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HIV Infection among Civilian Applicants for Nigeria Military Service

[Nijerya Silahlı Kuvvetleri'ne Başvuranlarda HIV Enfeksiyonu]

SUMMARY
AIM: HIV/AIDS is a serious social pathology in public health, developmental and security problem since the productive and reproductive age group is mostly affected. This study was to determine the sero-prevalence of HIV among civilian applicants enrolling into military services of Nigeria army where youth's vulnerability to HIV infection is very high.
METHOD: A periodic cross sectional study was carried out amongst the civilian applicants undergoing recruitment into the Nigeria Army between January-February and July-August 2005, to determine their HIV status. Samples were collected from the applicants after interview to collect their socio-demographic characteristics. Data were analyzed with the aid of SPSS Version 12 and Chi square statistics was used to test for significance of association at P< 0.05.
RESULTS: Out of the 9260 samples collected, 204 (2.2%) tested positive for HIV with the highest proportion (73.5%) occurring in the 22-25yrs bracket. Infection was detected in both sexes. The mean age of the applicants was 22yrs, with age range of 18-30 yrs and sex ratio of 1:7 (M: F). Age sex-specificity shows aged between 21-24 years have the highest number of HIV-antibody positivity.
CONCLUSION: Antibody-positive applicants were identified in all the regions of Nigeria and the prevalence suggests that the epidemiology of transmission is changing both quantitatively and qualitatively because HIV now occurs commonly among young adults in their teens and late 20s and the impact of HIV on the military has grave consequences on the stability of Nigeria. The adoption of routine screening of applicants at point of recruitment, serving and retiring from the military can also be a source of data for understanding the epidemiology of this disease among the civilian and the military but in as HIV counseling and testing is an important continuum of the disease prevention and treatment, there is need to review Nigerian Army HIV and AIDS policy.

ÖZET
AMAÇ: HIV/AIDS üreme çağında bulunan yaş grubunda sıklıkla rastlanan gelişim ve güvenlik problemi olarak kabul edilen ciddi bir halk sağlığı sorunudur. Bu çalışmada gençler arasında HIV enfeksiyonunun çok yaygın olduğu Nijerya'da, silahlı kuvvetlere katılım için başvuran sivil adaylarda HIV seroprevelansının araştırılması amaçlanmıştır.
METOD: Bu kesitsel çalışma Ocak-Şubat ve Temmuz-Ağustos 2005 dönemlerinde Nijerya ordusuna katılmak için başvuran adaylarda HIV enfeksiyonu durumunu tespit etmek için planlanmıştır. Örnekler, katılımcıların sosyo-demografik özelliklerinin kaydedilmesini takiben toplanmıştır. Elde edilen veriler SPSS 12 programında ki-kare testi kullanılarak gerçekleştirilmiş, p değerinin 0.05'ten küçük olması anlamlılık sınırı olarak kabul edilmiştir.
BULGULAR: Çalışmada değerlendirilen 9260 örnekten 204 (%2,2)'ünde HIV testi pozitif çıkmış, en yüksek oran 22-25 yaş grubunda tespit edilmiştir (%73,5). Her iki cinste de enfeksiyona rastlanmıştır. Katılımcıların yaş ortalaması 22 olup, yaş aralığı 18-30, erkek-kadın oranı ise 1:7'dir. HIV antikor pozitifliğine en sık 21-24 yaş aralığında olanlarda rastlanmıştır.
SONUÇ: Nijerya'nın tüm bölgelerinden antikor pozitif adaylar tespit edilmiş, elde edilen prevelans, hastalık epidemiyolojisinin bölgelere göre kalitatif ve kantitatif olarak değiştiğini göstermiştir. Bu durum HIV bulaşının genç erişkinlerde (13-19 yaşlarından 20'li yaşların sonlarına kadar) gerçekleştiğinden kaynaklanmaktadır. Silahlı kuvvetlerdeki mevcut HIV yaygınlığı Nijerya'nın istikrarına da ciddi etki etmektedir.

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Key Words:
Knowledge, Attitude, HIV, Nigeria

Anahtar Kelimeler:
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INTRODUCTION

The Result of 2005 seroprevalence survey in Nigeria showed HIV to be a problem; HIV infection was present in all the states of the federation with a national prevalence falling from 5.0 to 4.4% and a range of 1.0-14% in different parts of the country.1 Unfortunately, the age group (18-24yrs) mostly affected by the epidemic is the group suitable for recruitment into the Nigeria Army.

Different countries have different policies on new recruitment as it relates to Army recruitment. The major aim is to recruit cadets and others who are HIV negative and to guard their HIV negative status

jealously so as to have a combat-ready defence force. Studies have shown soldiers to have higher HIV seroprevalence than the general population (2,3,4).

HIV/AIDS guidelines in the Army in most countries states that recruitment shall always be based on established medical standards of fitness. These takes into account the physical, social and mental wellbeing; as well as the biochemical, haematological and microbiological fitness profile of individual applicants. All applicants who do not satisfy the established criteria are excluded from recruitment.

There are various reasons peculiar to the military for excluding HIV positive applicants from recruitment. These include that military training is strenuous which could unmask a salient disease condition. Secondly, HIV positive individuals who get injured in battle and operational duties will bleed and might infect others. Thirdly, they will not be able to assist others in battle as blood donors for those who are critically injured. In addition, it increases medical cost during and after training, therefore, there would be great cost to the Government in maintaining such HIV positive soldiers (5,6).

HIV is not only a serious public health or social problem affecting the Army, but also a national security problem that requires a concerted effort to control the disease (4). The impact of HIV on the military has grave consequences on the stability of Nigeria. It is a policy of the Army in some countries, that civilian applicants must under go a mandatory medical examination as a prerequisite for recruitment. This is also the case in Nigeria. Before the HIV/AIDS epidemic, there has been no pre-screening exercise in Nigeria with large number of army recruits on annual basis and data on HIV among the military is very scanty. This study was to determine the sero-prevalence of HIV among civilian applicants enrolling into military services of Nigeria army where youth's vulnerability to HIV infection is very high.

MATERIALS AND METHODS

Study Population

The recruitment exercise took place between January-February and July-August 2005. Blood samples were collected for laboratory investigations from 9,260 applicants that were stationed in the Military Entrance Processing Station (MEPS) (i.e. Zaria Army Depot). This is to assess their medical suitability. Government incurred the cost of the investigations. The medical centre served as the interview centre and for collection of blood samples. A questionnaire detailing sociodemographic characteristics was completed before collection of blood sample for the test for each applicant. Those not ready to undergo the mandatory physical exercise, thorough medical examinations and investigations were automatically screened out of the recruitment exercise after informing them of the nature of the tests.

Collection of specimens

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^{o}C) until tested for presence antibodies against HIV.

Screening

Blood samples were screened for HIV infection using ELISA which is both sensitive and specific (99-100%).The method used 2 sequential rapid tests as recommended by the Nigeria Ministry of Health series algorithm testing for rapid HIV testing using Determine, HIV 1& 2 Stat Pak testing kits. Specimen negative on Determine HIV 1& 2 were considered negative and Specimen positive on Determine HIV 1& 2 and HIV 1& 2 Stat Pak were considered positive. Specimens with discordant results using Determine HIV 1& 2 and HIV 1& 2 Stat Pak was re-tested on Genie 11 as a tie-breaker. Specimens negative on the tie-breaker were considered negative while specimens positive on the tie-breaker were considered positive. 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 5minutes to give post-test counseling and information to each candidate.

Data analysis

The collected socio demographic data and HIV assay were analyzed with the aid of SPSS Version 12 and X2 statistics was used to test for significance of association at P value < 0.05.

Ethical Consideration

The applicants consented to the HIV screening. Some did that because even though the test is said be voluntary they were aware that any one not undergoing the test is automatically screened out.

RESULTS

Of the 9260 inmates screened, 204 (2.2%) had antibodies against HIV. The age range of the study

group was between 18-30 years and the mean age was 22 years with female: male ratio as 7:1. The percentage positivity was highest in the age group 22-25yrs (73.5%), followed by 18-21yrs (19.6%), and >25 yrs had 6.9%. The detailed results are summarised in Tables 1, 2 & 3.

Table 1. Sex distribution and seropositivity

Sex	Number tested	Number positive	% positivity
Male	8122	134	65.7
Female	1138	70	34.3
Total	9260	204	100.0

X^2=2.90, df = 1, p > 0.05,

Table 2. Age distribution and seropositivity

Age group(yrs)	Number Tested N=9260	Number Reactive N=204	% Positivity
18-21	2500	40	19.6
22-25	6500	150	73.5
>25	260	14	6.9
Total	9260	204	100.0

Table 3. Geopolitical distribution and seropositivity

Geo-political Zone	Number tested	Number Reactive	% Positivity
NE	1540	25	1.6
NW	2550	80	3.1
NC	1870	44	2.4
SS	900	15	1.7
SE	1285	20	1.6
SW	1115	20	1.8

The applicants were from the 6 geo-political zones of Nigeria namely; North West (NW), North East (NE), North Central (NC), South South (SS), South East (SE) and South West (SW).

Age

Of the HIV-antibody positive applicants, 40 (9 women and 31 men) were aged between 18 and 20 years (p=1.6%); 150 (95 men and 55 women) were aged between 21- 24 years (p=2.3%) and 14 (8 men and 6 women) were within the range of 25 and above, (p=6.6%) fig 1.

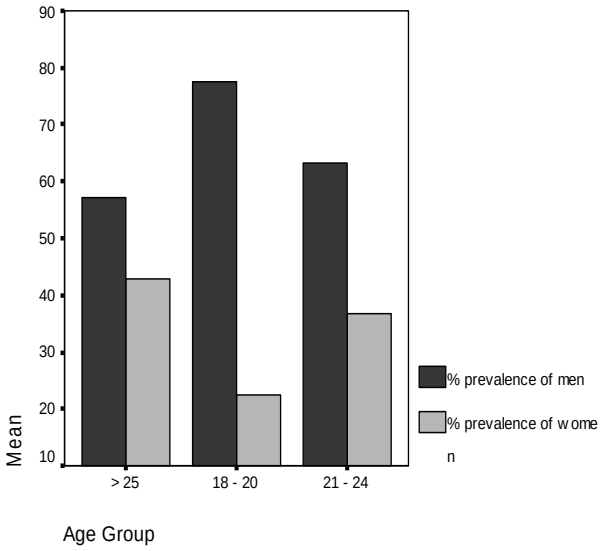

Figure 1. Prevalence rate among male and female applicants.

Sex

Out of the 9,260 civilian applicants screened, 8122 were men and 134 were positive for HIV-antibody (p=1.65%) and 1138 applicants were women out of which 70 were positive for HIV-antibody (p=6.2%). 88% of the civilian applicants were secondary school certificate holders and 12% were having national diploma.

Age Sex Specific

Between 18-20 years, the total civilian applicants was 2,500 and the male were 2,200, out of which 31 were positive for HIV-antibody (p=1.4%) and their female counterparts were 300, out of which 9 were positive (p=3.0%).

The densely populated age group (21-24 years) have civilian applicants of 6,500, out of which the male were 5820 and 95 of them were positive for HIV (p=1.6%) and their female counterparts were 680 out of which 55 were positive for HIV (p=8.0%).

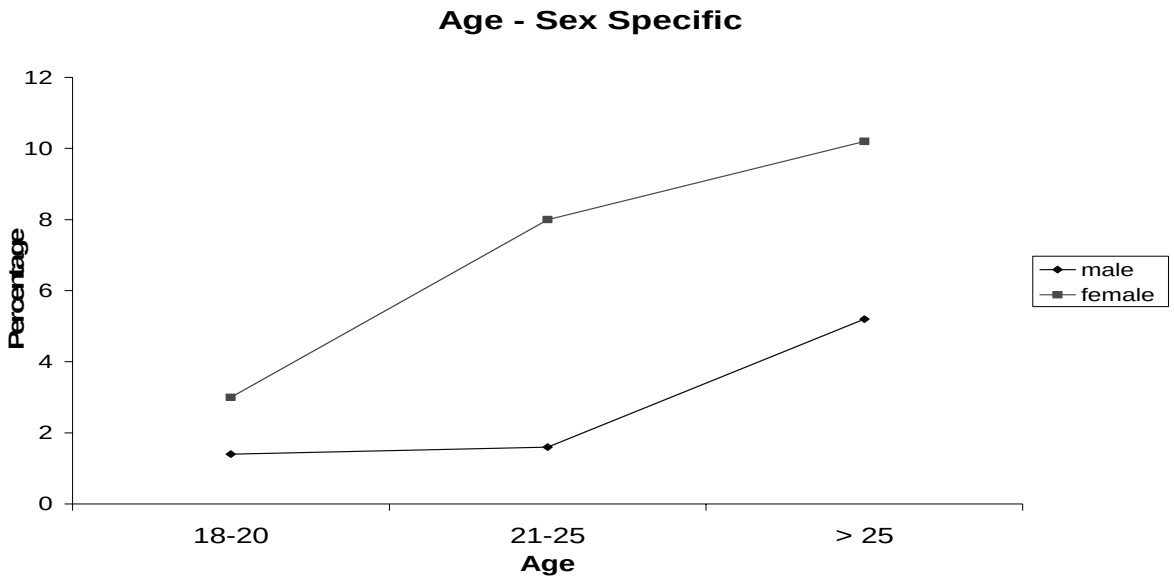

Figure 2. Age-Sex specific

Aged 24 and above had the least population of 210, out of which 152 were the male applicants with 8 being positive for HIV-antibody (p=5.2) and the female applicants were 58 with 6 positive for HIV (p=10.2%) fig. 2.

DISCUSSION

HIV prevalence has remained relatively steady-generally at high levels because of high level of new infections in Nigeria. Between January - February and July – August2005, the percentage prevalence of HIV- antibodies among 9,260 civilian applicants screened for military service was 2.20%. Because the population studied was relatively young, it is possible that the true prevalence of HIV exceeds 2.20% especially with the release of 2005 sentinel reports where a range of 0.5-35% in different parts of the country was noted1. But because of selection biases, the data on HIV sero-prevalence in this study may give an imperfect reflection of the Nigerian population at large because men and women who are active heterosexuals and homosexuals, drug addicts are not truly represented among the applicants for admission into the military. The sero-prevalence is lower than the figure of 16% found in a similar study in Uganda (2). However, the age range is similar. The difference in the prevalence value may be as a result of the high prevalence among the general population in the early 1990s in Uganda before the government took a concerted effort to control the disease. The lower figure in our study may be because of the awareness of the Military mandatory Screening for HIV/AIDS, so those who are not very healthy or sure of their HIV status may not want to enroll. While the similarity in the age group is, because, in most countries these are the active age groups that are usually recruited for military services.

The prevalence of HIV/AIDS among civilian applicants also depends on the nature and stage of the epidemic in the country among others (7).

The lower seroprevalence of 1.31% in the study among civilian applicants in the United States of America may be due to the nature and stage of the epidemic, effective education and preventive measures to control the disease in this developed country (8). Since selection factors undoubtedly changed over the period, estimates on the data probably underestimate actual value here. However, there is similarity with our study, in that it was independently associated with age and gender.

In the study, the mean male: female ratio was 7:1. This is result of the perception in Nigeria that military service is predominantly for males. However, there was no statistical significance between prevalence of the disease among males and females. Similar studies showed males to constitute the majority of the applicants and those that tested positive to the HIV

with different prevalence in different parts of the country (9,10).

HIV/AIDS Sentinel Seroprevalence survey of 2001 showed figures of 5.4% (NE), 3.3% (NW), 5.5% (NC), 7.7% (SS), 5.8% (SE) and 4.0% (SW) (11).

The geopolitical distribution of the disease in this study showed that no region of the country is spared.

However, North West (3.1%) had the highest prevalence followed by North Central (2.4%).The large population of applicants from these regions may be result of their proximity to the recruitment centre.

In as Pre-employment, pre-placement or periodic medical examinations are very important there should be no discrimination against a potential recruit or employee (in area of promotion, renewal of contract) based on his/her HIV status especially if people with the infection are physically and mentally well enough to perform their jobs effectively. They should be allowed to do so especially now that there is better treatment, care and support of people with this disease (12,13,14). 2001, the International Labour Organisation (ILO) published a code guiding the recruitment and employment of individuals suffering from HIV. This provided for nondiscrimination on the basis of HIV/AIDS for anyone being recruited, the military included, as well as support for who become infected during their working lives (15,16).

CONCLUSION

HIV counseling and testing is an important part of a continuum of HIV prevention and treatment; however, it should be voluntary and be used as one of the primary entry points in the prevention of the disease, access to ARV (antiretroviral) and adjuvant drugs and other services for HIV positive persons.

There is need to review the Nigerian Army HIV/AIDS Policy document and increase collaboration in the fight against HIV/AIDS between the military and civilian establishments. What happened to those civilian applicants that were seropositive for HIV is the big question. Are they left to pose further threat to public health?

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