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Sexual History, Behaviour and Practice of HIV/AIDS Prevention among Recruits of Depot Nigeria Army, Zaria-Nigeria

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Abstract **Background**: Among Nigerian Military Personnel (NMP), HIV prevalence has been reported to be higher than in the general population due to several factors. Data on HIV among the military are difficult to obtain and comprehensive program for the military in Sub-Saharan Africa were not well coordinated. This study assessed sexual history, behavior and practice of HIV/AIDS prevention among military recruits at Depot Nigeria Army in Zaria Nigeria. **Materials and Methods**: It was a cross sectional descriptive study carried out on February, 2011 with a sample of 300 army recruits selected by a stratified random sampling technique. Information on socio-demographic characteristics, sexual history, behavior and practice of HIV/AIDS prevention were collected using structured, self–administered questionnaire, and blood samples collected were screened using Determine® and and Uni-gold® test kits for HIV antibodies. Stat pak® test kit was used as a tie-breaker. The data collected were cleaned and entered into SPSS version 15.0 and results presented in tables and statistical significance was set at $p < 0.05$. **Results**: The age range of the respondents was 17 – 29 years, with mean age of 29 ±1.9 years and male: female ratio of 2.8:1. Majority (93.0%) were single with mean age at sexual debut of 15 years and 40.0% had coitus a month prior to the time of the study. About 21.0% satisfied their sexual urge by having sex with their partners. Two-thirds had used male condom before out of which 29.7% had problems such as reduced sexual urge (16.7%), burst condom (11.3%) among others. The results of the HIV screening for all the respondents were negative for both HIV-1 and HIV-2. **Conclusion:** The sexual history, behavior and HIV/AIDS prevention among the military recruits showed mixed picture and the HIV screening results were negative for HIV 1 and HIV 2. There is need to have a well-coordinated HIV/AIDS prevention program that is multi-disciplinary and innovative among others to ensure the recruits remain negative for HIV.

Keywords: *sexual history, behavior, practice, HIV prevention, Army recruits, Zaria, Nigeria*

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1. Introduction

Sub-Saharan Africa (SSA) has just over 10% of the world's population but is home to nearly two thirds of the world's HIV/AIDS cases. An estimated 3.2 million people in Africa became newly infected with HIV in 2005, while 2.4 million adults and children died of AIDS [1]. Sub-Saharan Africa is the epicenter of the HIV/AIDS pandemic and faces an unprecedented devastation [1,2]. Africa is home to 95% of all mother-to-child transmissions of HIV and claims approximately 15 million orphans [1,3]. The spread of HIV/AIDS has reversed all progress in health, education, life expectancy, and standards of living that Africa has made since the 1950s. [4] Nigeria is the second most affected country in SSA with HIV, representing 14% of HIV/AIDS cases in this region [5].

Among Nigerian military personnel (NMP), HIV prevalence has been reported to be higher than in the general population, due to mobile lifestyle and distance from their spouses while on United Nations peace-keeping mission. This is also due to the fact that danger and risk taking are integral parts of their profession. They tend to be young, single, and sexually active and are highly mobile and stay away from their families and home communities for extended periods. NMP are easily influenced by peer pressure rather than social convention and are inclined to feel invincible and take risks. They may have more ready cash than other males where they are deployed and hence are surrounded by opportunities for casual and commercial sex [6]. Data on HIV prevalence among the military are difficult to obtain, as

governments are often unwilling to disclose high rates, for fear of seeming vulnerable to enemies and coups. For similar reasons, comprehensive HIV testing programs for military personnel in SSA are rare [7,8,9].

Peacekeeping has become an important role for military forces the world over. National armies are increasingly requested to contribute troops and support staff to war zones and post-conflict milieu. During the past two decades, Nigerian troops have been involved in peacekeeping operations in many countries, including Democratic Republic of Congo, Côte d'Ivoire, Liberia, Somalia, Eritrea, former Yugoslavia, Sierra Leone, and Sudan among others. The United Nations Department of Peace Keeping Operations (DPKO) recommends that military personnel infected with HIV or other Sexually Transmitted Infections (STIs) are not to be deployed for peacekeeping operations, and that all countries contributing peacekeepers provide their troops with standardized guidelines and training on prevention and control of HIV and other STIs [10]. Once deployed, otherwise healthy HIV-positive UN peacekeepers are not repatriated on account of their HIV status. Those with AIDS symptoms, however, are sent home. Although women are often in the minority in military and police forces, more and more women are enlisting in the uniformed services. In Nigeria, for instance, females constitute about 6 – 10% of the military. These women are exposed to the same and sometimes even greater pressure as men to enter into casual sexual relationships [7,9,11,12].

HIV prevalence figures are unavailable in the public domain for Nigeria's 150,000-strong armed forces, since force-wide HIV testing has not been conducted. Nigeria is Africa's largest contributor of troops including military observers and civilian police to UN peacekeeping missions.

Studies showed that many naval personnel participate in high-risk sexual behavior which may increase their risk of acquiring and spreading HIV [13]. Group discussants and key informants believed that sex with multiple partners is a tradition that has persisted in the navy even in the era of AIDS because of the belief that AIDS affects only foreigners, that use of traditional medicine provides protection against HIV infection, and influence of alcohol. This study assessed sexual history, behavior and HIV/AIDS prevention among Military Recruits at Depot Nigeria Army in Zaria, Nigeria.

2. Materials and Methods

2.1. Study Area

Depot Nigerian Army (Depot NA) was established in 1924 and it is presently located in Chindit Cantonment which is in SabonGari Local Government Area in Zaria,, Kaduna State and it is a military training institution with an approximate permanent staff population of about 700 and it trains army recruits on a yearly basis..

Zaria lies approximately between longitude 5 °50' and 8 °30' E. and latitude 9 °20' and 11 °30' N at an elevation of 2150 ft. It has an area of 22,000 square meters and an estimated population of about 250,000. It consists of open rolling plains and is watered by the Kaduna affluent of the Niger River and its many tributaries and temperatures in Zaria range from 15.3 to 36.25 ℃, and rainfall varies from 0.0 to 816.0 mm/month [14,15].

2.2. Study Design

It was a cross-sectional descriptive study.

2.3. Study Population

The study populations were new recruits undergoing training at Depot NA, Zaria, Kaduna State, Nigeria. The entire recruit intake had a population of 2,000 recruits. The sample included recruits aged 17 - 29 years, recruits of both sexes, married and unmarried and of different religious background. Recruits from six training companies were included in the study as their companies namely bravo, charlie, delta, echo, golf and hotel, were selected by simple random sampling by balloting without replacement. While those in alpha and foxtrot training companies were not included as their companies were not selected during the above mentioned sampling scheme.

2.4. Sample Size Determination

The minimum sample size for the study was estimated using Cochran's sample size formula: $n= z^2pq/d^2$ Where n= minimum sample size, N = study population, z= standard normal deviate at 95% confidence level = 1.96, p= prevalence from previous study, q= 1 – p, d= precision of accuracy set at 0.05.

Since the study population was < 10, 000, then, $n_f= n/1+(n/N)$.

According to the UNAIDS/WHO/UNICEF 2008 epidemiological fact sheets update, the prevalence of HIV/AIDS amongst adults aged 15 to 49 was 3.1% in Nigeria [14].

Using the above formula: p= 3.1% = 0.031, q= 1 –p = 1 – 0.031= 0.969, z= 1.96, d= precision = 0.05 level of significance. Hence:$n = 1.96^2 \times 0.031 \times 0.969/0.05^2$ and n= 46

$n_f= 46 \div 1 + (46/2000) = 44.96 \sim 45$

Adjusting for non-response:

ns= n x expected non-response rate

where the expected non-response rate = 10%

then, ns= 45 x 10/100 = 4.5 ~ 5

therefore, n= 45+5 = 50

However, 300 recruits participated in the study.

2.5. Sampling Technique for Recruitment of Study Population

The following sampling schemes were used to select 300 recruits aged 17 to 29 years for the study from the population of 2000 recruits:

1. There were eight training companies in Depot NA namely alpha, bravo, charlie, delta, echo, foxtrot, golf and hotel, each having a total number of 250 recruits. Using a simple random sampling by balloting without replacement six training companies were selected. These companies were bravo, charlie, delta, echo, golf and hotel. The six companies formed the six strata for the next sampling scheme.

2. All the recruits in the six selected companies were listed to form a sampling frame.

3. Using a table of random numbers, fifty recruits were randomly selected from each of the six companies (strata) giving a sample size of 300.

2.6. Data Collection Tool

A close-ended, structured, self-administered, and pre-coded questionnaire was used. The questionnaire comprised of three sections namely Section A was on socio-demographic data, section B on sexual history and behaviour, while section C was on practice of HIV/AIDS prevention.

Pretesting of questionnaire was done with 30 recruits from the two companies that were not selected for the study namely alpha and foxtrot companies with the aim of ascertaining their level of understanding of the questionnaire. Necessary explanations were given on how to complete the questionnaires.

2.7. Collection of Blood Samples

Three millilitres of blood was drawn from each applicant by venipuncture; subsequently the serum was separated from the each blood sample and stored frozen (-20 ℃) until tested for presence of antibodies against HIV.

2.8. Screening of Blood Samples

The specimens were tested for HIV 1 and 2 antibodies using the approved serial algorithm by the Nigerian Federal Ministry of Health. The algorithm consists of 3 rapid diagnostic kits namely Determine®, Uni-gold® and Stat-pak®. Stat-pak® was used as a tie-breaker. Using the serial testing algorithm, specimens negative on Determine® are considered negative, while specimens positive on Determine® are further tested with Uni-gold®. If they are positive with Uni-gold®, they are considered positive. If they are negative with Uni-gold® (discordance), they are further tested with Stat-pak® which is a tie-breaker. Specimens that give positive reaction with Stat-pak® are considered positive, while those with negative reaction are considered negative. Results were delivered within 30 minutes of the test. All the reagents were used according to the manufacturer's instructions. The principal investigator used an average of 5 minutes each to give pre-test and post-test counseling to each candidate with an opt-out option.

2.9. Data Analysis

The retrieved questionnaires were sorted out and analyzed using the statistical package for social sciences (SPSS) software version 15.0. Statistical calculations using chi-square, mean, median, standard deviation and percentages were done. P-value of 0.05 was used to denote statistical significance.

2.10. Ethical Considerations

Permission was obtained from the Commandant of Depot NA, Zaria and also all the participants voluntarily gave informed consent to take part in the study. Strict precautions were taken to ensure confidentiality throughout the period of the study. They were assured that all instruments used (i.e. questionnaires and database entries) would be coded and will not bear their names. They were also educated on the research and told that anyone that is not interested can opt out at any stage of the research without any negative consequences. A few direct risks to participants included embarrassment from the sensitive nature of the questions.

3. Results

3.1. Socio-demographic Characteristics of the Respondents

There were 79 females and 221 males, giving a male/female ratio of 2.8:1. The respondents' ages ranged from 17 to 29 years. The mean age was 21.8 ± 1.9 years. Most of the respondents (80.3%) were between 20 to 24 years of age. Majority of the respondents, 279 (93.0%) were single, while 215 (71.7%) were Christians and 84 (28.0%) were Muslims while only one (0.3%) respondent practices traditional religion. Majority of the respondents 160 (53.3%) were secondary school graduates, 85 (28.3%) attended tertiary institutions, while 16 (5.3%) had no formal education. (Table 1).

Table 1. Socio-Demographic Characteristics of Respondents

Variable	Frequency	Percent
Age (in years)		
17 - 19	26	8.7
20 – 24	241	80.3
25 - 29	33	11.0
Total	300	100.0
Level of education		
No formal education	16	5.3
primary	39	13.0
Secondary	160	26.3
tertiary	85	28.5
Total	300	100.0
Marital Status		
Single	279	93.0
Married	17	5.6
Divorced	2	0.7
Widowed	2	0.7
Total	300	100.0
Religion		
Christianity	215	71.7
Islam	84	28.0
Traditional religion	1	0.3
Total	300	100.0

Male: female ratio-2.8:1, age range- 17- 29 years, mean age- 21.8 ±1.9 years

Table 2. Respondents sexual history(n=300)

Variable	Frequency	Percentage
Age at sexual debut (in years)		
10-14	16	5.3
15-19	130	43.3
20-24	65	21.7
25 and above	6	2.0
No response	83	27.6
Frequency of sex		
Monthly	101	33.7
Weekly	45	15.0
Daily	16	5.3
Every alternate day	10	3.3
Others	45	15.0
No response	83	27.6
Last coitus		
Year ago	77	25.7
Months ago	120	40.0
Weeks ago	7	2.3
Days ago	6	2.0
Today	7	2.3
No response	83	27.6

Mean age at sexual debut= 15 years

Majority (43.3%) of the respondents had their sexual debut at age range of 15-19 years (with mean of 15 years), 33.7% had sex monthly and 40.0% had coitus a month prior to this study (Table 2).

Table 3. Respondents sexual behaviour (n = 300)

Variable	Frequency	Percentage
Means of satisfying sexual urge		
Sex with spouse/partner	62	20.7
Praying	57	19.0
Masturbation	54	18.0
Drinking water	24	8.0
Drinking alcohol	21	7.0
Paying for sex	8	2.7
None of the above	65	21.7
No response	9	3.0
Forms of sex practised		
Heterosexual intercourse	167	55.7
Sex with children	15	5.0
Anal sex	13	4.3
Oral sex	13	4.3
Mixtures of above	57	19.0
Never had sex	13	4.3
No response	22	7.3
Number(s) of sexual partner(s)		
One	143	47.7
Two	27	9.0
Three	15	5.0
Four	6	2.0
Five	13	4.3
More than five	13	4.3
No response	83	27.3

About 1/5 of the respondents satisfied their sexual urge by having sex with their spouse/partners, 55.7% practise heterosexual intercourse and 47.7% had only one sexual partner (Table 3).

Table 4. Practice of prevention (n = 300)

Variable	Frequency	Percentage
Those that have used male condom		
Yes	208	69.3
No	84	28.0
No response	8	2.7
Those that have had problems using male condom		
Yes	89	29.7
No	201	67.0
No response	10	3.3

Majority of the respondents (69.3%) have used male condom and 29.7% had problems using it (Table 4).

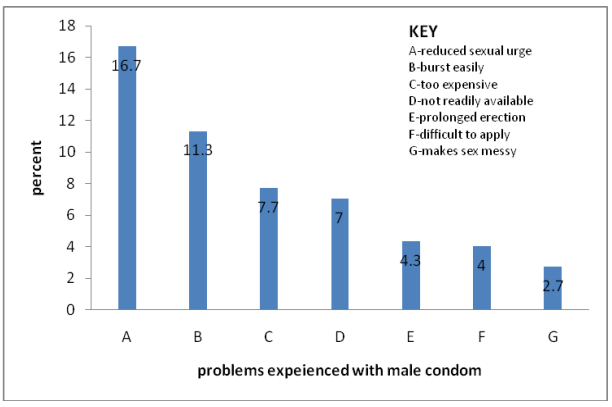

Figure 1. problems experienced with condom use (n= 89)

The result of the HIV testing was negative for HIV1 and HIV 2 for all the 300 recruits.

4. Discussion

Majority of the respondents were within the productive age group of 20- 29 years which could be as a result of the age requirement set for recruitment into the military service in Nigeria. Their educational status ranged from no formal education to tertiary education. The significant percentage that had tertiary education could be as a result of high level of unemployment in the country. More than 90% of the respondents were single and belonged to the 2 major religions in the country (Christianity and Islam) (Table 1).

A significant percentage had their sexual debut between the ages of 15- 19 years which is similar to the study in China with a value of 19.4 years. [16] The respondents' predominant monthly coital frequency and the last coitus of about a month prior to this study could be as a result of their very tight training schedule (Table 2).

About one-fifth of the respondents satisfied their sexual urge by having sex with their spouses/partners while few of them (2.7%) paid for sexual services. Heterosexual intercourse was the predominant type (55.7%) (Table 3) and majority of them (47.7%) had only one sexual partner, while about 4.3% of them had more than five sexual partners (Table 3). These could be attributable to the fact that they are mainly young people with lots of youthful exuberances. Consequently, more work need to be done with respect to HIV/AIDS health education to encourage them to abstain from sex, be faithful to a single partner who in turn has no other partner or employ consistent, correct and regular use of condoms.

Majority (69.3%) of the respondents have used male condom and approximately 30% of them had experienced various problems using the male condom(Table 4 and Figure 1). It could be due to the fact that in the barracks condoms are readily available, affordable and at times distributed free of charge. The result is an improvement over that obtained from other studies in the Nigeria Air force where only 30.0% of the respondents reported that they would use condom, 70.0% felt that it would be embarrassing to buy condoms, while 77.0% would be ashamed communicating condom use with a partner [7,15]. It is equally better than the 35.0% in a study among Chinese university students [16]. This is probably due to reasons earlier stated. However, better targeted, result-oriented and quality-based educational campaigns will help improve on these. The HIV sero-statuses of the respondents were equally determined. Serum samples were taken from the 300 of them and screened using determine®, uni-gold® and stat pak® test kits. However, all the samples were HIV non-reactive. This could be due to the fact that the respondents must have undergone HIV screening on their own before enlisting in the army as it is a prerequisite for getting enlisted. More so, additional HIV screenings would have been done at state and zonal levels during their recruitment exercises and those found to be reactive were probably disqualified. The fact that they were non-reactive many months into their training equally means that none of them was in the window period prior to recruitment and furthermore, it is an attestation to the efficiency of the screening process.

5. Conclusion

The sexual history, behavior and HIV/AIDS prevention among the military recruits showed a mixed picture. Their

HIV sero-status were all negative. There is need to have a well-coordinated HIV/AIDS prevention program that is multi-disciplinary and innovative among others to ensure the recruits remain negative for HIV.

Recommendations

These include:

To maintain the HIV negative sero-status of the recruits, continuing HIV health education should regularly be carried out to prevent self-complacency even after they must have passed-out as soldiers.

Social mobilization and sensitization meetings with commanders, religious and opinion leaders in the various military establishments on the need for teaching HIV/AIDS in churches, mosques, officers' messes, soldiers' clubs and schools.

Youth friendly centres should be established in all the medical units of the NA barracks. This should provide enabling environment for youth counselling, voluntary confidential counselling and testing of HIV and public enlightenment programs.

Integration of HIV/sex education with appropriate information on responsible and safe sex into the general study curriculum of the recruits in Depot NA. This is very important as it serves as a portal of entry for soldiers into the army.

Recruits/soldiers should be encouraged to form peer groups that can advocate for safe sex in the barracks and there is need to establish a workplace policy on HIV/AIDS.

There is the need for the government and the military authorities to encourage and promote more HIV/AIDS related research amongst its personnel as the outcome will be very beneficial to the system.

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