

A survey of risk behaviour for contracting HIV among adult psychiatric patients.

A South African study - Part 1

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Abstract

Objective: Various studies have reported increased prevalence of HIV infection among psychiatric patients. Psychiatric patients are under-evaluated in terms of their HIV risk behaviour. The study sought to establish the prevalence of HIV risk behaviour and determine the association between risk behaviour and demographic and clinical variables. **Method:** Participants were 113 consenting adult in-patients. A structured interview was conducted with each participant. A total risk behaviour score was calculated. From the risk score, three risk behaviour categories were identified: 0 = no risk; 1 to 3 = medium risk; 4 to 9 = high risk. Associations between HIV risk behaviour and demographic and clinical variables were analysed. **Results:** Of the 113 participants, 68% were men and 32% women. The mean age was 38. Forty-five per cent were sexually active and 48% fell into the "no-risk group", 29% in the "medium-risk" group, and 23% in the "high-risk" group. Female patients with a history of treatment for sexually transmitted disease and a diagnosis of personality disorder were associated with being sexually abused. Having multiple sex partners was associated with diagnoses of substance-related disorders and cognitive disorders. Sex with someone known for less than 24 hours was associated with long-term hospitalisation and diagnoses of cognitive and personality disorders. **Conclusion:** The study confirmed that mentally ill patients are vulnerable and may be victimised. The study also suggests that mental illness may impair appreciation of consequences and lead to high-risk behaviour for contracting HIV. Special care should be taken to protect female patients in psychiatric institutions.

Keywords: Mental illness; Psychiatric patients; HIV risk behaviours; South Africa

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Introduction

The estimated number of people living with HIV worldwide in 2007 was 33.2 million.¹ Sub-Saharan Africa remains the most affected region in the global AIDS epidemic. More than two thirds (68%) of all people who are HIV-positive live in this region, where more than three quarters (76%) of all AIDS-related deaths in 2007 occurred. South Africa is the country with the highest percentage of HIV infections in the world.¹

The prevalence of HIV infection among psychiatric patients has been reported to be higher than in the general population in

studies done between 1992 and 2008.²⁻⁶ In a study carried out in 2002 in KwaZulu-Natal in South Africa, the prevalence of HIV infection among psychiatric in-patients was 29.1%.⁷

Several factors are responsible for the increased risk of HIV infection in psychiatric patients. The symptoms of various mental illnesses, such as impaired reality testing, impaired appreciation of the consequences of one's behaviour, affective instability, low levels of impulse control, suicidal intent and self-destructive behaviour may lead patients to engage in HIV-related risk behaviour.² Sexual behaviour such as intercourse with prostitutes and unprotected sex is not uncommon in mentally ill patients. Several studies have shown that mentally ill patients have a high prevalence of HIV risk behaviours, and such risks include having multiple partners, having unprotected sex, trading sex for money or drugs, having sex with risky partners (intravenous drug users and sex workers, for example) and substance abuse.^{2,5,8,9,10}

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While several studies have documented the co-morbidity of psychiatric disorders with substance abuse, alcohol and illicit drug use have been shown to be associated with unsafe sex and risk-taking behaviour in both HIV-negative- and positive subjects.² Furthermore, mentally ill patients are socially disadvantaged, marginalised, stigmatised, vulnerable and are easily victimised by individuals who may expose them to HIV infection (e.g. by unwanted sexual advances, prostitution or even sexual violence).²

Much information is now available regarding the so-called 'high-risk' groups – in particular, homosexual people and intravenous drug users. Although psychiatric patients are also considered as a high-risk group for HIV infection, they have been under-evaluated in terms of their behaviour in comparison with the other high-risk groups.^{2,8,11}

This was a two-part study. The objectives of this study: Part I – was to determine the prevalence and characteristics of risk-taking behaviour for contracting HIV among adult psychiatric patients admitted to Weskoppies Hospital. It was hoped that the findings of the study might encourage the hospital management to implement intervention strategies aimed at reducing HIV risk behaviour among psychiatric in-patients. The second part of the study (reported elsewhere) focused on HIV-related knowledge and its potential relationship to HIV-related risk behaviour.¹⁴

Method

Population

The study took the form of a cross-sectional quantitative descriptive survey. Subjects for the study consisted of adult in-patients admitted to Weskoppies Hospital (which is a specialist psychiatric hospital). Subjects were divided into three groups according to how long they had been in-patients at Weskoppies hospital (Table I). The first group comprised patients who had been in-patients at the hospital for a period of two weeks or less. The second group consisted of in-patients who had been in acute wards for a period of between two weeks and six months. The third group consisted of patients who had been in-patients at Weskoppies Hospital for more than six months and had been in the long-term wards for a minimum of three months.

A total of 150 subjects, 50 from each of these three groups, were included in the study. Data collection for the study took place between December 2009 and February 2010. The first group consisted of consecutive admissions from 1 December 2009. For the second and third groups, a list of all patients in acute- and long-term wards was retrieved from the hospital's Medicom patient administration system and a systematic sample randomly selected from each stratum.

The rationale for using different groups was to compare behaviour among them. The first group would reflect patients' behaviour while in the community, whereas the purpose of using

groups two and three was to compare behaviour in acute wards to that in chronic wards.

The sample was further grouped according to gender, sexual orientation, level of education, diagnosis, and whether or not patients had been treated previously for sexually transmitted diseases (STDs).

Instruments and procedures

A structured face-to-face interview was conducted with each participant by the research clinicians and clinical files were used to record each participant's psychiatric diagnosis. The interview gathered information regarding demographic data and recorded the presence or absence of various HIV risk behaviours as obtained from the literature (including multiple sexual partners, and also unknown partners; non-use of condoms; use of drug injection equipment; having sex and substances together; sex work/trade; and forced intercourse). A total risk behaviour score was then calculated. From the risk score, three risk-behaviour categories were identified as follows: a score of 0 = no risk; a score of 1 to 3 = medium risk; a score of 4 to 9 = high risk.

Associations between HIV risk behaviour and six demographic and clinical variables were analysed: gender, level of education, sexual orientation, history of treatment for sexually transmitted diseases, duration of hospitalisation and psychiatric diagnosis.

HIV-related knowledge and its potential relationship to HIV-related risk behaviour were assessed in Part II of the bigger study.¹⁴

Data analysis

Data captured from the structured interviews was analysed statistically using Chi-Square tests to assess the association between the categorical variables. The level of significance was specified at the conventional 5%, but results with a p-value less than 0.1 were also reported as moderate evidence in favour of the alternative hypothesis.

Ethical considerations

Only patients who could give written informed consent were included in the study. The study was approved by the Research Ethics Committee of the Faculty of Health Sciences of the University of Pretoria.

Results

Of the 150 subjects approached, 113 participated in the study. The remaining 37 were either unable to give informed consent or refused to participate. Forty-two participants (37%) belonged to the new group; 37 (33%) to the acute admission group; and 34 (30%) to the long-term group (Table I).

Table I: Characteristics of the duration-of-admission subgroups

Subgroup	Duration of admission	Wards	Sampling method	Number (%)
New	≤ 2 weeks	Acute	Successive admissions	42 (37%)
Acute	> 2 weeks ≤6 months	Acute	Randomisation	37 (33%)
Long-term	> 6 months	Long-term	Randomisation	34 (30%)

Table II describes the demographics and the clinical characteristics of the study population. Table III reports the prevalence of individual risk behaviours recorded during the structured interview. Of the participants 62 (55%) reported having had no sexual partners in the previous six months, 29 (26%) having had one sexual partner, and 22 (19%) having had more than one sexual partner. Of the 46 who had reportedly had vaginal intercourse, 17 reported having never used condoms, 16 having used them sometimes, and 13 having used condoms all the time. Of the five who had reportedly had anal intercourse, four reported having never used condoms, and one having used condoms all the time.

None of the subjects reported having used drug injection equipment. Nine (8%) patients reported having engaged in sex in exchange for money, drugs, tobacco, a place to stay or a combination of the above in the previous six months. Sixteen (14%) participants reported having had sex with someone they had known for less than 24 hours and nine (8%) reported having had sex during or soon after using drugs or alcohol. Twenty (18%) participants reported having been forced into unwanted sexual intercourse and two (2%) had reportedly forced someone into unwanted sexual intercourse in the course of their lifetime.

The prevalence of HIV risk behaviour according to the total risk behaviour score is shown in Figure 1, which indicates that 48% of participants fell into the no-risk group, 29% in the medium-risk group, and 23% in the high-risk group. There was moderate evidence of association between gender and risk

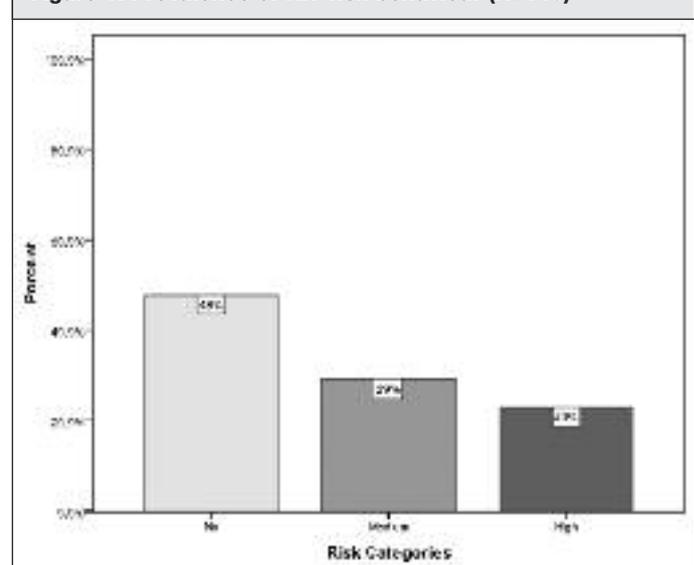
Table II: Demographic data and clinical variables

	N	%
Total study population Mean age = 38 years (standard deviation 11 years)	113	100
Gender		
Male	77	68
Female	36	32
Education		
Less than high school	30	27
More than high school	83	74
Sexual orientation		
Bisexual & homosexual	9	8
Heterosexual	104	92
Treated for sexually transmitted diseases		
None	92	81
Treated	21	19
Duration of hospitalisation		
New admission group	42	37
Acute admission group	37	33
Long-term group	34	30
DSM-IV TR primary diagnosis		
Psychotic disorders	76	68
Substance-related disorders	15	13
Mood disorders	29	26
Personality disorders	13	12
Cognitive disorders	7	6

Table III: Prevalence of HIV risk behaviours recorded during structured interview

	N	%
Total study population	113	100
Number of sexual partners in previous six months		
None	62	55
One	29	26
More than one	22	19
Use of condoms for vaginal intercourse		
Did not have vaginal intercourse	67	59
Used condoms all of the time	13	12
Used condoms sometimes	16	14
Never used condoms	17	15
Use of condoms for anal intercourse		
Did not have anal intercourse	108	95
Used condoms all of the time	1	1
Never used condoms	4	4
Use of drug injection equipment		
Never used	113	100
Sex in exchange for money / drugs / tobacco / place to stay		
Never	104	92
Yes	9	8
Sex with someone known for < 24 hours		
Never	97	86
Yes	16	14
Sex during / soon after using drugs or alcohol		
Never	104	92
Yes	9	8
Ever forced into unwanted sexual intercourse		
No	93	82
Yes	20	18
Ever forced someone else into unwanted sexual intercourse		
No	111	98
Yes	2	2

Figure 1: Prevalence of HIV risk behaviour (N=113)

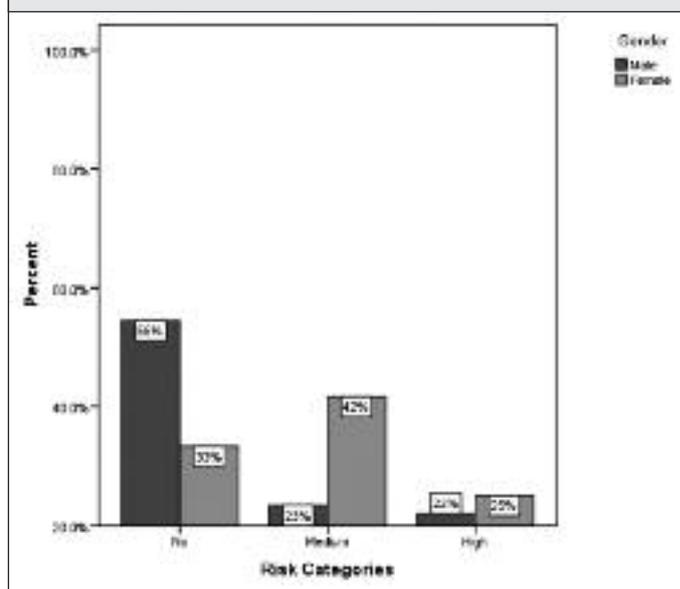


behaviour, in that there were more female patients in the medium-risk category and fewer in the no-risk category ($p=0.075$) than expected under the null hypothesis of no association (Figure 2). There was no statistically significant association between duration of hospitalisation and the three risk categories.

Table IV reports the statistical test results of the association between individual risk behaviours and the demographic- and clinical variables. Level of education and sexual orientation did not affect HIV risk behaviour. Female patients were more likely to have had one sexual partner (moderate evidence of statistical significance) and were statistically significantly more likely to have been forced into unwanted sexual intercourse than male patients. Patients with a history of treatment for sexually transmitted diseases were more likely to have had sexual intercourse during or soon after using alcohol or drugs and were also more likely to have been forced into unwanted sexual intercourse (moderate evidence of statistical significance).

Longer-term patients were statistically significantly more likely to have had sex with someone they had known for less than 24 hours. Patients with a diagnosis of a substance-related disorder were statistically significantly more likely to have had more than one sexual partner and were more likely to have had sex during or soon after using alcohol or drugs. Patients with a diagnosis of cognitive disorders were statistically significantly more likely to have had more than one sexual partner and were more likely to have had sexual intercourse with people they had known for less than 24 hours (moderate evidence). A diagnosis of a personality disorder was associated with having sexual intercourse with someone

Figure 2: Association between risk behaviour and gender (N=113)



known for less than 24 hours and being forced into unwanted sexual intercourse (moderate evidence). Those without a psychotic disorder were statistically significantly more likely to be forced into unwanted sexual intercourse.

Discussion

This study revealed that 45% of the participants had been sexually active in the previous six months (41% of new patients, 50% of acute patients and 45% of long-term patients).

Table IV: Testing of association between risk behaviour and demographic and clinical variables

Categorising variable	Risk behaviour	Findings	Chi-square (DF)	p-value
Gender	No. of partners (=1)	Women more likely	5.0083(3)	0.0932
Gender	Being forced into unwanted sexual intercourse	Women more likely	16.285(1)	<0.0001**
Treatment for STDs	Sex after using drugs/alcohol	More likely	4.3222(1)	0.0601
Treatment for STDs	Being forced into unwanted sexual intercourse	More likely	4.3282(1)	0.0549
Duration of hospitalisation	Sex with someone known for < 24 hours	Long-term admissions more likely	6.2824(2)	0.0432*
Diagnosis of a substance-related disorder	No. of partners (>1)	More likely	9.2156(2)	0.0141*
Diagnosis of a substance-related disorder	Sex after using drugs/alcohol	More likely	15.1853(1)	0.0019**
Diagnosis of cognitive disorder	No. of partners (>1)	More likely	7.5514(2)	0.0283*
Diagnosis of cognitive disorder	Sex with someone known for < 24 hours	More likely	5.0563(1)	0.0577
Diagnosis of personality disorder	Sex with someone known for < 24 hours	More likely	3.3344(1)	0.0872
Diagnosis of personality disorder	Being forced into unwanted sexual intercourse	More likely	4.3473(1)	0.0524
Diagnosis of psychotic disorder	Being forced into unwanted sexual intercourse	Those without a psychotic disorder more likely	5.4662(1)	0.0194*

* p value significant at the 0.05 level ** p value significant at the 0.01 level

In a recent review by Campos et al., studies from developed countries showed that 51% to 74% of psychiatric patients were sexually active whereas those from developing countries reported lower rates.⁵ The lowest rate was reported in an Indian study, which reported a 41% rate.⁹ The lower rate in the current study could be because participants were in-patients and are presumed to be more impaired and therefore less sexually active than out-patients.

Although nearly half of the patients were not at risk for contracting HIV, the rest of the patients showed a medium- or high risk for contracting HIV (29% and 23% respectively). A review by Grassi on the risk of HIV infection in psychiatrically ill patients found an elevated presence of HIV-related risk behaviour in every study.² Chandra et al. found a 5% rate of risky sexual behaviour among psychiatric in-patients in Southern India, which seems lower than the rate found in other studies.⁹ It is important to mention that a direct comparison of our study with earlier studies is difficult, as different methods for assessing risk were employed. We found female patients to be more at risk of contracting HIV as compared to male patients, which was inconsistent with Chandra et al.'s study, which found male patients to be more at risk.⁹

One of the biggest problems regarding HIV risk behaviour in this study was being forced into unwanted sexual intercourse. Female patients with a history of treatment for sexually transmitted disease and those with a diagnosis of personality disorder showed a significant association with being sexually abused. Our finding of female patients being at risk because of being forced into unwanted sexual intercourse did not correlate with earlier studies, whose findings noted sex trade (sex in exchange for shelter, money or food) as being common in female patients.⁵ Grassi theorises that patients suffering from mental illness are a vulnerable group and are socially disadvantaged and could easily be victimised by individuals who expose them to HIV infection by unwanted sexual advances or even sexual violence.² In view of this finding it came as no surprise to find that 18% of our subjects, mainly female patients, reported being victims of sexual abuse. There was also a lack of prior studies reporting any association between specific personality disorders and being sexually abused. Regarding an association between treatment for sexually transmitted disease and being sexually abused, this came as no surprise as one would anticipate risk for sexually transmitted disease with being sexually abused.

Another prominent HIV risk behaviour seems to be multiple sexual partners, which was associated with diagnoses of substance-related disorders and cognitive disorders. We could not find a relationship between cognitive disorders and having multiple sexual partners in the literature. Few studies have specifically investigated the relationship between substance-related disorders and HIV risk behaviour, and an important limitation in these studies was the inability to establish a cause-and-effect relationship.⁵ Although these studies looked into substance-related disorders and HIV risk behaviour, they did not specifically study having multiple sexual partners as an individual risk. Alcohol and other drugs can produce

significant effects on cognitive function, mood, sensory perception and behaviour.⁵

Sex with someone known for less than 24 hours was also a common risk behaviour in this study: there was a statistically significant association with long-term hospitalisation and a moderate association with a diagnosis of cognitive or personality disorders. The question arises whether some mental disorders may impair an appreciation of the consequences of one's behaviour and lead to engaging in behaviour that is high-risk for contracting HIV, as also suggested by Grassi.² Brea et al compared sexualities of people with mental disorders to sexualities of the general population and found evidence that mentally ill patients were characterised by less intimacy and commitment and tended to have sex sooner with new partners, which may increase risk for contracting HIV.¹³ Another study by Wright et al found that hospitalised patients tended to have more transient sexual relationships with fellow in-patients compared to out-patients, who seemed successful in maintaining longer relationships with their sexual partners.⁸ None of the studies specifically noted any relationship between length of stay in hospital and transient sexual relationships.

Another surprising finding in our study was that those without a psychotic disorder were statistically significantly more likely to be forced into unwanted sexual intercourse. There are conflicting findings regarding psychiatric conditions and risk behaviour for contracting HIV, as noted in Campos et al's review.⁵ Some studies reviewed by Campos et al. showed that diagnosis was consistently unrelated to HIV risk behaviour while others showed such a relationship.⁵ For this latter group, investigators in both developed and developing countries have found that patients diagnosed with a schizophrenia-spectrum disorder are less sexually active and are least likely to engage in sexual risk behaviour. Patients with bipolar disorder were described to experience hypersexuality during the manic phase. In addition, patients diagnosed with personality disorders appeared to be at higher risk of HIV infection than those only diagnosed with an Axis I disorder. Though the finding from our current study did not correlate with the abovementioned findings regarding specific relationships between diagnosis and HIV risk behaviour, it does, however, suggest a tendency of some risk behaviour to be associated with certain psychiatric diagnosis.

The limitations of the study include the fact that questions in the structured interview were of a personal nature and some patients may have minimised their behaviour. It should again be noted that during the study the interviewers ensured that rapport was established with the patients to maximise the chances of getting reliable responses from them. A second limitation is the different sampling method used in the first group as compared to the other two groups which poses a methodological problem in the study design. The first group was sampled successively since they had to be interviewed within two weeks of admission. Their randomisation would have resulted in unacceptable delays and overlapping with the second group. As it turned out, the Chi-square tests demonstrated no statistical difference between the behaviour of patients when they were living in the

community (using the new admission group as proxy) and the two in-patient groups.

Future research needs to provide information about risk-behaviour trends in the general population in comparison to psychiatric patients in South Africa, as well as compare the behaviour of in-patients to out-patients. Despite knowledge and awareness about HIV and its transmission, high risk may persist in the psychiatric population, as was evident in the second part of this study and other previous studies.¹⁴ Intervention strategies for psychiatric patients need to address the specific problems they have, in addition to education about HIV transmission.² A growing body of empirical evidence supports the efficacy of motivational interventions for HIV risk reduction among populations that are often considered difficult to engage, which would include psychiatric patients.¹⁵ Hypersexuality and sexual impulsivity in psychiatric institutions may be managed by treating the patients with appropriate drugs, depending on the diagnosis (e.g., neuroleptics), accommodating them in private rooms, and looking after them under one-to-one supervision.²

Conclusions

The study clearly revealed that psychiatric patients are not asexual but are, in fact, a sexually active population. The prevalence of risk-taking behaviour for contracting HIV, though lower than in developed countries, was comparable to that found in other developing countries, which is still at a high level. The study highlighted what has been reported in the literature, that mentally ill patients are a vulnerable group and may easily be victimised by individuals who may expose them to HIV infection. In view of the findings from this study, special care should be taken to protect psychiatric patients. Female patients, in particular, should be protected from being sexually abused. Measures should be put in place in psychiatric institutions to minimise HIV risk behaviour.

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References

1. UNAIDS/ WHO AIDS epidemic update, 2007.
2. Grassi L. Risk of HIV infection in psychiatrically ill patients. *AIDS Care* 1996;8:103-116.
3. Naber D, Pajonk FG, Perro C, Lohmer B. Human immunodeficiency virus antibody test and seroprevalence in psychiatric patients. *Acta Psychiatrica Scandinavica* 1994;89:358-361.
4. Carey MP, Carey KB. Behavioral risk for HIV infection among adults with a severe and persistent mental illness: Patterns and psychological antecedents. *Community Mental Health Journal* 1997;33:133-142.
5. Campos LN, Guimardes MDC, Carmo RA, Melo APS, de Oliveira HN, Elkington K et al. HIV, syphilis and hepatitis B and C prevalence among patients with mental illness: A review of the literature. *Cad. Saude Publica*, 2008;24(4):607-620.
6. Sacks M, Dermatis H, Looser-Ott S, Perry S. Seroprevalence of HIV and risk factors for AIDS in psychiatric inpatients. *Hospital and Community Psychiatry* 1992;43(7):736-737.
7. Singh D, Vasant U, Nair MG, Karim QA. HIV infection among psychiatric in-patients in Kwazulu-Natal, South Africa. *International conference on AIDS 2002 July 7-12*.
8. Wright ER, Gayman M. Sexual networks and HIV risk of people with severe mental illness in institutional and community-based care. *Aids and Behaviour* 2005;9(3):341-353.
9. Chandra PS, Carey MP, Carey KB, Prasada PS, Jairam KR, Thomas T. HIV risk behaviour among psychiatric inpatients: Results from a hospital-wide screening study in Southern India. *International Journal of STD & AIDS* 2003;14:532-538.
10. Chuang HT, Atkinson M. AIDS knowledge and high-risk behaviour in the chronic mentally ill. *Canadian Journal of Psychiatry* 1996;41:269-272.
11. Chopra MP, Eranti SSV, Chandra PS. HIV-related risk behaviors among psychiatric inpatients in India. *Psychiatric Services* 1998;49:823-825.
12. Cournos F, McKinnon K, Meyer-Bahlburg H, Guido JR, Meyer I. HIV risk activity among persons with severe mental illness: Preliminary findings. *Hospital and Community Psychiatry* 1993; 44: 1104-1106.
13. Brea LP, Wright ER. The sexual partnerships of people with serious mental illness. *The Journal of Sex Research* 2006;43(2):174-181.
14. Magagula TG, Mamabolo MM, Krüger C, Fletcher L. A survey of HIV-related knowledge among adult psychiatric patients at Weskoppies Hospital. *African Journal of Psychiatry* 2012;15(5):335-339.
15. Tubman JG, Gil AG, Wagner EF, Artigues H. Patterns of sexual risk behaviours and psychiatric disorders in a community sample of young adults. *Journal of Behavioural Medicine* 2003;26(5):473-499.

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