



## Assessment of KAP Regarding HIV Testing among Military Personnel in Omdurman Military Area 2017 - Sudan

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**Received:** April 15, 2019; **Published:** May 23, 2019

**DOI:** 10.31080/ASMI.2019.02.0250

### Abstract

**Background:** According to WHO and UNAIDS estimates, the prevalence rate of HIV infection in Sudan is 25% in 2016. The AIDS epidemic in Sudan is concentrated among the most vulnerable groups (Commercial sex workers and MSM).

**Materials and Methods:** It is a descriptive cross-sectional community based study conducted at Omdurman Military Area among active duty service military personnel. The objective of the study was to establish baseline behavioral, knowledge and intervention program in relation to HIV/AIDS among military personnel. A sample size of 340 military personnel was determined using statistical formula.

**Results:** The entire respondents 100% is males, all 100% are Muslims and 100% of them had been circumcised. About 34.1% of the age group is between 18-24 years and 54.1% is between 25-49 years. Regarding education about 56.2% had basic school, 32% high school and only 11.8% illiterate. About 75% were married. The respondents were highly knowledgeable of HIV/AIDS, with 98.9% aware about AIDS, the main channel of hearing about HIV/AIDS is the lectures that had been done by the health workers (45%), however, only 13% heard about AIDS from peers. Only 35% of the respondents know about the symptoms and signs of the disease.

**Conclusion:** Even though the respondent's knowledge about the disease was good but also there was some wrong believes. The study showed that circumcision, religion, marital status, and health education programs are significant predictors for HIV infections control and prevention.

**Keywords:** STDS; HIV/AIDS; Military Personnel; KAP

### Abbreviations

AIDS: Acquired Immunodeficiency Syndrome; HIV: Human Immunodeficiency Virus; KAP: Knowledge, Attitude and Practice; STDs: Sexual Transmitted Diseases; UNAIDS: Joint United Nations Program on HIV/AIDS; WHO: World Health Organization.

### Introduction

Military personnel have a high risk of exposure to STDs and HIV/AIDS infection; this is due to their jobs and missions. The military risk environment is further enhanced by the mobility and absences from home and community that the military life demands, also the soldier is attractive for commercial sex workers. The difference can be greater in times of armed conflicts. The HIV/AIDS infection is a great threat not only to military personnel but also to their families and the communities. Although military personnel are highly susceptible to HIV/AIDS infection as a group, military services are also a unique opportunity in which HIV/AIDS pre-

vention and education can be provided to a large group of captive audience in a disciplined, highly organized setting. Many studies reported positive intervention effects on changing soldiers' behavior to be less risk taking [1].

**The Military Workplace:** The armed forces recruit young men and women at a time of their greatest risk to HIV, in the 15 to 25 year age group where more than half of all new infections occurs. The military risk environment is further enhanced by the mobility and absences from home and community that military life demands. In the less-developed world at least, the military workplace imposes a heightened vulnerability to HIV infection and onward transmission, with the dynamic of transmission being similar to that seen in long-distance transport workers and migrants employed in the mining sector. Military installations also inevitably attract gatherings of sex workers. The military risk environment is further enhanced by the missions that African, Asian, and other militaries are increa-

singly called upon to carry out. These may include internal and cross-border armed conflicts, at worst accompanied by genocidal ethnic, religious, and territorial confrontations and massive displacements of civilian populations, combining to produce highly complex humanitarian emergencies [6].

In an era when worldwide military operations have increased, these analyses identified potential areas where targeted HIV prevention efforts may be beneficial in reducing HIV incidence in USAF military population [5].

The risk-taking ethos and other attitudinal factors: Military personnel are not only a special group because of objective factors such as their relative youth, but also because of their attitudes. Some attitudes include both those purposefully inculcated by the armed forces in training and those which are learnt informally as part of military culture and strongly encouraged through peer pressure. For instance, willingness to accept risk is highly important in combat, but off the battlefield it may increase soldiers' willingness to engage in needlessly risky behavior. The high value placed on aggressiveness may make soldiers' prone to pursuing sex with many different partners as a type of conquest. Finally, the sense of prestige that comes with being part of the uniformed armed forces, reinforced by bonding within units, may tempt soldiers to view civilians especially women as people over whom power can be exerted. This may increase the likelihood of soldiers engaging in anonymous, purchased or even coercive sex [6].

Emerging from a wealth of country relevant results, some important findings can be generalized. First, successive marriages are a significant risk factor. Second, contrary to prima facie evidence, education is not positively associated with HIV status. However, schooling is one of the most consistent predictors of behaviors and knowledge: education level predicts protective behaviors such as condom use, use of counseling and testing, discussion of AIDS between spouses, and knowledge about HIV/AIDS, but it also predicts a higher level of infidelity and lower level of abstinence [4].

There is compelling evidence that male circumcision reduces the risk of HIV infection in men by approximately 60%. Three randomized controlled trials (Magoha 1999; Szabo and Short 2000; Weiss., *et al.* 2000; FHI 2009) have shown that male circumcision provided by well trained health professionals in properly equipped settings is safe [4].

Many military prevention programs can be improved through post deployment briefing and proactive interventions involving education, condom distribution, and counseling combined with

testing. Mandatory testing is often inconsistent with stated goals, and AIDS care policies may strain military budgets. Testing based on benefit cost assessments may increase efficiency in military HIV control. Military budgets may benefit from greater civil military cost sharing in AIDS care [6].

Sudan is bordered by countries with high rates of HIV infection. The first case of AIDS was reported in 1986. Sudan is one of the countries with low prevalence of HIV infection after the secession of Southern Sudan. According to WHO and UNAIDS estimates, the prevalence rate of HIV infection in Sudan is 25% in 2016. The AIDS epidemic in Sudan is concentrated among the most vulnerable groups (women who have sex for money and men have sex with men) [8].

Moreover, usually Sudanese soldiers travel from place to place for different professional reasons and stay longer apart from their family inside the country or in other country as in Saudi and Yemen now. This may force them to have multiple sex partners that can expose them for different sexually transmitted infections (STIs) including HIV/AIDS. Although several studies reported the prevalence of HIV/AIDS infections among different risk groups, so far there is no a published studies about HIV/AIDS among military personnel in our Army Force recently. Thus, this study primarily aimed to assess the KAP regarding HIV testing among military personnel in Omdurman military area – Sudan [2].

#### Military prevention program

- Lectures (direct contact) to provide participants with basic information on AIDS and other sexually transmitted diseases and the current status of AIDS globally and locally.
- Religious lectures that promote abstinence, marriage and self-preservation, family and society.
- Explain the idea of peers as the most important means of raising awareness among members of the armed forces.

#### Encouraging voluntary testing and counseling

- To combat stigma and discrimination against people living with HIV/AIDS and to ensure that they enjoy as citizens all their civil rights guaranteed by the Constitution and law.
- Build and sustain partnerships with relevant government sectors, national organizations, civil society organizations and the global organizations to combat AIDS.
- Capacity building in the various areas of AIDS control.
- Conduct research and studies necessary to update priorities and interventions to combat AIDS [2].

## Previous studies

A study carried out by (Mohamed B.A. 2013) at Omdurman National Voluntary Counseling and Testing Centre, Sudan covered 870 participants, to assess participants' knowledge about HIV/AIDS and to identify the factors associated with HIV/AIDS in Sudan. Socio-demographic data as well as information related to sexual behavior were collected. Most of the respondents were knowledgeable about the true transmission modes for AIDS virus. Very few respondents knew someone infected with AIDS (4.5%), died of AIDS (8.1%), accepted to live with someone infected with AIDS (4.7%) or to work with someone infected with AIDS (2.1%). Regarding sexual behaviors, 96.5% had reported their first sexual experience between 20 and 30 years, with 85.7% reporting one or two partners, and only 1.8% reported using condom. Multivariate logistic regression showed that circumcision, religion, marital status, age at first sex, number of sexual partners, education level, and misconception of knowledge are the main risk factors were associated with HIV/AIDS. In conclusion the results showed that a number of diversity risk factors were associated with HIV/AIDS. It is unlikely that a holistic approach will be found to immediately change sexual risk relating behavior [3].

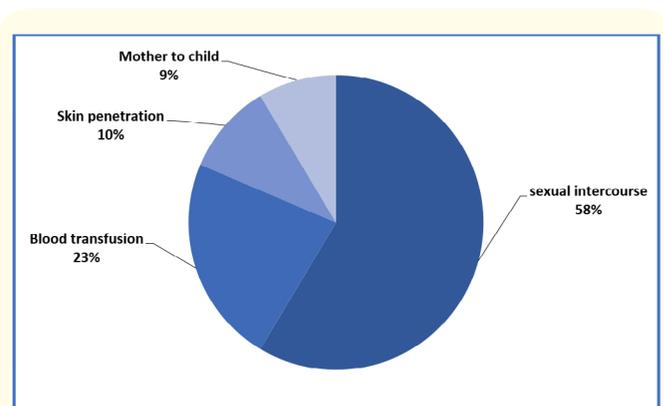
## Materials and Methods

- **Study design:** It is descriptive cross-sectional community-based study. It was conducted at Omdurman Military Area among active duty service military personnel. The objective of the study was to establish baseline behavioral, knowledge and intervention program in relation to HIV/AIDS among military personnel.
- **Study area:** Omdurman Military Area based on the western bank of the White Nile, in Omdurman City – Khartoum State.
- **Sample size:** A sample size of 340 military personnel in the Omdurman Military Area was determined using statistical formula with the marginal error 2.5% expected prevalence of 1.6% and confidence interval of 95%. Socio-demographic data as well as information related to sexual behaviors were collected.
- **Data collection tools:** Socio-demographic characteristics and associated risk factors for HIV infections have been collected using validated structured questionnaire by trained health officer.
- **Lab investigation;** rapid test was conducted to determine the prevalence of HIV infection among the respondents.
- **Data analysis:** The data were analyzed using SPSS version 23.0.

Ethical clearance was obtained from the military authorities of health department at the beginning of the data collection.

## Results

Regarding gender factor all respondents 100% are males. All 100% are Muslims as religious factor. All 100% of the respondents had been circumcised. About 34.1% of the age group 18-24 years, 54.1% of the sample aged 25-49 years and 11.8% were more than 50 years. Regarding education about 56.2% basic school, 32% high school and 11.8% illiterate. About 75% were married and 25% unmarried. The respondents were highly knowledgeable of HIV/AIDS, 100% are aware about the disease, the main channel of awareness about HIV/AIDS was the lectures program presented by the health workers (45%), the media; Radio (23%), TV (19%), however, and only 13% knew about AIDS from peers. Only 35% of the respondents know about the symptoms and signs of the disease and about 18% know about the signs of the syndrome. Only about 20% of the respondents recognized HIV virus as the cause of HIV/AIDS. The results revealed that the modes of transmission were 58% sexual intercourse, 23% blood transfusion, 10% skin penetration and only 9% from mother to child. Most 81.2% of the respondents will not work with person living with HIV/AIDS and think should not be allowed to go to work places or schools. While about 52% of the respondents would not buy food from sellers living with HIV/AIDS, 45% would not eat with person infected with HIV/AIDS and about 82.0% not sharing room with person living with HIV/AIDS. Regarding sexual behaviors about 93.6 of the respondents had their first sexual experience at the age between 20 to 30 years, 75.6% had one partner, and 24.4% had two partners. About the using of condom only 0.9% had used condom.



**Figure 1:** The respondent's knowledge about the mode of the transmission of HIV/AIDS.

Characteristic	No/ (%)
Gender	
Male	340 (100.0)
Religion	
Muslims	340 (100.0)
Age	
18-24	116 (34.1)
25-49	184 (54.1)
<50	40 (11.8)
Marital status	
Married	255 (75.0)
Unmarried	85 (25.0)
Education level	
Illiterate	40 (11.8)
basic	191 (56.2)
Secondary	109 (32.0)
Circumcisions	
Yes	340 (100.0)

**Table 1:** Socio-demographic characteristic of respondents.

The majority of the respondents 94.7% said that marriage (staying faithful to one partner) offered protection, 72.6% of them reported that abstinence provided protection and only 7.8% mentioned use of condom, the majority 92.2% not use condom. As regards wrong believes 54.7% of the respondents said the HIV virus can be transmitted by mosquito, about 51.7% by sharing food with

Attitude	No/ (%)
Transmission	
by sharing food with the infected	176 (51.7)
by Mosquitoes bites	186 (54.7)
Healthy-looking person cannot have HIV	168 (49.4)
Sharing room with a person infected with AIDS	
Yes	61 (18.0)
No	279 (82.0)
Working with a person infected with AIDS	
Yes	64 (18.8)
No	276 (81.2)
Eating with a person infected with AIDS	
Yes	153 (45.0)
No	187 (55.0)

**Table 2:** The respondents Attitudes about HIV/AIDS.

an infected person and 49.4% said that a healthy-looking person cannot be infected with HIV. Almost 100% of the results of the HIV/AIDS voluntary test among respondents were negative. About 65% of the respondents had ever been tested for HIV before, 35% had been tested for HIV and about 100% of all respondents were willing to take an HIV test in the future.

## Discussion

This study was aimed to determine the factors; knowledge, attitudes, and behaviors in relation to HIV/AIDS infection, testing, and prevention among active duty services military personnel.

Socio-demographic characteristics: A total of 340 respondents were interviewed and voluntary tested for HIV/AIDS in this study, regarding gender factor all 100% of the respondents are males. Regarding education, literacy rate was low; a majority of the respondents had a basic level of education or less. A World Bank Study had demonstrated that it is schooling rather than educational status that influences behavioral response to HIV, schooling is one of the most consistent predictors of protective behavior condom use, use counseling and testing, discussion of between spouses and knowledge about HIV/AIDS. The results about AIDS knowledge revealed that while all respondents had been aware with AIDS, about half 49.4% did not believe that a healthy-looking person can carry the AIDS virus. This belief can lead to exposure to HIV/AIDS infection because the personnel may not take precautions when having sexual intercourse with healthy-looking partners. More than half 58% of the respondents know that HIV/AIDS is transmitted by sexual intercourse, they see AIDS is a punishment from Allah for those who having sexual intercourse out of marriage so this affect the control program positively. This is similar to the result of the study that "some see AIDS as punishment of immoral behavior so that those who see their life style chance of being infected by HIV is very low". More than half 54.7% of respondents believe that mosquitoes transmit the HIV virus and this will affect the control program negatively.

All 100% of respondents had been circumcised so this is one of the good mains of prevention. The result is similar to the results of studies in Kenya, Southern Africa, Nigeria and Uganda "medical circumcision lowers the risk of HIV transmission from a woman to a man about 60 percent. Results from this survey suggest that safe male circumcision services should be provided as part of comprehensive HIV prevention package".

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All 100% of the respondents are aware about HIV/AIDS. However, comprehensive knowledge about the symptoms and signs of HIV/AIDS was low at 35%, and 18% of the respondents know about the signs of the syndrome. Only about 20% of the respondents recognized HIV virus as the cause of HIV/AIDS. This study showed that the main source and also the preferred one. This study further found that the main and preferred source of information on HIV/AIDS was the lectures program (direct contact) presented by health workers and the religious men 45%. This finding is similar to the theory that "although military personnel are highly suspected to STDs and HIV/AIDS infections as a group, military services also a unique opportunity in which HIV/AIDS prevention and education can be provided to a large captive audience in a disciplined, highly organized setting". High levels of attitudes of unaccepted people living with HIV/AIDS were reported. Most 81.2% of the respondents will not work with person living with HIV/AIDS and should not be allowed to go to work places or schools. While about 52% of the respondents would not buy food from sellers living with HIV/AIDS, 45% would not eat with person infected with HIV/AIDS and about 82.0% not sharing room with person living with HIV/AIDS. This is similar to that "more than a half of all males and females opined that a HIV positive teacher should not be allowed to continue teaching in the school while a fifth reported that they would not care at home for a relative sick with AIDS. Studies on youth in Ghana, Zambia and Burkina Faso demonstrate a clear influence of the community environment on shaping HIV-related stigma. Despite high awareness levels of HIV/AIDS in the general [population, the social stigma is still high. This implies the social tolerance of persons living with HIV is still low".

Exposure to interventions HIV Testing and Counseling: Almost 100% of the results of the HIV/AIDS voluntary test among respondents were negative. About 65% of the respondents had never been tested for HIV before, 35% had been tested for HIV and all 100% of all respondents are willing to take a voluntary HIV test in the future.

## Conclusion

In general, the present findings showed that even though the respondent's knowledge about the disease was good but also there were some wrong beliefs. Interventions including sustained educational programs, promotion of condom, and encouragement of voluntary testing were needed for the control.

The risk of transmission of HIV virus is not easy to be prevented and controlled. There are many demographic, socioeconomic and biological factors that contribute to the risk of infection, but some findings in this study demonstrate that circumcision, religion, marital status, and using direct contact lectures as mode of HIV/AIDS education and awareness are significant predictors for HIV infection control and prevention. These findings should be considered in any intervention strategy in the military services.

## Conflict of Interests

The authors declare that they have no conflict of interests.

## Acknowledgement

I gratefully acknowledge the very helpful participation of study subjects, whom without their contribution the present study would not have been completed. I would like to extend their appreciation to the Military Medical Services, Public Health and Emergencies Admin. HIV/AIDS Prevention Program for supporting this research.

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**Volume 2 Issue 6 June 2019**

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