

# The effect of age on knowledge of HIV/AIDS and risk related behaviours among army personnel

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## Abstract

**Background:** HIV/AIDS has been described as the fourth largest cause of death globally and leading cause of death in Africa. HIV/AIDS has been a devastating inferno for nearly 30 years, and has particularly impacted countries in sub-Saharan Africa. In most African countries, it has been reported that the HIV infection amongst the military has been shown to be about 2 to 5 times higher than their civilian counterparts.

**Objective:** To address the knowledge level of HIV/AIDS and risk-related behaviours in military personnel, a well-described high risk groups for HIV/AIDS.

**Methods:** A cross-sectional study among army personnel in 82 Division Nigerian Army Headquarters Enugu, which has a population of about 1777. A random sampling in all the departments of 82 Division Nigerian Army Headquarters was done using the ballot method to select the respondents. Approval for the study was obtained from the General Officer in Command (GOC) of the 82 Division Nigerian Army Headquarters Enugu.

**Results:** There were no significant differences between the risk related behavior variables when comparisons were made between those under 30 years, and those 30 years and above. Furthermore, more respondents under 30 years (48.0%) did not seek medical treatment when infected with another STI before having sex again as against 45% of those above 30 years. Most of the respondents (9.1%) under the age of 30 years believed that HIV/AIDS could be contracted through mosquito bites as against 2.8% of those above 30 years.

**Conclusion:** The knowledge level of HIV/AIDS among the army personnel was high, though misconceptions about transmission modes like getting HIV through the bites of mosquitoes and casual body contacts were noted, especially among those under 30 years of age.

**Key words:** army personnel, age, HIV/AIDS, knowledge, risk related behaviour, Enugu

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## Introduction

HIV/AIDS has been a devastating inferno for nearly 30 years, and has particularly impacted countries in sub-Saharan Africa<sup>1,2,3,4,5</sup>. Many reports have shown that teenagers, young adults and military personnel are mostly infected<sup>3,6,7</sup>. In most African countries, the HIV infection amongst the military has been shown to be about 2 to 5 times higher than their civilian counterparts<sup>8,9,10,11</sup>. Several factors have been implicated in the increased vulnerability of the personnel in military service to HIV infection; these include being mobile and away from home, less

subject to social controls, subject to professional ethos that tends to excuse or encourage risk-taking, young and sexually active, inclined to risk behavior including risky sex and substance abuse, deployed where alcohol<sup>12</sup>, drugs and prostitution may be easily accessible or available and, often in a position where they have more money, more power and more influence than the local population<sup>10,13,14</sup>. Nigeria has a severe and rapidly growing HIV/AIDS epidemic, characterized by adult prevalence rate of 3.6 – 8.0 %<sup>15</sup>; average of 5.4% and rates as high as 30% among some 'high-risk' groups. As many as 10 – 15 persons with full-blown AIDS are admitted weekly in some tertiary facilities<sup>3</sup>; adult HIV prevalence increased from 1.8% in 1991 to 5.8% in 2001. Women are believed to be more severely affected than men<sup>16</sup>. Young people; especially women 20 –

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24 years old are increasingly vulnerable. Among those aged 15 – 24 years, the estimated number of young women living with HIV/AIDS was almost twice that of young men<sup>6</sup>. There are many risk factors that contribute to the spread of HIV, including prostitution<sup>17,18</sup>, high-risk behaviours among itinerant workers, high prevalence of sexually transmitted infections, polygamy<sup>19</sup>, polygyny<sup>20</sup>, clandestine high-risk heterosexual and homosexual practices, international trafficking of women, and irregular blood screening<sup>21</sup>. HIV/AIDS has been described as the fourth largest cause of death globally and leading cause of death in Africa<sup>1</sup> and the epidemic being worst among the youth in most endemic regions. WHO/UNAIDS 2007 Reports reflect that about 33 million people are living with HIV, 15 million of which are women and 2.5 million are children under the age of 15<sup>22</sup>.

The objective of this study was to address the knowledge level of HIV/AIDS and risk-related behaviours in military personnel, a well-described high risk groups for HIV/AIDS.

## Methods

### Study area

We conducted a cross-sectional study among army personnel in 82 Division Nigerian Army Headquarters Enugu, which has a population of about 1777. Enugu is a cosmopolitan city being the oldest capital city in the Eastern region and the first coal mining site in Nigeria. The community in which the army personnel and their families live provides all the social amenities, school for the children, recreation centers, Hospitals and offices for them. The hospital renders specialist and general services; this also has a division that deals with HIV/AIDS-related issues headed by a General Surgeon.

### Study population

The study population included both officers and soldiers [(the low ranking army personnel, who are non commissioned officers and ranks and files) constituting the majority of those (up to 95%)] who participated in completing the anonymous structured questionnaire with informed consent.

### Study design

Descriptive study was done to identify the HIV-related risk behaviors and to assess their knowledge level of HIV/AIDS as related to their age. The sample size was determined using formula  $N = \frac{Z^2PQ}{D^2}$ <sup>23</sup>.

Where:

N = minimum sample size,

Z = Estimated standard deviation 1.9;

P= prevalence of HIV/AIDS in Nigeria 5.4%;

Q= 1- P;

D= Degree of accuracy desired= 5%;

N was calculated to be approximately 79 but sample size of 299 was used to have increased number of the army personnel represented in the study.

A random sampling in all the departments of 82 Division Nigerian army headquarters was done using the ballot method to select the respondents.

## Data collection

Approval for the study was obtained from the General Officer in Command (GOC) of the 82 Division Nigerian Army Headquarters Enugu. Anonymous structured questionnaires (which was divided into three sections, section A:Social demographic data, Section B:Knowledge of HIV/AIDS and section C:risk related behaviours) were administered for completion by the respondents, with the help of two research assistants, in August 2007 to seek information about their knowledge of HIV/AIDS transmission, prevention, and indulgence in risk-related behaviors. Prior to administration of the questionnaire, some samples were used for pilot study to ascertain clarity. Each potential respondent was approached and the purpose was explained. Also told that participation was voluntarily after which a questionnaire was given and how to complete was explained. The respondents were assured of confidentiality of information provided, and none was compelled to return their questionnaire if they wished not to participate in the study any further. We analyzed 299 properly completed questionnaires out of 500 distributed, though more than 299 were collected but the improperly completed ones were not included in the analysis. Data were analyzed using chi-square ( $p < 0.05$ ) of SPSS software.

## Results

A total of 299(16.83%) of 1777 army personnel population participated in the study. Of the respondents 164(54.8%) were married; 133(44.5%) single and less than 2 (1%) divorced. The mean age of the study population was  $30.9 \pm 8$ . The most frequent age group was 25 – 29 years, followed by 20 – 24 years (table 1). Of the 299 study population, 81.2% were male while 18.8% were female.

**Table 1: Age distribution**

Age group	Frequency	Percent
<20	6	02.01
20-24	70	23.41
25-29	74	24.75
30-34	59	19.73
35-39	39	13.04
40-44	26	08.70
45-49	22	07.36
≥50	3	01.00
<b>Total</b>	<b>299</b>	<b>100.00</b>

Most of the respondents (9.1%) under the age of 30 years believed that HIV/AIDS could be contracted through mosquito bites as against 2.8% of those above 30 years (chisquare = 5.2, p = 0.02) (table 2).

More of the respondents (94.1%) 30 years and above knew that 'use of condoms during sex' is a way of preventing HIV/AIDS as against 82.4% of those under 30 years (chi square = 9.0, p = 0.003). Also a total of 35 respondents 24.6% of those under 30 years of age and 51 respondents (37.8) of those 30 years and above knew that avoidance of self drug injection is a way of preventing HIV/AIDS (5.57, 0.02) (table 3).

**Table 2: Knowledge of ways of contracting HIV/AIDS in relation to age**

Method of contracting HIV/AIDS	Age (Years)		Chi-square	p-value
	< 30	30 and above		
	Frequency (%) (N = 143)	Frequency (%) (N = 145)		
Having sex with an infected person	140 (97.9)	136 (93.8)	3.04	0.08
Receiving infected blood during blood transfusion	132 (92.3)	132 (91.0)	0.15	0.70
Sharing needles/syringes contaminated with infected blood	120 (83.9)	131 (90.3)	2.66	0.10
Accidental needle pricks contaminated with infected blood	107 (74.8)	112 (77.2)	0.23	0.63
Mother to unborn child	89 (62.2)	98 (67.6)	0.90	0.34
Through mosquito bites	13 (9.1)	4 (2.8)	5.20	0.02*
Through body contact like hugging, dancing and shaking hands with infected person	3 (2.1)	5 (3.4)	0.12	0.74

\* Statistically significant (p<0.05)

**Table 3: Knowledge of ways of preventing HIV/AIDS in relation to age**

Method of preventing HIV/AIDS	Age (Years)		Chi-square	p-value
	< 30	30 and above		
	Frequency (%) (N = 143)	Frequency (%) (N = 145)		
Avoidance of multiple sex partners	129 (90.8)	125 (92.6)	0.28	0.60
Use of condom during sex	117 (82.4)	127 (94.1)	9.0	0.003*
Avoidance of sharing needles, clippers and blades when cutting hairs and nails	107 (75.4)	114 (84.4)	3.55	0.06
Screening blood before transfusion	103 (72.5)	110 (81.5)	3.12	0.08
Avoidance of pregnancy in an infected woman	73 (51.4)	70 (51.9)	0.01	0.94
Avoidance of self injection of drug	35 (24.6)	51 (37.8)	5.57	0.02*

\* Statistically significant (p<0.05)

There were no significant differences between the risk related behavior variables when comparisons were made between those under 30 years, and those 30 years and above (table 4).

Furthermore, more respondents under 30 years (48.0%) did not seek medical treatment when infected with another STI before having sex again as against 45% of those above 30 years. (table 4).

**Table 4: HIV-related high risk behaviors among respondents in relation to age**

Risky Behavior	Age (Years)		Chi-square	p-value
	< 30 Frequency (%) (N = 150)	30 and above Frequency (%) (N = 149)		
Not seeking medical treatment when infected with another STI before having sex again	72 (48.0)	67 (45.0)	0.28	0.60
Having unprotected sex with some one whose HIV status is unknown	21 (14.0)	17 (11.4)	0.45	0.50
Having sex with multiple partners without using a condom	16 (10.7)	19 (12.8)	0.31	0.58
Having unprotected sex with someone that is HIV-positive	8 (5.3)	10 (6.7)	0.25	0.62
Sharing of needles during self injection of drug	4 (2.7)	5 (3.4)	0.12	0.73

## Discussion

We found no evidence in literature related to the HIV/AIDS epidemic awareness and/or the knowledge level among the Nigeria army personnel in the 82 Divisions Nigeria Army Headquarters Enugu. In order to fill the knowledge gap, this study was conducted to identify their knowledge level and high risk related behaviours among the army personnel.

Age may play important role in knowledge level of HIV/AIDS, so the comparisons between those that were under 30 years and, those that were 30 years and above were made to establish the influence of age on knowledge level and risk behaviours.

From our results, 9.1% of those under the age of 30 years believed that HIV could be transmitted through mosquito bites as against 2.8% of those 30 years and above ( $p = 0.02$ ). This reflected deficiency in the knowledge level of the respondents under 30 years of age. The misconception about mosquito being a transmission agent has been documented<sup>24,25,26,27</sup>. Poor knowledge of modes of transmission of HIV has also previously been reported among Nigerian military<sup>8</sup>. There is need for interventions to further enlighten the army personnel on the definite means through

which HIV is transmitted to correct the impression; in order to reduce the stigmatization this may be causing the HIV infected ones<sup>28</sup>.

From (table 3) those that were 30 years and above appeared to be more aware of various ways of preventing HIV/AIDS than those under the age of 30 years, though there was no statistical difference between the two groups in 4 out of six ways mentioned. However, there were statistically significant differences between the two groups with respect to knowledge of 'use of condom during sex' and 'avoidance of intravenous drug abuse' as ways of preventing HIV/AIDS.

This showed that 94.1% of those above 30 years knew that 'use of condoms during sex' is a way of preventing HIV/AIDS as against 82.4% of those under 30 years ( $P = 0.003$ ). Likewise, 37.8% of those 30 years and above knew that 'avoidance of self injection of drugs' is a way of preventing HIV/AIDS as against 24.6% of those under 30 years ( $P = 0.02$ ). This implies that those 30 years and above were more knowledgeable about ways of prevention than those under 30 years. Hence, the need for more information and education on HIV/AIDS for the army personnel especially those under 30 years of age.

Furthermore, influence of age on risk-related behaviors was not significant in all the 5 ways mentioned. Though those 30 years and above appeared to be more knowledgeable about HIV/AIDS than those under 30 years. The indulgence in risk related behaviours by the military seems to be a common event amongst them (table 4), the view is supported by this finding that despite basic understanding among Nigerian soldiers of HIV facts and risks, myths surrounding HIV are still prevalent and unprotected sex remains common<sup>29</sup>. It was also reported that many Naval personnel involved in high risk sexual behavior despite their very high mean AIDS knowledge score<sup>30</sup>.

### Conclusion

Our findings reveal that the knowledge level of HIV/AIDS among the army personnel was high, though misconceptions about transmission modes like getting HIV through the bites of mosquitoes and casual body contacts were noted, especially among those under 30 years of age. Obviously from our data, there was no significant difference between the risk behaviours of those under 30 years of age when compared to those that were 30 years and above. This implies that age was not a dependable factor, when it comes to risk behaviours. There is therefore, a great need for more information directly and indirectly through consistent awareness program amongst the army personnel as this could be effective. To alert them of the consequences and imminent danger of risk-related behaviours recorded in this study, despite relatively high knowledge level about HIV/AIDS.

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