

# A survey of HIV-related knowledge among adult psychiatric patients. A South African Study - Part 2

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## Abstract

**Objective:** Studies have reported an increased prevalence of HIV infection among psychiatric patients. Inaccurate HIV knowledge is included as a factor in the increased risk of HIV infection in the mentally ill, but few studies have looked specifically at this factor. The aims of the study were to determine the knowledge of HIV and its transmission among adult psychiatric patients at Weskoppies Hospital and to determine the relationship between HIV knowledge and HIV risk behaviour. **Method:** Structured interviews were conducted with 113 consenting adult patients at Weskoppies Hospital. They were divided into three groups according to their length of hospital stay. The structured interview included questions about demographic data, the diagnoses and the AIDS Risk Behaviour Knowledge Test (AIDS-KT). Scores of 13 out of 13 represented accurate knowledge of HIV (level I); scores of 10-12 represented good knowledge (level II); scores of  $\leq 9$  represented poor knowledge (level III). **Results:** A total of 104 patients (92%) demonstrated excellent knowledge of HIV and its transmission (levels I and II). There was no significant linear association between HIV knowledge and risk-behaviour scores (Pearson's correlation coefficient  $r = -0.11$ ). **Conclusion:** The presence of high-risk behaviours despite good HIV-related knowledge in this group of patients, leads us to think that knowledge alone will not limit HIV risk behaviours. For this reason, educational programmes should not be limited to interventions that simply increase knowledge about HIV infection but should extend to clinical factors, including patients' motivation and readiness to change their behaviour.

**Keywords:** Mental illness; psychiatric patients; HIV-related knowledge; South Africa

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## Introduction

Many studies have shown that the prevalence of HIV among the mentally ill is higher than in the general population.<sup>1-8</sup> Indeed, it has been estimated to be at least eight times the prevalence in the general population.<sup>1</sup> The higher rates of HIV among people with mental illness may be related to symptoms of mental illness (e.g. impulsivity, impaired reality testing, or impaired judgment); comorbid substance abuse; and social instability and high rates of poverty and homelessness.<sup>3,4,5,7</sup>

Among the factors that seem to be responsible for the increased risk of HIV infection in psychiatrically ill patients,

inaccurate HIV knowledge is included, but very few studies have looked specifically at this factor.<sup>3-7</sup> Strauss et al. examined the relationship between HIV-related knowledge and risk behaviours among war veterans with severe mental illness (SMI) and the results showed high rates of inaccurate HIV knowledge, with > 40 % of patients demonstrating some inaccurate HIV knowledge.<sup>3</sup> Another study carried out in Italy by Grassi et al. indicated that understanding of HIV transmission and prevention was generally lower among patients with mental illness than among nonpsychiatric patients.<sup>4</sup>

This was a two-part study. Part I aimed at determining HIV risk behaviours and the characteristics of the risk behaviours.<sup>14</sup> This second part aimed to determine the level of knowledge of HIV and its transmission among adult psychiatric patients at Weskoppies Hospital and at exploring the potential relationship between HIV-related knowledge and HIV risk behaviours in this study population.

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## 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 structured interview consisted of questions about demographic data and the AIDS Risk Behavior Knowledge Test (AIDS-KT).<sup>9</sup> Two questions from the AIDS Risk Inventory<sup>10</sup> were added to the AIDS-KT, making it a 13-item "true or false instrument" devised to assess the level of knowledge about HIV transmission and prevention. The two questions taken from the AIDS Risk Inventory are: 1. Being born to or breastfed by an HIV infected mother creates risk of AIDS? and 2. Sharing needles with an HIV infected person creates risk of AIDS?

Subjects who scored 13 out of 13 on the AIDS-KT were considered to have accurate knowledge of HIV and its transmission; those who scored between 10 and 12 were

considered to have good knowledge; while those who scored 9 and below were considered to have poor knowledge.

HIV risk behaviour was assessed in Part I of the bigger study by recording the presence or absence of various HIV risk behaviours as obtained from the literature.<sup>14</sup>

### Data analysis

Data captured from the structured interviews was analysed statistically using Chi-Square tests (or Fisher's Exact test where appropriate) to assess the association between the categorical variables. T-tests and analysis of variance (ANOVA) were used to evaluate whether differences existed between groups on the quantitative variables. When sample sizes were too small, or the assumptions of the parametric tests not met, the analogous non-parametric Mann-Whitney U test or Kruskal-Wallis test was performed. The possible relationship between knowledge of HIV and HIV risk behaviour was analysed using Pearson's correlations and linking the HIV knowledge score data with the HIV risk behaviour score data of Part I of this study.<sup>14</sup>

### Ethical Considerations

Only subjects who were able to give written informed consent and did so were included in the study. For confidentiality reasons, the patients' names were not written on the information leaflet. The Research Ethics Committee of the Faculty of Health Sciences of the University of Pretoria approved the study protocol.

### Results

Of the 150 subjects approached, 113 participated in the study. The majority of those who did not participate were not able to give informed consent. Only a small percentage of those approached did not agree to take part in the study. Table II summarises the characteristics of the study population.

A total of 104 (92%) subjects scored at levels I and II, which demonstrates their excellent knowledge of HIV and its transmission. The different levels of knowledge and their scores are displayed in Table III. The distribution of responses to individual AIDS-KT items is shown in Table IV.

There was no statistical difference in terms of knowledge when the three duration-of-stay subgroups were compared. The chronic group had a slight lower mean score of 11.58, while the other two groups had similar mean scores of 11.7 (Figure 1).

According to the Mann-Whitney U test, there was also no statistical difference in terms of knowledge between male (mean of 11.7) and female patients (mean of 11.5).

Seventy-three percent of subjects had completed high school (12 years or more). Of these, 37% scored 13 out of 13

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

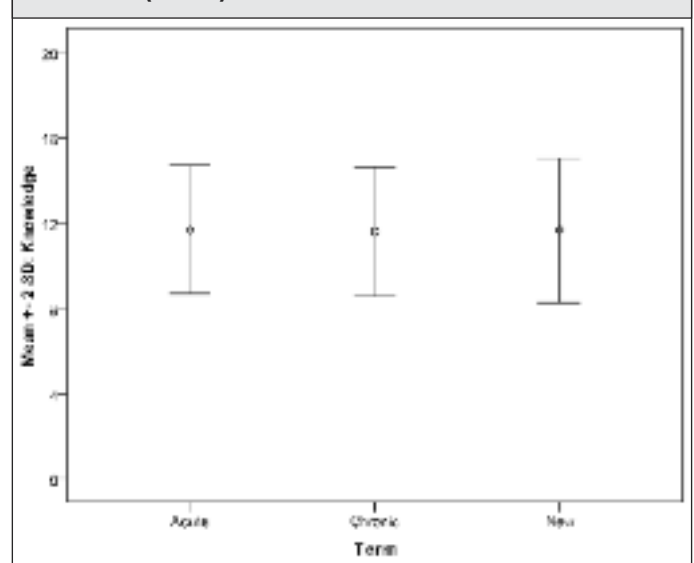
Subgroup	Duration of admission	Wards	Sampling method	Number (%)
New	≤ 2 weeks	Acute	Successive admissions	42 (37%)
Acute	> 2 weeks ≤6 months	Acute	Randomisation	37 (33%)
Long-term	> 6 months	Long-term	Randomisation	34 (30%)

**Table II: Demographic data and clinical variables**

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

**Table III: Levels of knowledge according to AIDS-KT9**

Level of Knowledge	Correct responses (13)	Number of respondents n=113
Accurate Knowledge	13	39 (34%)
Good Knowledge	10-12	65 (58%)
Poor Knowledge	0-9	9 (8%)

**Figure 1: Error bar plot of HIV knowledge by duration-of-admission (N=113)****Table IV: Distribution of responses to the AIDS Knowledge Test (AIDS-KT)9**

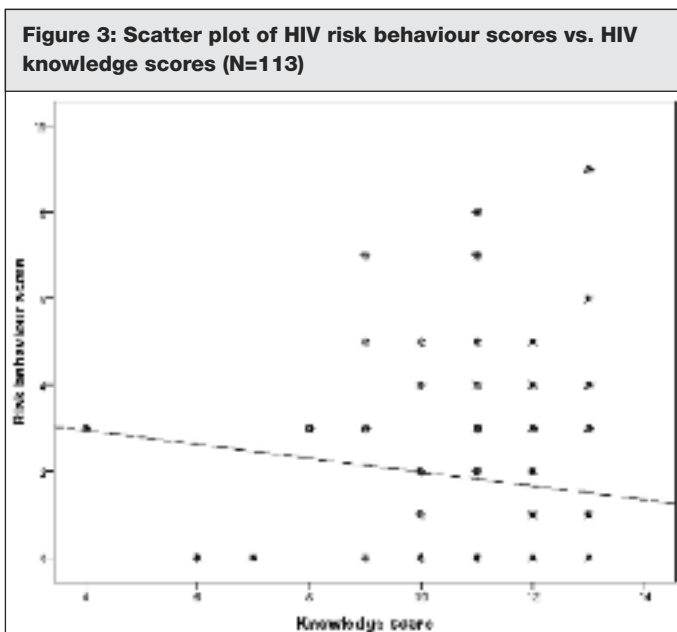
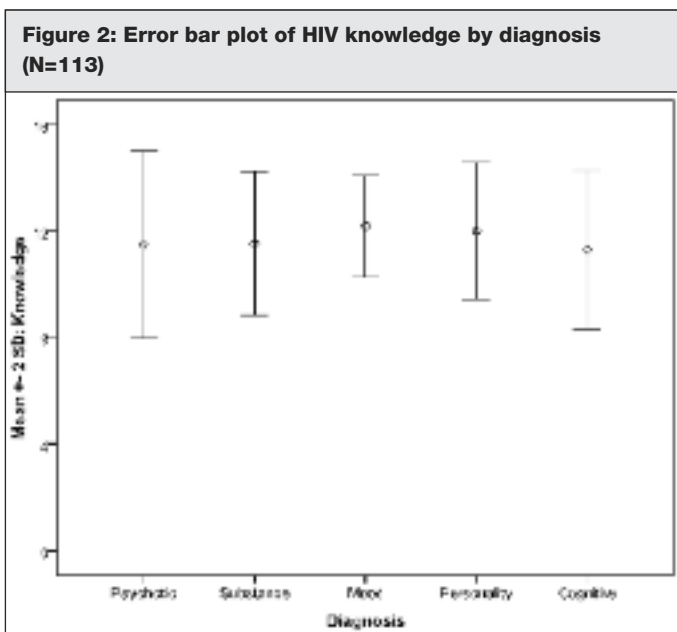
Test items	No. of correct responses n=113
Only gay (homosexual) men get AIDS	111 (98%)
Men can't get AIDS if they only have sex with women	108 (96%)
Women can't get AIDS if they only have sex with men	107 (95%)
Washing after sex stops AIDS	101 (89%)
You must have many sex partners to get AIDS	97 (86%)
People who can give you AIDS always look sick	94 (83%)
Most people become sick quickly after getting the AIDS virus	87 (77%)
Sex with someone who has used injected drugs creates risk for AIDS	86 (76%)
<b>How is HIV transmitted?</b>	
Unprotected vaginal sex with an HIV-infected person	110 (97%)
Sharing needles with an HIV-infected person	109 (96%)
Receiving an HIV-infected blood transfusion	107 (94%)
Unprotected anal sex with an HIV-infected person	103 (91%)
Being born to or breastfed by an HIV-infected mother	96 (84%)

on the AIDS-KT, while only 27% of those whose level of education was less than high school (less than 12 years) had a score of 13. However, of the nine subjects who had poor knowledge of AIDS and its transmission (a score of less than 10) eight belonged to the more educated group. The mean knowledge scores were the same (11.6) for the two educational groups.

The subjects with psychotic disorders, including schizophrenia, showed poorer knowledge than subjects with mood disorders. The worst scores were for those diagnosed with cognitive impairment including mental retardation, dementia, or cognitive disorder due to a general medical condition. Figure 2 displays the mean knowledge scores for the different diagnostic groups.

In a comparison of patients who had been previously treated for STDs to those who had never been treated, no statistical difference in terms of HIV knowledge was found.

Thirty-seven (36%) of the 104 heterosexual subjects scored 13 on the AIDS-KT but only two (22%) of the nine



bisexual/homosexual subjects scored 13. On average, the knowledge scores in the bisexual/homosexual group were slightly lower (11.2 vs. 11.7) but the difference in scores was not statistically significant.

There was no significant linear association between knowledge scores and risk-behaviour scores (Pearson's correlation coefficient  $r = -0.11$ ) (Figure 3).

## Discussion

This study demonstrated that this group of mentally ill patients had better HIV knowledge than expected, with 92% of subjects showing good knowledge of HIV and only 8% showing poor HIV knowledge on the AIDS-KT. This is in contrast with previous studies indicating that the understanding of HIV transmission and prevention is generally lower among patients with mental illness than among non-psychiatric patients.<sup>1,4-7</sup>

Misconceptions about HIV transmission and prevention are reported as more evident among in-patients, patients with a diagnosis of schizophrenia, patients with repeated psychiatric admissions, and patients with long-lasting illness than among patients with less severe disorders, such as mood and anxiety disorders.<sup>2-5</sup> As a result, in the current study, subjects from the chronic group (those hospitalised for a minimum period of six months) were expected to show poorer HIV knowledge than the other two groups showed. However, the chronic group scored only slightly lower than the other two groups. The reason for this could be that these patients have been exposed to several sessions of sexual health education during their long stay in the hospital, as sexual health education is part of routine care at Weskoppies Hospital.

As in previous studies, those with psychotic disorders, including schizophrenia, showed poorer knowledge than subjects with mood disorders.<sup>4,6,7</sup> The fact that the worst scores were found in those diagnosed with cognitive impairment (such as mental retardation, dementia, and cognitive disorder due to a general medical condition) supports the findings of Susser et al (1993.) These authors found that severe psychiatric and cognitive impairment in a group of men with mainly psychotic disorders affected their ability to learn and adopt new behaviours.<sup>11</sup>

A study carried out in the United States indicated that education of less than 12 years was associated with inaccurate HIV knowledge.<sup>2</sup> However, in this sample of subjects for the current study there was no statistical difference in knowledge when those with a level of education less than high school were compared with those whose level of education was more than high school.

The South African regimen for the treatment of STDs includes intensive education on STDs (including HIV) for the sexual partners concerned. Moreover, an HIV test is done routinely after adequate pre-counseling is given. For this reason those who had been previously treated for STDs were expected to have better knowledge than those who had never been treated for these diseases. But in this sample there was no statistical difference in HIV knowledge among the two groups.

Irrespective of the good HIV knowledge in this study sample the prevalence of HIV-related risk behaviours is high, as demonstrated in Part I of this study, and it was

found that there was no statistically significant correlation between the level of knowledge and risk behaviours.<sup>14</sup>

In the current study it is possible that symptoms of mental illness – e.g. impulsivity, impaired reality testing, affective instability, suicidal intent or self-destructive behaviour, impaired judgment or lack of appreciation of the consequences of one's behaviour – might play a bigger role in the increased prevalence of HIV infections than lack of HIV-related knowledge. For this reason, educational programmes should not only be limited to interventions that simply increase knowledge about HIV infection but should extend to clinical factors, including patients' motivation and readiness to change their behaviour.

It is to be noted that the discrepancy between good HIV-related knowledge and HIV risk behaviour is not only limited to the mentally ill, as a group of adolescents without mental illness has displayed the same trend: In an analytical review Hartell (2005) looked at the sexual behaviour of adolescents in South Africa and concluded that despite educational programmes there has been no significant change in the rate of infection among this population group. The review recommended a new generation of behavioural interventions that would involve both factual and life skills, as well as behavioural risk education.<sup>15</sup>

This study is the first of its kind in South Africa and it gives valuable information that could be of importance in reducing the high prevalence rate of HIV infections in psychiatric patients. The major limitation of this study is that it took place at the same time as another study on the prevalence of HIV in the same hospital and some of the patients were randomised for both studies. As a result, they received mandatory pretest HIV counselling that included information about transmission risks. It must be recognised then that rates of HIV knowledge observed in this sample may be higher than the norm and not easily generalisable to the population of psychiatric in-patients.

It would be of value in future research to include a control group for the purpose of comparing the knowledge of the mentally ill to the knowledge of those who are not mentally ill.

### Conclusions

The presence of high-risk behaviours despite good HIV-related knowledge in this group of patients, suggests that knowledge alone will not limit the HIV risk behaviours. Further research needs to be done on the role of other potential factors that might influence HIV risk behaviours, e.g. certain symptoms of mental illness. For this reason, educational programmes should not be limited to interventions that simply increase knowledge about HIV infection but should extend to clinical factors, including patients' motivation and readiness to change their behaviour.

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