vezinet F. (1986). Isolation of a new human retrovirus from West Africa patients with AIDS. *Science*; 233:343-6
- [13.] Clevestig P, Maljkovic I, Casper C, Carlenor E, Lindgren S, Naver L, Bohlin AB, Fenyo EM, Leithner T, Ehrnst A. (2005). The X4 phenotype of HIV type 1 evolves from R5 in two children of mothers, carrying X4, and is not linked to transmission. *AIDS Res Human Retroviruses* 5: 371-378
- [14.] Coakley, E., Petropoulos, C. J. and Whitcomb, J. M. (2005). Assessing chemokine Co-Receptor Usage in HIV. *Current opinion infections disease* 18: 9-15.
- [15.] Cohen, D. (2001): The HIV epidemic and sustainable human development. November 26 [19 screens] Available from: URL: <http://www.undp.org/hiv/publications/issues/english/issue29e.html>
- [16.] Deng H, Liu R, Ellmeier W, Choe S, Unutmaz D, Burkhart M, Di Marzio P, marmon S, Sutton RE, Hill CM, Davis CB, Peiper SC, Schall TJ, Litman DR, Landau NR. (1996). Identification of a Major Co-Receptor for primary Isolates of HIV-1. *Nature* 381 : 661-666.
- [17.] Desrosiers R.C. (1986). Origin of Human AIDS virus. *Letter Nature*, 319: 728.
- [18.] Federal Republic of Nigeria (2012) 'Global AIDS Response Country Progress Report, Nigeria'
- [19.] Feng Y, Broder CC, Kennedy PE, Berger EA. (1996). HIV-1 entry Cofactor: Functional Cdna Cloning of a seven-Transmembrane, G Protein-coupled Receptor. *Science* 272: 872-877.
- [20.] Froland S. S., Jenum P, Lindboe C. F., Wefring K. W., Linstad P. J and Bohmer T. (1988). HIV-1 infection in Norwegian family before 1970. *The Lancet* 1344-1345.
- [21.] Gallo R (1987). The AIDS virus. *Sci Am*; 256:46-56.
- [22.] Gawande AV, Vasudeo ND, Zodpey SP, Khandait DW (2000) Sexually transmitted infections in long distance truck drivers. *J Commun dis* 32(3); 212-5.
- [23.] Health International: 1997.
- [24.] Hubley J. (1995). The AIDS handbook. Second Edition, London. Macmillan

- [25.] Hudson, C. P. (1996). AIDS in rural Africa: a paradigm for HIV-1 prevention. *International Journal of Sexually Transmitted Diseases and AIDS* 7(4):236-43.
- [26.] Ibe Sally N. OI, Nwoke, E. AI, Emerole, C. OI, Onyeocha, F.A1, Nwawume, I.C2, Nwaokoro, Joakin Chidoziel (2014): Knowledge, attitude and perception of road transport workers to HIV/AIDS, STIs and condom use in southeast, Nigeria. *American Journal of Science and Technology* 2014; 1(2): 50-54
- [27.] Interventions in developing countries.(2000) *AIDS* 14 (suppl 2): S68-S84.
- [28.] Karen Mupemba (1999): The Zimbabwe HIV prevention program for truck drivers and commercial sex workers: a behaviour change intervention. *Resistances to Behavioural Change to Reduce HIV/AIDS Infection, 1999, 133-137*
- [29.] Karlsson A., Parsmyr K, Aperia K, Sandstrom E, Fenyo EM, Albert J. (1994). MT-2 cell tropism of human immunodeficiency virus type 1 isolates as a marker for response to treatment and development of drug resistance. *Journal of infectious disease* 170: 1367-1375.
- [30.] Koenig R.E, Gautier T, Levy J. A. (1986). Unusual introfamilial transmission of Human immunodeficiency virus. *Lancet* 2: 627.
- [31.] KOLATA, Gina (28 October 1987) Boy'
- [32.] Lacerda R, Gravato N, McFarland W, Rutherford G, Iskrant K, Stall R, Hearst N. (1997) Truck drivers in Brazil: prevalence of HIV and other sexually transmitted diseases, risk behavior and potential for spread of infection. *AIDS* 11 Suppl 1:S15-9.
- [33.] Lievefranses, Johannes VanDam and Peter Piot (1991), Health Policies for controlling AIDS and STIs in developing countries. *Health Policy and planning* 6(2) 148-156.
- [34.] Maradzika, J., S. Rusakaniko and S. Siziya. (1995): A report on the AIDS KABP baseline surveycarried out among the transport workers and the commercial sex workers in Zimbabwe. University of Zimbabwe Department of Community Medicine, Harare (unpublished report).
- [35.] Merson MH, Dayton JM, O'Reilly K. (2000): Effectiveness of HIV prevention
- [36.] Moore JP. (1997). Coreceptors: implications for HIV pathogenesis and therapy. *Science*276: 51-52.
- [37.] Morisky, DE, Ang, A, Sneed, CD (2002) Validating the Effects of Social Desirability on Self-Reported Condom Use Behavior among Commercial Sex Workers. *AIDS Education and Prevention*, 14:351-360.
- [38.] Morisky, DE, Pena, M, Tiglao, TV, Liu, KY (2002): The Impact of the Work Establishment on Condom Use among Female Bar Workers in the Philippines.*Health Education and Behavior*, 29, 461-472.
- [39.] Morisky, Donald E (2008): HIV/AIDS Prevention among The Male Population: Results of a Peer-Education Program For Taxicab and Tricycle Drivers in the Philippines. UCLA
- [40.] Muciaccia B, Padula F, Vicini E, Gandini L, Lenzi A, Stefanini M. (2005). Beta-chemokine Receptors 5 and 3 are expressed on the head region of human spermatozoon. *FASEB Journal* 19: 2048-2050.
- [41.] Mukodzani, L., K. Mupemba and J. Marck. (1999): All roads lead to Harare: the response of the Zimbabwe transport industry to HIV/AIDS. Pp. 131-138 in *The Continuing African HIV/AIDS Epidemic*, ed. I.O. Orubuloye, J. C. Caldwell and J.P.M. Ntozi. Canberra: Australian National University
- [42.] Nahmias AJ, Weiss J, Yao X, (1959). Evidence for Human infection with HTLV-III/LAV-like virus in central Africa. *Lancet*; 1:1279-80
- [43.] National Agency for the Control of AIDS (2010). National HIV/AIDS Strategic Plan 2010-15. 1-45.
- [44.] National Institute of Health. Crystal Structure of Key HIV Protein Reveals New Prevention, Treatment Targets, June 17, 1998. Retrieved on 2014-11-10
- [45.] New Era, Family Health International. An Evaluation of International Interventions Targeted to Commerical Sex Workers and Sex Clients on the Land Transportation Routes from Janapur and Birgunj to Naubise. Kathmandu: Family

- [46.] Niraula S. R., JhaN, Mishra RN and Singh S. P (2003). Awareness and risk taking behaviours regarding sexually transmitted diseases among long distance drivers in a township of Dhran. *Nepal Indian* 34: 129-138.
- [47.] Park, K. (2007). *Park's Textbook of Preventive and Social Medicine* (19th Ed.). M/s Banarsidas Bhanot Publishers. Jabalpur India. 278-296.
- [48.] Peter R.L. (2002). Reducing heterosexual transmission of HIV in poor countries, (Clinical review). *Br. Med. J*; 324:207-213.
- [49.] Podhisita, C., M. J. Wawer, A. Pramualratana, U. Kanungsukkasem and R. McNamara. (1996): Multiple sexual partners and condom use among long-distance truck drivers in Thailand. *Aids Education and Prevention* 8, 6:490-498.
- [50.] Rao KS, Pilli RD, Rao AD, Chalam PS. Sexual lifestyle of long distance lorry drivers in India: questionnaire survey. *BMJ* 16: 318(7177); 162-3, 1999.
- [51.] Saxinger WC, Levine PHY, Dean A. (1985). Evidence for exposure to HTLV-III in Uganda before 1973. *Science*; 227:1036-8
- [52.] Sibanda, A., J. Murombedzi and M. Tawanda. (1997). Sexual behaviour among transport workers: a study of National Employment Council for the Transport Operating Industry (NECTOI) drivers and assistants, and commercial sex workers. Tropang Consultancy Services (Pvt) Ltd, Harare (unpublished report).
- [53.] Society for Family Health and Action Aid International, Nigeria, (2006). Peer Education Plus: Introduction Module for Transport Workers HIV Intervention; Heinemann Educational Books Nigeria Plc, Ibadan.\
- [54.] Spradley, B.W. and Allender, J.A. (1996). *Community Health Nursing: Concepts and Practice* (4th Ed.) Lippincott Philadelphia New York. 510-516.
- [55.] Stratford D, Ellerbrock TV, Akins JK, Hall HL (2000) "Highway cowboys, old hands, and Christian truckers; risk behavior for human immunodeficiency virus infection among long-haul truckers in Florida," *Social Science and Medicine* 50(5); 737-749.
- [56.] Tang, J. and Kaslow, R. A. (2003). The Impact of Host Genetics on HIV Infection and Disease Progression in the Era of Highly Active Antiretroviral Therapy. *AIDs* 17: S51-S60.
- [57.] UNDP (2006) 'Human Development Report: Beyond scarcity- Power, poverty and the global water crises.
- [58.] UNDP (2013) 'Human Development Report 2013:The Rise of the South-Human Progress in a Diverse World'
- [59.] United Nation AIDS (2012). 'Global Report: Annexes'
- [60.] United Nations General Assembly Session (UNGAS) on HIV/AIDS (2001): DECLARATION ON COMMITMENT ON HIV/AIDS "Global Crisis- Global Action
- [61.] Wilson, D., A. Sibanda, B. Nyathi, N. Lamson and T. Sibanda. 1994. Ethnographic and quantitative research to design a community intervention among long-distance truck drivers in Zimbabwe. Pp. 99-108 in *Focusing Interventions among Vulnerable Groups for HIV Infection*:
- [62.] Wong, K.H., Lee, S.S., Lo, Y.C. & Lo, K.K. Condom use among female commercial sex workers and male clients in Hong Kong. *International Journal of STD and AIDS*, 5, 287-289, 1994.
- [63.] World Bank, (2009). *Transport against HIV/AIDS: Synthesis of Experience and Best Practice Guidelines*.
- [64.] Wyatt R, Sodroski J. (1998). The HIV-1 envelope glycoproteins: fusogens, antigens, and immunogens. *Science* 280: 1884-1888.
- [65.] Zheng, Y. H., Lovsin, N. and Peter Lin, B. M. (2005). Newly Identified host factors modulate HIV replication. *Immunol. Letter* 97: 225-234.
- [66.] Zhu T, Wang N., Carr A, Nam DS, Moor-Jankowski R, Cooper DA, Ho DD. (1996). Genetic Characterization of human immunodeficiency virus type 1 in blood and genital secretions: evidence for viral compartmentalization and selection during sexual transmission. *Journal of Virol* 70: 3098-3107.
- [67.] Zhu, Tuofu and Nahinias (1998). An African HIV-1 sequence from 1959 and implication for the origin of the Epidemic Nature: 391: 594-597.

QUESTIONNAIRE

I am a PhD student of Public Health at Texila American University. I am conducting a survey on Commercial drivers. This study is designed to determine the knowledge, attitude and practices of road transport workers (specifically commercial drivers) towards HIV/AIDS and prevention.

INFORMED CONSENT

- Your participation in this interview is completely voluntary.
- If some questions are difficult or make you uncomfortable, you can skip them. You may also decide to stop the interview at any point.
- All information that you provide for this study will be kept confidential. This questionnaire will not have your name on it. Your responses to the questions are identified only by number, and never by name.

EBENEZER OBI DANIEL

Researcher

SECTION A: SOCIODEMOGRAPHIC DATA (Please tick as appropriate)

- 1) Age 20-24 () 25-29 () 30-34 () 35-39 () 40-44 () 45 and above ()
- 2) Sex: (a) Male () (b) Female ()
- 3) Marital Status: (a) Single () (b) Married () (c) Co-habiting () (d) Separated () (e) Divorced () (f) Widowed ()
- 4) Level of education: (a) None () (b) Primary () (c) Secondary () (d) Tertiary ()
- 5) Religion: (a) Christianity () (b) Islam () (c) Others (please specify).....
- 6) Ethnic group: (a) Yoruba () (b) Igbo () (c) Hausa () (d) Others (please specify).....
- 7) How long have you worked as a commercial driver? Less than 1 year () 1-5 years () 5-10 years. More than 10 years ()
- 8) At what age did you have your first sexual intercourse? 15-19 years () 20-24 years () 25-29 years 30 years and above ()
- 9) Your partner at first sexual encounter. Wife () Girlfriend () Neighbor () Commercial sex worker () others.....
- 10) Do you engage in occasional extramarital sex? Yes () No ()
- 11) How many times do you visit commercial sex worker per week? Once () Twice () More than twice () Never ()

SECTION B

KNOWLEDGE ABOUT HIV/AIDS

S/N		YES	NO
12	HIV/AIDS can be transmitted through sexual contact		
13	HIV/AIDS can be transmitted through needle sharing		
14	HIV/AIDS can be transmitted through blood transfusion		
15	HIV/AIDS can be transmitted from mother to child		
16	Can get HIV by sharing clothes of HIV infected person		
17	Can get HIV by sharing cups and plates with HIV infected persons		
18	Can get HIV by sharing shaving instruments		

SECTION C

ATTITUDE TOWARDS HIV/AIDS AND PREVENTION

S/N		YES	NO
19	Will you avoid a person with HIV/AIDS		
20	Will you remain friendly with person living with HIV/AIDS		

21	Will you allow a known HIV/AIDS person board your vehicle		
22	HIV/AIDS is preventable		
23	There is vaccine against HIV/AIDS		
24	Can identify a person with HIV/AIDS by appearance		
25	Regular condom use necessary to prevent HIV/AIDS		
26	I can use condom if available		
27	I will always look for condom during extra-marital sex		
28	I find using condom uninteresting during sex		

SECTION D

KNOWLEDGE OF HIV/AIDS PROTECTIVE MEASURE

S/N	The following can prevent HIV/AIDS	YES	NO	DON'T KNOW
29	Condom			
30	Oral Pills			
31	Injectable contraceptives			
32	Foaming tablets			
33	HIV/AIDS cannot be prevented			

SECTION E

PRACTICES TOWARDS HIV/AIDS PREVENTION

S/N		YES	NO	DON'T KNOW
34	I practice total abstinence			
35	I confirm my partner is not HIV/AIDS infected			
36	I use condom regularly			
37	I don't use condom but my sexual partner does			
38	I don't think I am at risk so, I don't use condom			
39	Condom is not easily accessible to me			