Seroprevalence of sexually transmitted and blood-borne infections among Afghan National Security Forces recruits

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Background

- Security force recruits are nationally-representative populations of healthy able-bodied individuals, providing general population prevalence data and informing vaccination policy.[1]
- Military and police populations identified as risk groups for HIV and sexually-transmitted infections, requiring contextually-appropriate risk reduction interventions.[2]
- Afghanistan receives substantial foreign assistance to recruit, train, and build competent national security forces, with largest bodies being the Afghan National Army (ANA) and Afghan National Police (ANP).
- Little information is available regarding prevalence of HIV and other communicable diseases among groups representative of the general population in Afghanistan.

Objective

- To measure prevalence and correlates of HIV-1, syphilis, herpes simplex virus II (HSV-2), and hepatitis C virus (HCV) among a nationally-representative sample of Afghan National Security Force (inclusive of ANA and ANP) recruits and trainees.

Methods

- Cross-sectional study with randomly-selected participants from medical screening and training facilities across Afghanistan between February 2010 and July 2012.
- Eligible participants were adult males (age≥18 years) volunteers desiring ANA conscription or training in ANP facilities who spoke Dari or Pashto and were able to provide informed consent.
- Participants completed interviewer-administered questionnaires and phlebotomy to procure serum samples. Antibody screening for HIV, HCV, and syphilis was performed with rapid diagnostic tests (SD Bioline®, Standard Diagnostics) and HSV-2 ELISA (Herpeselect 2®, Focus Diagnostics).
- Positive samples were confirmed with Western Blot for HIV, TPPA and RPR for syphilis, PCR/RIBA for HCV Ab, and ELISA tests repeated in duplicate for HSV-2.
- Descriptive statistics and infection prevalence were calculated with Stata 8.0 (Stata Corporation, College Station, TX).
- Correlates of HSV-2 were assessed with logistic regression analysis.

Results

- Of 7264 trainees offered enrollment between February 2010 and January 2012, 6849 (94.3%) consented.
- Generally, participants were young, were born in Afghanistan, and had little formal education (Table 1).
- Prior intoxicant use was uncommon; 16.5% (N=1128) and 3.5% (N=242) reported prior marijuana and opiate use, respectively.

Table 1. Demographic characteristics of Afghan National Security Force recruits, February 2010 – January 2012 (N=6849).

Descriptor	Mean	Standard Deviation, (Interquartile Range)
Age (years)	22.2	4.0, (19 – 24)
Years formal education	5.8	4.7, (0 – 10)
Duration lived outside Afghanistan (months) (N=1181)	86.1	80.8, (18 – 144)
	Number	Percentage
Ever married	2788	40.7
Born in Afghanistan	5722	83.5
Ever lived outside Afghanistan	4291	62.7
Afghan National Army recruits	4750	69.4
Afghan National Police trainees	2099	30.6

- Nearly one-fifth (16.4%) had been incarcerated for a mean period of 3.5 months.
- Of those previously sexual active (60.7%, N=4158), 25.5% (N=1059) reported engaging female sex worker services, 23.8% (N=990) reported sex with other males, while only 13.5% (N=561) reported previous condom use.

Table 2. Seroprevalence of HIV, syphilis, HSV-2, and hepatitis B and C among Afghan National Security Force recruits, February 2010 – January 2012.

Pathogen	Number Tested	Number Infected	Prevalence	95% Confidence Interval
HIV	6849	3	0.044%	0.009 – 0.12
Herpes Simplex Virus 2	6849	191	2.79%	2.40 – 3.21
Hepatitis C Antibody	6849	50	0.73%	0.54 – 0.96
Syphilis	6849	33	0.48%	0.33 – 0.68

- In multiple logistic regression analysis stratified by service branch, HSV-2 infection was independently associated with prior incarceration (Adjusted Odds Ratio (AOR)=1.96, 95% CI: 1.02 – 3.76) and, marginally, marijuana use (AOR=1.89, 95% CI: 0.99 – 3.63) for ANP trainees and with having a television (AOR=1.46, 95% CI:1.03 – 2.05), age (AOR=1.04, 95% CI: 1.00 – 1.09), and, marginally, alcohol use (AOR=1.69, 95% CI: 0.95 – 3.01) with ANA recruits.

Conclusions

- Though prevalence of HIV, syphilis, HCV, and HSV-2 are low, risk behaviors are relatively common and potential for transmission concerning given association between HSV-2 and intoxicant use.
- ANA policy denying entry to HIV-positive conscripts cannot be enforced without testing or disclosure. However, very low prevalence argues against cost of compulsory screening.
- Behavioral intervention to effect risk reduction integrated into Afghan National Security Forces training is urgently needed

References:

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Acknowledgements:
We wish to thank the Ministries of Defense, Interior, and Public Health of the Islamic Republic of Afghanistan for their support, Ms. Amy Mikhail and Mr. Rohullah Zekria for laboratory service support, and our field staff for their diligent work. This study was funded by the Walter Reed Army Institute of Research. The opinions and assertions made by the authors do not reflect the official position or opinion of the U.S. Department of the Navy or Army, or of the respective in-country National HIV/AIDS Control Programmes and other Non-Governmental Organizations (NGOs).