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# Sexual Exposure to Blood and Increased Risks for Heterosexual HIV Transmission in Cape Town, South Africa

Seth C Kalichman<sup>a</sup> and Leickness C Simbayi<sup>b</sup>

## ABSTRACT

A total of 224 men and 276 women living in a Black township in Cape Town, South Africa, were interviewed using a structured questionnaire. Information was elicited on demographic characteristics and sexual behaviours over the three months preceding the interview including engaging in sexual contact that involved blood, lifetime history of STI diagnoses and STI symptoms, and HIV prevention knowledge. Thirty six per cent of the men and 28% of women experienced sexual contact involving blood in the past three months. Sexual blood contact was associated with the number of sex partners, unprotected intercourse and sexually transmitted infections. Sexual exposure to blood is prevalent and may be a facilitating factor for HIV transmission in South Africa. Modern medical care providers as well as traditional healers should be encouraged to advise their clients to refrain from sexual intercourse during menstruation and other types of genital bleeding. (*Afr J Reprod Health* 2004; 8[2]: 55–58 )

## RÉSUMÉ

**Exposition sexuelle au sang et au risque accru pour la transmission du VIH hétérosexuel.** Au total, 224 hommes et 276 femmes domiciliés dans un quartier noir à Cape Town, Afrique du Sud, ont été interviewés à l'aide d'un questionnaire structuré. Nous avons recueilli des renseignements sur des caractéristiques et des attitudes sexuelles au cours de trois mois précédant l'interview y compris l'engagement à l'acte sexuel qui implique le sang, des antécédents des diagnostics et des symptômes des MSTs et la connaissance de la prévention du VIH. Trente-six pourcent des hommes et 28% des femmes ont eu au cours des trois mois, des contacts sexuels qui impliquaient le sang. Le contact sexuel sanguin a été lié au nombre de partenaires sexuels, des rapports sexuels non-protégés et les infections sexuellement transmissibles. L'exposition sexuelle au sang est prévalente et peut être un facteur qui rend facile la transmission du VIH en Afrique du Sud. Les prestataires du soin médical moderne aussi bien que les médecins traditionnels doivent être encouragés de conseiller à leurs clients d'éviter les rapports sexuels pendant la menstruation et d'autres types d'hémorragie génitale. (*Rev Afr Santé Reprod* 2004; 8[2]: 55–58 )

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KEY WORDS: *HIV/AIDS, heterosexual transmission, South Africa, genital bleeding*

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## Introduction

The explosive HIV/AIDS epidemic in South Africa is primarily the result of heterosexual HIV transmission. However, factors that account for the rapid spread of HIV in South Africa have not yet been elucidated. Among factors that are known to increase HIV infection throughout sub-Saharan Africa are co-occurring sexually transmitted infections (STIs). Genital ulcers are of particular concern for HIV transmission because of increased access of HIV to the bloodstream and because of increased exposure to macrophages and other cells expressing HIV receptor sites.<sup>1</sup> Degradation of mucous membranes and bleeding that can result from sexual trauma can also be a source of genital bleeding during sexual activity.

Another important, although less studied, co-factor for HIV transmission risk is sexual activity during menstruation. Women are more vulnerable to STI during their menstrual period because of changes in the cervix, retrograde menstrual blood flow and changes in vaginal micro-environment.<sup>2,3</sup> The presence of blood during sexual intercourse occurring with menses also facilitates heterosexual transmission of HIV from women to men.<sup>4</sup> One in four women may engage in vaginal intercourse during menses, increasing theirs and their partner's risks for STI/HIV infection.<sup>2</sup> Sexual activity during genital bleeding is therefore a risk factor for promoting heterosexual HIV transmission. However, few studies have examined the prevalence of sexual activity in the presence of blood in South Africa beyond that attributable to genital ulcer. The present study was conducted to provide initial data on the rates of sexual exposure to blood in a community sample of men and women living in urban Cape Town.

## Methods

The study included 224 men and 276 women living in a Black township in Cape Town, South Africa. Their median age range was 21–25 years. Sixty seven of them were married, 52%

completed high school, and 61% were not employed. They were recruited from multiple locations in a township located within 50km to Cape Town.

The study participants were approached at any one of 12 locations within the township. These included a day hospital (9%), health clinics (20%), shops and vendors (11%), bus stops (19%), street junctions (28%), and social congregating areas (13%). Participants were approached by a field worker and asked whether they would spare a little time to answer an anonymous questionnaire. All potential participants at a particular location were approached and 90% agreed to complete the questionnaire. All persons who agreed to participate were able to complete the questionnaire by themselves with minimal assistance. Participants received 15ZAR (US\$1.75) to compensate for their time.

The questionnaire was administered in both English and Xhosa languages. It elicited information on demographic characteristics, sexual behaviours assessed over the previous three months including engaging in sexual contact that involved blood, lifetime history of STI diagnosis and symptoms, and HIV prevention knowledge. Detailed descriptions of the study sample, survey methods and instruments can be obtained elsewhere.<sup>5</sup>

Analyses were conducted to compare individuals who reported engaging in sexual activity that involved blood contact to individuals who did not in the past three months. All of the comparisons controlled for participants' gender, age, educational level, marital status and venue of interview. However, for analyses that compared individuals who did and did not engage in sexual activity involving blood with respect to history of STI diagnosis we also controlled for frequencies of unprotected vaginal and anal intercourse as well as numbers of sexual partners. These additional co-variables provided a more conservative test of the association between sexual exposure to blood and history of STIs.

## Results

Results show that 81 (36%) men and 76 (28%) women had experienced sexual intercourse involving blood contact in the three months preceding the study. Among those who had sexual contact involving blood, 81 (52%) engaged in such act once or twice, 53 (34%) had three to five experiences, while 23 (14%) had sexual contact involving blood six or more times. Comparisons on demographic characteristics indicated that having sex involving blood was more common among men than women ( $p < 0.05$ ). In addition, it was more common for

younger persons, married persons and persons with higher educational levels to report sex involving blood contact ( $p < 0.05$ ). There were no differences between groups in employment status or scores on the AIDS knowledge test (all mean scores over 80% correct).

Respondents who reported having sexual contact involving blood significantly had higher numbers of sexual partners and significantly higher rates of unprotected vaginal and anal intercourse than those not reporting blood contact over the same period. This was after controlling for participant's gender, age, educational

**Table 1** Sexual Risks among Men and Women who had and did not have Sexual Intercourse with Exposure to Blood in the past Three Months

	Men				Women				Adjusted p OR	
	No sex with blood		Sex with blood		No sex with blood		Sex with blood			
	N	%	N	%	N	%	N	%		
<i>Number of sex partners<sup>a</sup></i>										
0	12	9	1	1	28	14	2	3		
1	43	30	25	31	133	68	43	57		
2-3	73	51	47	58	29	15	23	30		
4+	14	10	3	10	5	3	8	10	1.3	0.01
<i>Unprotected vaginal intercourse<sup>a</sup></i>										
0	39	27	9	11	70	36	6	8		
1-2	61	43	12	15	67	43	10	13		
3-5	14	10	14	17	22	11	16	21		
6-10	7	5	13	16	14	7	16	21		
11-20	10	7	14	17	6	3	15	20		
21+	11	4	9	11	16	9	13	18	10.9	0.01
<i>Unprotected anal intercourse<sup>a</sup></i>										
0	131	93	65	80	186	96	60	79		
1-2	3	2	5	6	4	2	11	15		
3-5	2	1	7	8	1	1	3	4		
6+	5	4	4	5	3	2	2	2	29.0	0.01
Genital ulcer <sup>b</sup>	10	7	16	20	23	12	20	28	2.7 <sup>c</sup>	0.01
Genital discharge <sup>b</sup>	84	59	65	81	101	52	42	58	1.3 <sup>c</sup>	ns
Genital pain/burning <sup>b</sup>	63	44	35	44	89	46	29	40	0.7 <sup>c</sup>	ns
Diagnosed with an STI <sup>b</sup>	57	40	40	50	40	21	37	51	2.9 <sup>c</sup>	0.01

Note: Adjusted OR = Odds ratios adjusted for respondents' gender, age, education level, marital status and survey location

<sup>a</sup>Numbers of partners and rates of behaviors in the past three-months

<sup>b</sup>Lifetime history.

<sup>c</sup>Odds ratio adjusted for respondents' gender, age, educational level, marital status, survey location, number of sex partners in the past three months and rates of unprotected vaginal and anal intercourse in the past three months.

level, marital status and interview venue. Analyses further showed that participants who experienced sexual blood contact were significantly more likely to report a lifetime history of genital ulcers. The differences for genital discharge and genital pain/burning were not significant. After controlling for gender, age, educational level, marital status, interview venue, as well as numbers of sexual partners and rates of unprotected vaginal and anal intercourse, analyses indicate that individuals who engaged in sexual intercourse involving blood were nearly three times more likely to have a lifetime history of STI (Table 1).

## Discussion

The current findings indicate an alarmingly high prevalence of sexual activity involving exposure to observable quantities of blood among men and women recruited in a community sample. Similar to previous research conducted in US STI clinics, sexual activity in the presence of blood was closely associated with higher rates of sexual activity, history of STI, and was more prevalent among married persons and individuals with higher education.<sup>2</sup> Although our survey was unable to identify the source of blood during sex, the increased vulnerability as well as increased exposure to HIV is well known across potential sources of genital bleeding. Because only 20% of men and 28% of women who reported sexual blood exposure also had a history of genital ulcers, other sources of blood such as menses, sexual trauma, dry sex practices, incomplete or unhealed circumcision, etc, likely account for the majority of blood-exposing events during sex.

Further research is needed to replicate these findings and to identify the sources of sexual contact involving blood. HIV prevention messages in South Africa must continue to emphasise the importance of identifying and treating STIs. Prevention messages should also emphasise the importance of abstaining from sex during menses and other forms of genital bleeding.

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## REFERENCES

1. Latif AS, Katzenstein DA, Bassett MT, Houston S, Emmanuel JC and Marowa E. Genital ulcers and transmission of HIV among couples in Zimbabwe. *AIDS* 1989; 3: 519–523.
2. Tanfer K and Aral S. Sexual intercourse during menstruating and self-reported sexually transmitted disease history among women. *Sex Trans Dis* 1996; 23: 395–401.
3. Yeaman G, Howell A, Weldon S, Demian J, Collins J, O'Connell D, Asin S, Wira C and Fanger M. Human immunodeficiency virus receptor and co-receptor expression on the human epithelial cells: regulation of expression during the menstrual cycle and implications for human immunodeficiency virus infection. *Immunology* 2003; 109: 137–146.
4. De Vincenzi I. Longitudinal study of human immunodeficiency virus transmission by heterosexual partners. *N Engl J Med* 1994; 331: 341–346.
5. Kalichman S and Simbayi L. HIV testing attitudes, AIDS stigmas and voluntary HIV counselling and testing in the Western Cape, South Africa. *Sex Trans Infect* 2003; 79: 442–447.