



HIV/AIDS and the Military in Sub-Saharan Africa: Control Through Innovative Stress Management Approaches

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Abstract

Globalization, warfare, poverty, and violence against women (Peterman et al., 2011) have contributed to the increasing epidemic of HIV infection and AIDS, especially in the relatively poor countries of Sub-Saharan Africa. Two-thirds of all people infected with HIV live in Sub-Saharan Africa; however, this region contains approximately 10 percent of the world's population (UNAIDS, 2008). An important contributing factor to the increasing prevalence of HIV/AIDS in the region, and one that is of primary interest to this paper, is stress. It is reasoned that stress (e.g., fear of death, loneliness, deployment jitters) plays an important role in making soldiers vulnerable to engage in at-risk (sexual) behaviors that further puts them at risk to contract HIV and, later, AIDS. A Sociopsychophysiological Model is used as a conceptual guide to assess the stress-



HIV/AIDS connection, as well as ways to intervene to improve the stress-HIV-AIDS connection in the military in Sub-Saharan Africa.

Key Words

Stress

HIV-AIDS

Sub-Saharan Africa

Military

Stress Inoculation Therapy

Introduction

The forces of globalization have produced many changes in the world. These forces have contributed to cultural and ethnic conflicts changes, political changes, and changes in health standards and conditions (DeVogli, 2004). Nowhere are these changes more prevalent than in the lives of people living and fighting in the extremely poor countries of Sub-Saharan Africa. This region of the world, apart from experiencing extreme poverty and violence (Peterman et al., 2011), has many endemic health challenges (such as HIV/AIDS) and the overall prospect is extremely daunting if some sustainable changes are not introduced to sectors of these societies that are at risk to experience stress and, therefore, engage in further at-risk behaviors that can contribute to the epidemic of HIV/AIDS. Therefore, of particular interest to this paper is the role stress plays in the health outcomes, especially HIV/AIDS, of the militaries in Sub-Saharan African countries.

The precursor Human Immune Virus (HIV) and the devastating Acquired Immune Deficiency Syndrome (AIDS) disease are both regarded as pandemics. Because of the close feeder relationship between these two conditions, and with some exceptions, for



purposes of this paper, both conditions will be collectively referred to as HIV/AIDS. Nowhere is this devastating disease more widely spread, and its consequences more severe, than in the countries that comprise Sub-Saharan Africa or SSA.

Ultimate control of HIV/AIDS requires a multifaceted approach involving many contributing factors. For purposes of this paper, the important role stress plays in HIV/AIDS epidemic relationship is presented as evidence that if stress can be more effectively managed through, for example, using health education involving stress management techniques that are culturally and regionally specific, especially in the armed forces of Sub-Saharan Africa, this in turn will contribute a great deal to more effective control of HIV/AIDS in the relatively poor countries in the region.

HIV/AIDS in Sub-Saharan Africa – An Overview: The Prevalence of HIV/AIDS in Sub-Saharan Africa

It has been estimated by UNAIDS, which is an umbrella group for five U.N. agencies, the World Bank and the World Health Organization that 34.3 million people in the world have AIDS, and 24.5 million of these AIDS cases reside in sub-Saharan Africa. Additionally, 19 million have died from AIDS, 3.8 million of these cases were children under the age of 15 (UNAIDS, 2008). Estimates as of December 2005 indicate that approximately 24.5 million people are living with HIV in Africa, which accounts for 64 percent of all people living with HIV in the world (USAIDS, 2006). During recent years, the use of antiretroviral (ARV) drugs in the United States and other developed countries has dramatically reduced AIDS death rates, but until now, only a small proportion of AIDS patients in SSA have received treatment (WHO, 2005; UNAIDS, 2004) (See Figure 1).

Figure 1 goes about here



While the adult national HIV prevalence is below 2 percent in several countries of West and Central Africa, as well as in the horn of Africa, in 2007 it exceeded 15 percent in seven southern African countries (Botswana, Lesotho, Namibia, South Africa, Swaziland, Zambia, and Zimbabwe), and was above 5 percent in seven other countries, mostly in Central and East Africa (Cameroon, the Central African Republic, Gabon, Malawi, Mozambique, Uganda, and the United Republic of Tanzania) (UNAIDS, 2008). Heterosexual intercourse remains the epidemic's driving force in sub-Saharan Africa. The high rate of sexual transmission has also given rise to the world's largest population of children living with HIV. However, recent epidemiological evidence has revealed the region's epidemic to be more diverse than previously thought (UNAIDS, 2008).

Consequences of HIV/AIDS in Sub-Saharan Africa: a Focus on the Military

At the last regional and international conference entitled, "HIV and AIDS and the African Military: Towards a Common and Comprehensive Approach," which was held in Jinja, Uganda, March 11-13, 2009, the importance of and urgency to address the crisis of HIV/AIDS in the armed forces of Sub-Saharan countries, henceforth to be simply referred to as the military or armed forces. More specifically, one of the several recommendations made at the conference was to "stress that the goal is to evolve a Common and Comprehensive African Approach to HIV and AIDS (CCAAHM) pandemic in the military" (HIV and AIDS Policy Fact Sheet, 2006) by focusing on eight basic points.

The Prevalence of HIV/AIDS in the Military



It has been said (HIV/AIDS and the Military, 2010) that the HIV infection rates in the in the military are difficult to ascertain, because they either do not exist, or governments cite national security reasons for not disclosing this information. While the HIV prevalence rate in the military has been believed to be relatively high, it is also believed by some that these rates are based on old information and not on more recent information (Essa, 2008). Based on estimates by the U.S. National Intelligence Council (NCI, 2000), HIV prevalence in the militaries of several Sub-Saharan African nations ranges from 10 to 60 percent. However, estimates often differ depending on the source.

Given the focus of this paper, the intent is not to choose which side is more correct in estimating the prevalence of HIV/AIDS in the military. Instead, the assumption made in this paper is that the armed forces associated with the countries of Sub-Saharan Africa do indeed have a sufficiently high enough prevalence of HIV/AIDS for it to be a concern and, therefore, a need exists to control this disease.

Military-Related Duties and Consequences

Unfortunately, war (which is a frequent experience in SSA) is an instrument for the spread of HIV/AIDS (Fourie, 2001). According Chalk (2000), “History has revealed time and time again that the three Horsemen of the Apocalypse – Famine, Pestilence and War – often gallop together.” This statement is unfortunately very true, as in the case of SSA, where all three conditions, by the very nature of their constant presence, seem to be endemic to the region.

As reported by Fourie (2001), the U.N. Program on AIDS (UNAIDS) warns that military conflict ushers in economic and social dislocation, including the movement of



refugees and internally displaced persons, which in turn contributes to loss of livelihoods, separation of families, collapse of health services and dramatically increases instances of rape and prostitution. All these conditions create conditions for the rapid spread of HIV and other infectious diseases (Fleshman, 2001).

The Complex Relationship of Stress to HIV/AIDS and the Importance for the Military

While several factors can account for the devastating rise of the HIV/AIDS epidemic in Sub-Saharan countries in general, and more particular in the armies of these countries, the selected focus of this paper is on the role stress plays (direct or otherwise) in either initiating the epidemic and/or making it worse. The high prevalence and consequences mentioned before associated with the HIV/AIDS epidemic in these countries in Sub-Saharan Africa all but beg for some swift and sustainable methods to control the problem. Because HIV is spread predominantly via lifestyle and behavioral heterosexual means, more so in Africa (Livingston, 1993), the pragmatic course of action must involve vulnerable individuals (e.g., military personnel) changing their at-risk behaviors (e.g., having unprotected sex when deployed in regions outside of their home countries), which has been discussed earlier in the paper as resulting from various stressors the soldiers may envision and/or encounter (e.g., loneliness, fear of combat, fear of death, the harsh realities of war).

The Biopsychosociocultural Explanation of the Stress-HIV/AIDS Relationship

It has been said (Population Reports, 1989, p.1), that in the absence of a vaccine for curing AIDS, communication strategies represent a key “social vaccine” against HIV/AIDS. In a related manner, Singhal and Rogers (2003) said that “communication is a necessary, but not a sufficient, condition for preventing HIV/AIDS, and for augmenting



care and support programs” (p. 206). Interestingly enough, these authors proposed the use of “entertainment-education,” which is defined as a systematic strategy of designing and implementing a socially beneficial message that is both entertaining and educational in order to increase knowledge of an issue, create favorable attitudes, or change overt behavior (Brown & Singhal, 1999; Singhal & Rogers, 1999). In this paper, the “social vaccine” is stress management and how it is implemented using health education techniques. These techniques could very well incorporate aspects of “entertainment-education,” which could determine the ultimate success of the Program for the target group in question.

Following previous reports (e.g., Livingston, 1988, 1992, 1993), any meaningful attempt to explain the stress-HIV/AIDS relationship has to include mentioning the multifaceted aspects of the relationship, which includes biology, psychology, social and cultural factors, hence the use of the biopsychosociocultural label in the relationship. See Livingston 2004 for a further explanation of this view using a Sociopsychophysiological Model (SPPM) of stress (see Figure 2). Also, while a more thorough discussion of the SPPM is beyond the immediate scope of this paper, only certain portions will be alluded to in order for the reader to get a better picture as to: a) how stress is defined in an interactive manner, b) the importance of the discrepancy between demands or stressors and the resource capabilities of the individual, c) the sequential pathways of stress from onset, reactions and outcomes, and d) lastly, the absolute importance individuals’ (or soldiers’) Sociopsychophysiological Resource Center (or SRC), which is essentially where stress and resiliency are cultivated and



maintained in face of stressors or demands and available resources. Again, see Livingston (2004) for a greater explanation of the of the SPPM.

(Figure 2 goes about here)

Based on how stress is illustrated in Figure 1, the following operational definition is offered for the purposes of better understand the relationship to the military's stress-related at-risk (sexual behavior, combat fears, etc.) and, ultimately, the possibility of contracting HIV and AIDS later on in the evolutionary phase of the disease. *"Stress, which is an internal psychological and physiological reaction, occurs when there is a perceived discrepancy between demands or stressors placed on us and our perceived or real resource capabilities to meet these demands..."* (Livingston, 2004, p.7). Of particular interest to the position taken in this paper is the following possibility: When individuals, or soldiers, are experiencing stress (either real and/or anticipatory) they may engage in at-risk behaviors (e.g., unprotected sex), which will (along with a possible concurrent compromised immune system) lead to HIV infection and, possibly, over time, AIDS.

At-Risk Potential Stress-Related Experiences for the Military and the Implications for HIV/AIDS

HIV is a multifaceted virus, emerging and spread in varying contexts. It is also very important to note that in Africa HIV/AIDS is spread mainly through contact with body fluids, as a result of heterosexual relations versus homosexual relations (Livingston, 2003). This mode of contact and dispersion of HIV/AIDS is very germane to the military and their at-risk status for contracting the disease. The willingness of soldiers to wear condoms, as well as their governments to periodically test for sexually



transmitted diseases (or STDs) in general and HIV/AIDS in particular is very dynamic and problematic (Sarin, 2003).

Military personnel face all of societal challenges, which inadvertently place them at the top end of high risk populations, together with truckers, miners and sex workers. What makes military personnel especially at risk is the amount of *time spent away from home, stressful and difficult conditions* and, believe it or not, *boredom* and lack of entertainment that inadvertently provide military personnel, armed with financial resources, to wander off for sexual escapades. However, the difference between military personnel and the other high risk populations is essentially the crucial factor of secrecy that comes with being part of the military (Essa, 2008). According to Sarin (2002), emotional stress, boredom and loneliness have long led soldiers to engage in casual sex with civilians or pay for commercial sex.

The increase vulnerability for soldiers to contract HIV then, is a result of:

- a) loneliness, especially when soldiers are deployed away from home (Sarin, 2003);
- b) the military training and way of life, i.e., trained to be aggressive and take risks (Brown, Fraser & Kiruswa, & Fraser, 2009); and c) being youthful, which makes them more sexually active (Brown, Kiruswa, 2004). Studies have also underscored how distance from home (possible stressor), view of the military by the close proximity of the “available” female, civilian population (e.g., prostitutes) contribute to the soldiers’ risky sexual behaviors being actualized.

Based on how stress is defined in this paper, as well as how stressors were discussed in the context of the Sociopsychophysiological Model seen in Figure1, all of these factors, such as the sex workers (external stressors/demands - see Figure 2), the youthful age of the soldiers, the military training that breeds risk taking and



aggressiveness, and need to be with sex workers for sex (internal), are all forms of stressors, which can have disastrous consequences for HIV/AIDS in this military population. As a result of how the stress-HIV/AIDS relationship was presented, what follows in the next section is how to use innovative stress management approaches, or ISMAs (i.e., Stress Inoculation Training or SIT), through the vehicle of health education to control (or reduce) the stress the military experience, which, can lead to HIV/AIDS.

Stress Management Approaches to Control HIV/AIDS in the Military

The position taken in this paper is that while many approaches have been used in combat HIV/AIDS in the military in Sub-Saharan countries these efforts are not as successful and sustainable because they lack a theoretical approach to the actions taken. These approaches have to be practical, culturally sensitive and thoroughly preventive in nature. However, some programs to reduce HIV/AIDS in select countries have had some success, but their eventual relative failure is due, in part, to some of the limitations mentioned above. It has been said (Essa, 2008), for example, that certain defense forces, like the Namibian Defense Force developed a HIV/AIDS strategic plan 2004-2009, which focuses on prevention all the while aiming to the force's ability to provide care, treatment and support services.

Reducing the Stress-HIV/AIDS Connection: The Importance of Stress Inoculation Training (SIT)

As defined earlier, and as depicted in Figure 2, stressors lead to stress and stress occurs when there is a perceived discrepancy between the demands placed on an individual (or soldier) and the accompanying resources that are available to meet these demands. For soldiers, there are a variety of stressors or demands that run from loneliness to the threat of being harmed or worst, death itself. As seen in Figure 2 and



3, what is advocated in this paper is a theoretically backed approach, where health education via stress inoculation training (SIT) is initially given to the soldiers at the onset of their training, say in boot or training camps, some form of SIT when they are deployed, and some form of SIT when they return home to their respective countries.

As seen in Figure 3, the emphasis is on impacting soldiers' Sociopsychophysiological Resource Centers, or SRC (see Figure 2), which is the "core" area where beliefs, attitudes and, therefore, perception are all derived (Livingston 2004). If this kind of ongoing health education approach using SIT is continuously conducted with new, deployed, and returning soldiers, it is reasoned that, holding other related factors constant, soldiers when deployed will be able to be in better control of their stressors, which in turn will result in less need to engage in at-risk sexual behaviors and less threat of contracting HIV/AIDS. It was also said before that the success of these SIT sessions will have to be theoretically driven, given that research tells us how, in this case, soldiers are likely to operate in the field when they are under stress.

According to the Theory of Cognitive Appraisal (TCA) (Lazarus and Folkman, 1984), the reaction in a threatening situation will be the result of an interaction between the interpretation of the situation (primary appraisal) and the interpretation of coping possibilities (secondary appraisal), in which the possibilities of coping with the threat and the outcome expectancies are assessed. Furthermore, people (soldiers) who appraise a situation as threatening show more inadequate affective reactions, such as negative emotions, than others who appraise the situation as challenging (Gaillard, 2003; Tomaka et al., 1997). Given the uncertainty of war, individuals (soldiers) must be



taught how to deal with ambiguity, which can lower the levels of perceived control (Salas et al., 1996).

How is the Stress Inoculation Training to be Conducted with the Military?

Because of space limitations, a more detailed explanation (see Povovic et al., 2009) to this question is beyond the immediate scope of this paper. However, building on the Theory of Cognitive Appraisal (Lazarus and Folkman, 1984 mentioned before), as well as the directional models illustrated in Figure 1 – see Livingston, 2004) and the specially created Figure 3 for this paper, specific information will be presented in this last section of the paper that will suffice to demonstrate the importance of SIT in potentially reducing the militaries in Sub-Saharan Africa from contracting HIV/AIDS through at-risk sexual and other negative practices.

(Figure 3 goes about here)

Mental readiness training (Thompson and McCreary, 2006), which builds on SIT (Meichenbaum, 1996), is one aspect of the need to exercise the importance of mental care for military personnel, where the emphasis is on making individuals more resilient to the adverse psychological consequences (e.g., fear, loneliness) of combat (Popovic et al., 2009). Basically, SIT attempts to improve stress resistance by training a set of skills that essentially make individuals (soldiers) capable of responding more positively when confronted with stressors (e.g., fear of battle, loneliness) in life (or in battle). According to Thompson and McCreary (2006), SIT is viewed as a flexible individually tailor-made multifaceted form of cognitive-behavior therapy. SIT has been successfully used in a variety of setting where high levels of stress are experienced by various professional groups (Meichenbaum, 2007).



As illustrated and seen in Figure 3, health education will be the vehicle through which culturally sensitive and appropriate information (e.g., what to do when feelings of loneliness come over you? What is health education? Although it has been defined by many authors in the past, the succinct definition that follows will suffice. *“Any combination of learning experiences designed to facilitate voluntary adaptations of behavior conducive to health”* (Green et al. 1980, p.7). What to do when you have great fears just before going into battle? What to do and how to think when you see death and destructions related to war all around you? Based on the “core” area of change, or the SRC,” as depicted in Figure 2, all this information is primarily directed to increasing the strength and resiliency of soldiers’ SRCs. Ultimately, the focus of the SIT has to be with soldiers when they are training to be eventually deployed to the war zones in other countries, for example in Boot camps.

Again as seen in Figure 3, and exposed by Meichenbaum (1966), this three phase delivery of the SIT is needed for it to have its maximum effect. It would be strongly advised that the information in the three related phases for the soldiers at Boot camp follow the suggested format suggested by Meichenbaum (1966).

“In the initial, conceptualization phase the trainees receive stress education, including explanations regarding the nature and effects of stress, etc. In the second phase of SIT, related to skill acquisition and rehearsal, the trainees learn the stress coping skills and acquire them through repeated practice. The third and final phase of SIT entails the trainees’ application of the acquired stress coping skills over a sequence of increasingly intense stressful experiences relevant to their real-life situation.” (e.g., loneliness, fear of death, fear of combat) (Popovic et al., 2009, p. 51).



Based on the results mentioned above, the phased method is advocated as the means to inculcate soldiers' with SIT. As seen from Figure 3, it is proposed that when the soldiers are deployed and when they return home, that some selected portions of the phased SIT be given to soldiers. The rationale for this suggestion is that this information will serve to reinforce the valuable information soldiers learned at the onset in Boot camp, which they will carry with them always as a constant reminder that stressful experiences can be "controlled," thereby making the likelihood of engaging in at-risk behaviors (such as unprotected sex with prostitutes) a very remote possibility for soldiers from Sub-Saharan countries in Africa. In turn, if these practices are followed and repeated as suggested, it is reasoned that, with time, the explosive incidence of HIV/AIDS in the countries of Sub-Saharan Africa can be curtailed.

Conclusion

Controlling HIV/AIDS will require a comprehensive, multi-focused and multinational approach that is culturally sensitive and appropriate to the cultural and social practices, political reality and financial resources of the region. While these efforts can be focused on a wide number of individuals and groups in Sub-Saharan Africa, as argued in this paper, given the stress-HIV/AIDS relationship, and given the "vulnerability" of soldiers in the region, the focus must include the military, because they are prone to engage in stress-producing at-risk behaviors that will put them at risk for contracting HIV/AIDS. Because the potential stress-HIV/AIDS relationship is extremely complex and multifaceted, any attempt to meaningfully address this relationship must have a theoretical model for a guide in understanding: a) the dynamics of stress, b) the relationship between stress and health outcomes (such as at-risk sexual behaviors that put soldiers at risk for contracting HIV), and c) how best to intervene to reduce the



stress-HIV/AIDS relationship among the military. One such model discussed in the paper was the Sociopsychophysiological Model or SPPM. Additionally, without the SSP as a guide, which brings to bare culturally sensitive and culturally appropriate approaches (see Figures 2 and 3), there will be no sustained improvements in ultimately controlling HIV/AIDS in the military in Sub-Saharan Africa and, therefore in the at-risk wider population of the region.

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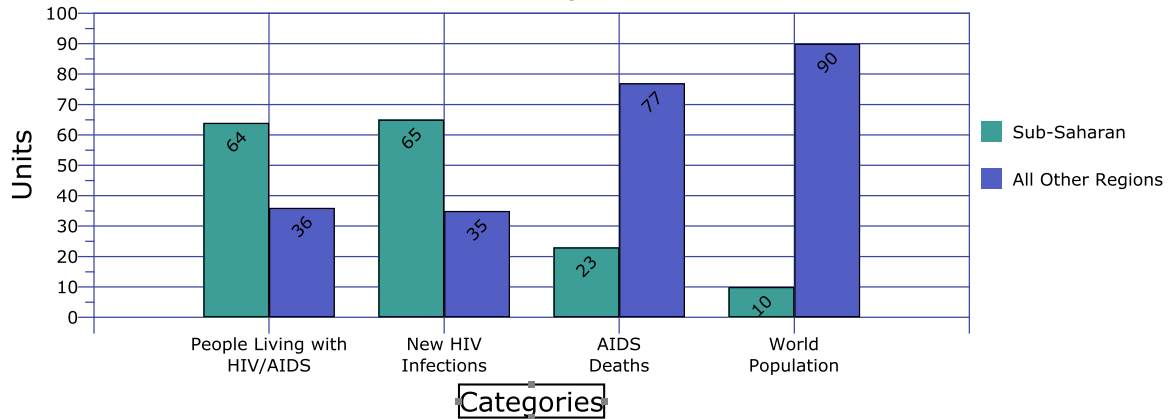
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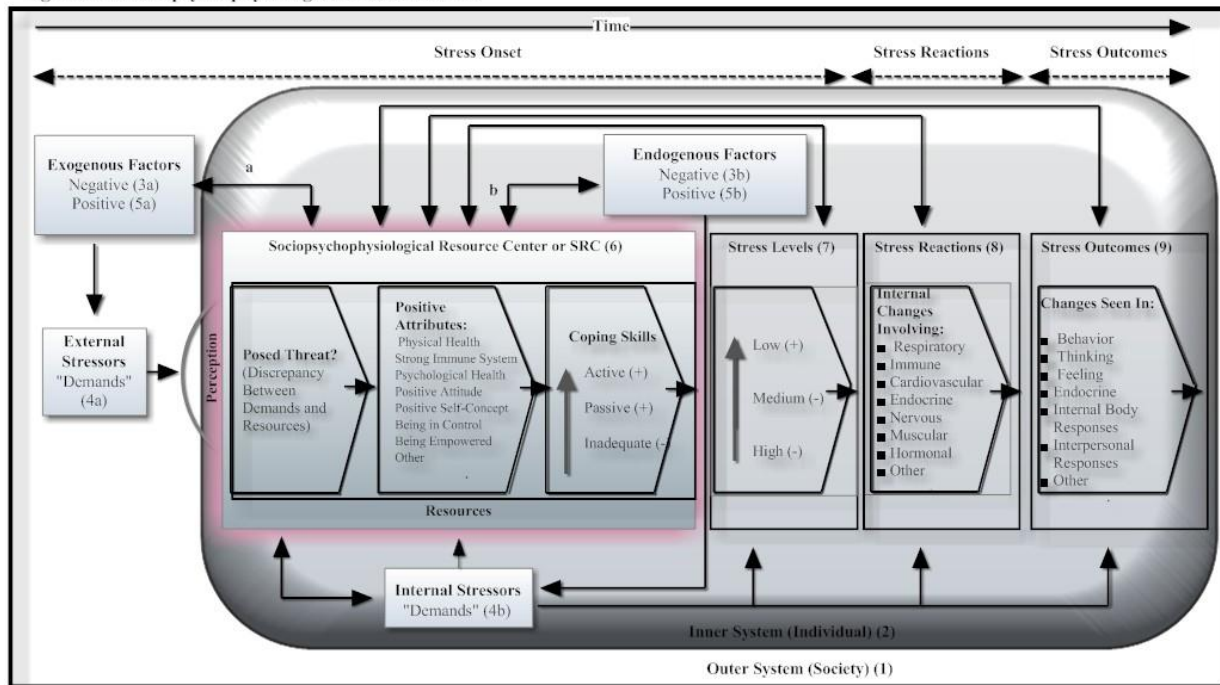


Figure 1: Sub-Saharan Africa as a Percent of the Global HIV/AIDS Epidemic, 2005



Source: UNAIDS, 2005; Population reference Bureau, 2005 (Modified to fit paper).

Figure 2: A Sociopsychophysiological Model of Stress



Note: This model is a further modified version that last appeared in the following publication: Livingston, L.L., et al. (2004). Vulnerability of African Americans to Adverse Health: The Importance of Social Status and Stress. (Pp. 383-410). In L.L. Livingston (Ed.), Praeger Handbook of Black American Health. Westport, CT, Praeger. a = External conditions in society contributing to the functioning of the SRC; b = Internal factors within the individual contributing to the functioning of the SRC; Bidirectional arrows reflect the reciprocal nature of designated elements in the model.



Figure 3: How Stress Inoculation Training (SIT) Can be Introduced to Reduce the At-Risk Experiences of Sub-Saharan Military to Contract HIV/AIDS

