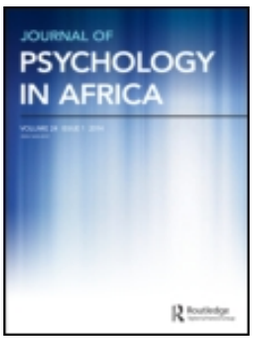

Journal of Psychology in Africa

ISSN: 1433-0237 (Print) 1815-5626 (Online) Journal homepage: http://www.tandfonline.com/loi/rpia20

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To cite this article: Lanél Maré, Marié P. Wissing, Mada J. Watson & Suria M. Ellis (2011) Psychosocial Health of an African Group before Awareness of HIV Status: A Comparative Study, Journal of Psychology in Africa, 21:1, 7-14

To link to this article: http://dx.doi.org/10.1080/14330237.2011.10820424

Published online: 01 May 2014.

Journal of Psychology in Africa 2011, 21(1), 7–14
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JOURNAL OF PSYCHOLOGY IN AFRICA
ISSN 1433-0237

Psychosocial Health of an African Group before Awareness of HIV Status: A Comparative Study

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This study aimed to explore the psychosocial health profiles of people with and without HIV before they learned their infection status. A total of 1,025 participants (males = 386, females = 639, age range = between 32 and 87, infected = 153) completed questionnaires on psychosocial well-being and were tested for HIV. Participants who were infected with HIV had a lower sense of coherence and a lower capacity to succeed in joint community activities than the participants infected with HIV. Some differences were detected between rural and urban areas. It is concluded that mental health and quality of life may be compromised in some ways even before HIV status is known and overt symptoms of infection noticed. Proactive interventions on community level to promote mental health and prevent problems are suggested focusing amongst others on coping skills, relationship building, and finding meaning and engagement in community activities.

Keywords: HIV and AIDS, psychosocial well-being, biological influences, psychosocial behavior, African, rural areas, urban areas.

It is estimated that 30 to 36 million people worldwide are living with the Human Immunodeficiency Virus (HIV). Almost a third of all new HIV infections and Acquired Immunodeficiency Syndrome (AIDS) related to deaths worldwide occur in southern Africa (UNAIDS, 2007). An estimated 5.7 million people were living with HIV in South Africa in 2009, making it the country with the highest prevalence of infection in the world (UNGASS, 2010). Peltzer, Matseke, Mzolo and Majaja (2009) state that it is unclear how many of these 5.7 million people live in urban and rural areas respectively, because people residing in the urban areas are almost twice as likely to have been tested than those residing in rural areas. It is well known that HIV infection and AIDS are accompanied by symptoms of psychosocial distress (Van Dyk, 2008) which is partly a reaction to the diagnosis, but relatively little research has been conducted on its direct effect on psychosocial well-being among participants who are not aware that they are infected with HIV.

Psychosocial Well-being

Many researchers (e.g., Keyes, 2002; Peterson, 2006; Seligman & Csikzentmihalyi, 2000) have stressed the perspective that the absence of symptoms of mental illness is not the same as the presence of positive mental health, and that to better understand human behaviour, a continuum perspective was more appropriate than one that overvalued pathology. Keyes (2002, 2005, 2007) distinguished three categories of health and well-being at the upper end of the mental health continuum: languishing, moderate mental health, and flourishing. In the same way that depression consists of symptoms of reduced and malfunctioning, mental health consists of symptoms of positive functioning. Well-being is conceptualized in various ways, for example it is characterized by a sense of coherence (Antonovsky, 1987), self-efficacy (Schwarzer & Jerusalem, 1993), satisfaction with life (Diener, Emmons, Larsen, & Griffin, 1985), positive affect (Fredrickson, 2000), autonomy, relatedness and competency (Ryan & Deci, 2000), flourishing (Keyes, 2007), and may include both hedonic and eudaimonic components of experience (Wissing & van Eeden, 2002). The exploration of the psychosocial profile of people with and without HIV infection in the current study takes cognizance of the indicators of psychosocial ill-health. It also takes into account the manifestations of psychosocial (positive) health, with the emphasis on psychosocial well-being, as no previous studies could be located in this regard.

Psychosocial Effects of Illness

Having an illness has a direct influence on a person's psychological and social well-being (Ross & Deverell, 2005). Van Dyk (2008) asserts that being infected with HIV affects people mentally, socially, and emotionally. They may often therefore display anxiety, low self-esteem, depression, suicidal behaviour (suicidal thoughts), preoccupation with their health, hypochondria, and spiritual concerns (Van Dyk, 2008). Mood and anxiety disorders, particularly depression, are the most common psychiatric diagnoses and are 5–10 times more common in people infected with HIV than in the general population (Kessler et al., 1994). These psychological changes occur because of the difficulties associated with being infected with HIV and the reality of the prognosis of the illness (Van Dyk, 2008). However it is important to remember that according to Ross and Deverell (2005) people (who suspect that they might be infected with HIV)'s psychosocial functioning can also be influenced, due to anxiety induced by uncertainty.

People who are infected with HIV and their families are subjected to the prejudice, discrimination, abuse, and hostility related to the stigma associated with HIV (Holzemer & Uys, 2004). Crawford (1996) found that the degree of stigma associated with AIDS is greater than with other medical conditions such as genital herpes, hepatitis, drug abuse, diabetes, and cancer. It has also been found that in general there are more incidents of stigmatization and discrimination against people infected with HIV and people with AIDS in urban areas than in rural areas in South Africa (Naidoo et al., 2007). The stigmatization of people infected with HIV causes further severe emotional strain (Van Dyk, 2008). Many people think that they might be infected with HIV, but are very reluctant to be tested because of the stigmatization of those with the illness (Holzemer & Uys, 2004). The knowledge that one is infected with HIV has an influence on a person's mental, emotional, and social functioning (Van Dyk, 2008). However, there is scant information about the influence of HIV on a person's psychosocial well-being when that person does not know whether he/she is infected with HIV.

Issues for Research

Existing research on the link between psychological well-being and HIV focuses mainly on coping with HIV as a chronic illness (Kraaij et al., 2008; Schmitz & Crystal, 2000) and on the influence that HIV has on the quality of life of a person living with HIV (Kaplan, Patterson, Kerner, Hampton, Atkinson, & Heaton, 1997). Little or no research has been done on the psychosocial functioning of people infected with HIV before they became aware of their infected status. Although the influence of HIV on a person's psychosocial functioning is undeniable (Kessler et al., 1994; Van Dyk, 2008), this effect may be the result of the person's knowledge of his/her HIV-infected status. If the psychosocial functioning of people infected with HIV (whose HIV status is not known to them at the time of psychological evaluation) differs from that of people not infected with HIV, biological-physical processes in the body might be involved, anticipatory uncertainty about status may play a role, and / or identifiable behavioural tendencies may be involved that may offer a window of opportunity for proactive interventions. It is difficult to disentangle the biological and psychological effects of HIV on the person who is diagnosed early in infection, because these effects happen simultaneously (Ross & Deverell, 2005).

In the current study, there was an opportunity to study the manifestations of psychosocial functioning and well-being of people infected with HIV as part of a multi-disciplinary project, with the participants' informed consent, before their HIV status was revealed to them (which was also part of the same investigation and service delivery process).

Goals of the Study

The aim of this study was to compare the psychosocial health profiles of people with and without HIV and AIDS before they knew their infection status.

The research question for the current study was therefore whether people with and without HIV infection differ in their psychosocial symptoms (e.g., depression, anxiety) and strengths (e.g., sense of coherence, satisfaction with life, community collective efficacy) before their HIV status is revealed to them. Findings may provide pointers for community interventions.

Method

Design

A cross-sectional survey design was employed to gather psychological data as part of a multi-disciplinary study where the participants' HIV status was also determined after obtaining their informed consent and also giving them pre- and post-test counseling. This study falls in the overlap of the South African leg of the Prospective Urban and Rural Epidemiology study (PURE-SA: Kruger, 2005; Teo et al., 2009) that investigates the health transition and chronic diseases of lifestyle in urban and rural subjects and the FORT project (Wissing, 2005, 2008). Baseline data were collected during 2005.

Participants

Rural and urban participants from a relatively more collectivist South African cultural background (black South Africans, mainly Setswana speaking) took part in this study (Kruger, 2005). The Rural group of participants was selected from a rural community (A) on the highway to Botswana and from a remote rural community (B), only accessible by a gravel road. Both communities are still under tribal law. The Urban group consisted of community C which was selected from an established part of a township and community D from an informal settlement surrounding community C. Sites were selected on grounds of identified migration stability within the chosen communities as the PURE project is a 12 year follow-up study. Participants in a community were identified in randomly selected houses started from a specific point. The research team explained the research project and obtained voluntary and informed consent. Every head of household gave signed consent, and if a person refused or was not at home, the next house was taken. For inclusion participants should have been older than 30 years with no reported chronic diseases of lifestyle, TB or diagnosed HIV (this was for over-arching purposes of the PURE project). The participants completed comprehensive questionnaires about their physical and psychological health, socio-economic background, lifestyle practices and the support systems available to them. Because of time constraints and the length of the test battery, only 1,025 participants completed all the psychological health questionnaires. The group consisted of 386 men and 639 women. As far as age is concerned, 221 were between 30 and 40 years of age, 402 between 41 and 50 years, 241 between 51 and 60 years, 101 between 61 and 70 years, 29 between 71 and 80 years, and 2 above 80 years. Disparity in numbers is due to missing data.

Of the 1,025 participants who completed the psychological health questionnaires, 153 were infected with HIV (14.9%) and 863 were not infected with HIV (since the HIV status of nine of the participants was not known, they were not included in the study) [N = 1016]. In the urban communities 435 participants completed the psychological health questionnaires, of whom 68 were infected with HIV (15.6%) and 367 were not infected with HIV. In the rural communities 581 participants completed the psychological health questionnaires, of whom 85 were infected with HIV (14.6%) and 496 were not infected with HIV.

Measuring Instruments

All measures had been previously professionally translated and validated for use in a Setswana-speaking group as part of the FORT2 project. The following measures were used for the current purposes: Affectometer 2 (AFM) (Kammann & Flett, 1983), Satisfaction With Life Scale (SWLS) (Diener et al.,

1985), Community Collective Efficacy Scale (CCES) (Carrol, Rosson, & Zhou, 2005), Mental Health Continuum Short Form (MHC-SF) (Keyes, 2005), New General Self-efficacy Scale (NGSE) (Chen, Gully, & Eden, 2001), Sense of Coherence Scale (SOC) (Antonovsky, 1987) and General Health Questionnaire (GHQ) (Goldberg & Hillier, 1979).

The AFM measures a general sense of well-being or general happiness. Kammann and Flett (1983) report Cronbach alpha-reliability indices of 0.88 to 0.93. Reliability and validity in a South African context for the participants in this particular group was demonstrated by Wissing et al. (1999) and Wissing, Wissing, Du Toit, and Temane (2008). The SWLS (a 5-item scale) was developed to give an indication of a person's general satisfaction with life. Diener et al. (1985) reported a Cronbach alpha-reliability index of 0.87. With regard to the South African context, Keyes et al. (2008) found an internal reliability of 0.69 in the current group of participants. The CCES measures the community's capacity to succeed in joint activities. Carroll, Zhou and Rosson (2005) report an internal reliability of 0.86. Only seven items were selected from the CCES for use in the present study, as the rest of the items in the scale by Carrol et al. (2005) were not relevant to collective community efficacy. This seven-item version was validated by Van Straten, Temane, Wissing, and Potgieter (2008) who reported a 0.72 Cronbach alpha for this scale for the participants in the current research group. The MHC-SF consists of 14 items. It measures the degree of (1) emotional well-being; (2) social well-being, and (3) psychological well-being (Keyes, 2005). The internal reliability of the overall MHC–SF Scale for the participants in the current research group was 0.74 (Keyes et al., 2008).

The NGSE scale measures the tendency of individuals to view themselves as more or less capable of meeting task demands in various contexts (Chen et al., 2001). Internal consistency reliabilities have been found to range from 0.86 to 0.90, and, in a South African study, Van Straten et al. (2008) found a Cronbach reliability coefficient of 0.74. The SOC measures an individual's way of experiencing the world and his/her life in it. Antonovsky (1993) indicates that the SOC manifested internal reliability indices of 0.78 to 0.93 as reported in 26 different studies. Wissing et al. (1999) and Wissing et al. (2008) have demonstrated the reliability and validity of this scale for the current group of participants. The GHQ detects common symptoms, indicative of various syndromes of mental disorder (e.g., anxiety, somatic symptoms, depression), and differentiates between individuals with psychopathology as a general class and those who are considered to be normal. The Cronbach alpha reliabilities reported vary from 0.82 to 0.86 (Goldberg & Hillier, 1997), from 0.77 to 0.84 for the sub-scales and 0.91 for the Total Scale Score by Wissing and Van Eeden (2002) in a South African group. A Cronbach alpha reliability coefficient, for a Setswanna-speaking group, was reported by Keyes et al. (2008) as 0.89 for the Total Scale.

Procedure

At the time of the present study, the data had already been collected. The procedure was as follows (see Watson, 2008; Van Straten et al., 2008). Permission to execute the PURE-SA study was obtained from the provincial Department of Health (North West Province), local authorities and from the Tribal Chief in the rural area by the PURE-SA study leader (Kruger, 2005). Approval was also obtained from the Ethics Committee of the North–West University for the PURE projects as well as the FORT2 project. Every participant who had given consent after pre-counseling, was tested for HIV, but each was given the choice whether they wanted to know their status or not. HIV status was determined by the First Response (PMC Medical, India) rapid HIV card test, using whole blood. If the test was positive, the test was repeated for confirmation with the Pareeshak (BHAT Bio-tech, India) card test. Everyone received pre-test counseling in groups of 10 participants before the blood sample was taken and individual post-test counseling took place while the participants were given the results of the HIV tests and also the results of other tests (e.g., blood pressure and blood sugar level) before they went home. Every individual identified with an abnormality in the tested markers was referred to the nearest clinic or hospital. The psychosocial well-being questionnaires were completed before the participants' HIV status was revealed to them.

Training was provided to the 16 Setswana-speaking fieldworkers who took part in the administration of the above-mentioned measures. All the measures employed in this study were translated into Setswana by a registered African translator, back-translated by two multi-lingual African doctoral students, and then finalized by using a research committee approach as advised by Van der Vijver and Leung (1997) and described in the validation studies mentioned above.

Data Analysis

Descriptive statistics were determined for all measures for the participants with, and without HIV. Significant differences in the psychosocial profiles among individuals with and without HIV and AIDS, and also between those in the rural and urban groups, were determined with t-tests. A random sample creates an opportunity for studying the properties of a population. In such cases, the statistical significance tests (e.g., t-tests) are used to show that the results (e.g., difference between two means) are significant. The p-value is a criterion of this, giving an indication of the probability that the null hypothesis is incorrectly rejected. For the purposes of this study, differences were regarded as statistically significant when the p-value was smaller than 0.05 (cf. Ellis & Steyn, 2003; Steyn, 2000).

Ellis and Steyn (2003) also stated that statistical significance does not necessarily imply that the result is important in practice. An accepted way of commenting on practical significance is to use the standardized difference between the means of two populations, i.e., the difference between the two means divided by the estimate for standard deviation (Cohen's d value). Cohen (1988) states that guidelines for the interpretation of the effect size in the current case are d = 0.2 (small effect), d = 0.5 (medium effect) and d = 0.8 (large effect). However, it is important to note that these guideline values are only a basis to interpret the effect of differences between means, and should not be used in an absolute sense. Since typical effect size magnitudes may vary greatly across different research areas and tend to be larger in controlled laboratory studies than in uncontrolled field studies (Steyn & Ellis, 2009). When working with the social sciences, it is generally expected that effect sizes would fall in the medium range, since there are large variation among human beings. Significant differences in psychosocial profiles among the participants with and without HIV and AIDS in the rural and urban groups, were also determined by means of a multivariate analysis of variance (MANOVA). Steyn and Ellis (2009) state that the practical significance of these differences is reported as the effect size (1 – Wilk's Lambda). Guidelines for the interpretation of this effect size for the MANOVA in the current case are 0.02 = small effect, 0.13 = medium effect and 0.26 = large effect (Steyn & Ellis, 2009).

Results

Total Group

Descriptive statistics, the results of t-tests, and the effect sizes of psychological measures for the participants infected with HIV and the participants uninfected with HIV are presented in Table 1. There are statistically significant differences in the sense of coherence (SOC) of the two groups of participants ($p = 0.01$) and their perspective on their own community's capacity to succeed in joint activities (CCES) ($p = 0.02$). Participants who were not infected with HIV had a greater sense of coherence and a greater capacity to succeed in joint community activities than the participants infected with HIV. It is important to note, however, that the effect sizes indicate that these differences may not be important in practice.

Urban Areas

Table 2 shows the descriptive statistics, the results of t-tests, and the effect sizes for differences on psychological measures between the participants infected with HIV and the participants not infected with HIV in urban areas. Participants infected with HIV in the urban areas had a statistically significant lower sense of coherence (SOC) than the participants not infected with HIV ($p = 0.008$). The effect size indicates that this might be important in practice (Cohen's $d = 0.35$). A statistically significantly larger number of somatic symptoms (GHQ:SS) were also found in the urban group ($p = 0.051$), but the effect size indicates that this difference is of little practical importance. When considering the findings for the rest of the psychological measures, it can be seen that although there are no statistically significant differences, there is a tendency for most of the psychological measurements to be more positive (and therefore healthier) in the participants not infected with HIV than in the participants infected with HIV.

Rural Areas

Descriptive statistics, the results of t-tests, and the effect sizes for differences in the psychological measures among the participants infected with HIV and the participants not infected with HIV in rural areas, are presented in Table 3. The participants infected with HIV in the rural areas experienced statistically significantly more positive affect (AFM:PA) than the participants not infected with HIV ($p = 0.006$). The participants infected with HIV also had a statistically significant lower capacity to succeed in joint community activities (CCES) than the participants not infected with HIV in the rural areas ($p = 0.003$). In both instances, the effect sizes were in the medium range and therefore indicate the possibility of an effect in practice.

The p-values of the MANOVA Wilk's Lambda test statistic indicated significant difference among the participants not infected with HIV and the participants infected with HIV in rural and urban groups ($p = 0.04$ and 0.01 respectively). This indi-

Table 1

Descriptive Statistics, Results of t-tests, and Effect Sizes For Differences in Psychological Measures Among Participants Infected with HIV and Participants not Infected with HIV in the Total Group

	HIV Uninfected		HIV Infected			
	Mean	SD	Mean	SD	t-test p-value	Cohen's d
AFM:PA	32.31	6.08	32.72	6.07	0.453	0.07
AFM:NA	26.82	6.42	26.48	6.50	0.543	0.05
SWLS	17.40	6.14	17.28	6.82	0.833	0.02
CCES	23.16	4.71	22.17	5.26	0.021	0.19
MHCSF:EWB	7.60	3.60	7.96	3.40	0.261	0.10
MHCSF:SWB	11.28	4.43	11.67	4.80	0.320	0.08
MHCSF:PWB	19.52	4.95	19.09	4.99	0.326	0.09
MHCSF	38.43	9.36	38.72	9.70	0.730	0.03
GSE	27.87	4.54	27.75	4.30	0.774	0.03
NGSE	28.14	5.35	27.59	5.24	0.248	0.10
SOC	125.95	22.92	120.87	20.03	0.011	0.22
GHQ:SS	2.18	2.02	2.31	1.91	0.457	0.07
GHQ:AS	2.43	2.09	2.33	1.84	0.586	0.05
GHQ:SD	2.21	1.67	2.28	1.81	0.641	0.04
GHQ:DS	1.66	1.85	1.83	1.79	0.292	0.09
GHQ	8.47	6.34	8.75	6.12	0.620	0.04

Note. AFM:PA = Affectometer (Positive Affect); AFM:NA = Affectometer (Negative Affect); SWLS = Satisfaction With Life Scale; CCES = Community Collective efficacy Scale; MHC:EWB = Mental Health Continuum (Emotional Well-being); MHC:SWB = Mental Health Continuum (Social Well-being); MHC:PWB = Mental Health Continuum (Psychological Well-being); MHCSF = Mental Health Continuum Short Form; GSE = General Self-efficacy Scale; NGSE = New General Self-efficacy Scale; SOC = Sense of Coherence Scale; GHQ:SS = General Health Questionnaire (Somatic Symptoms); GHQ:AS = General Health Questionnaire (Anxiety and Insomnia); GHQ:SD = General Health Questionnaire (Social Dysfunction); GHQ:DS = General Health Questionnaire (Severe Depression); GHQ = General Health Questionnaire.

N=863 (HIV Uninfected); N=153 (HIV Infected).

Table 2

Descriptive Statistics, Results of t-tests, and Effect Sizes for Differences in Psychological Measures Among Participants Infected with HIV and Participants not Infected with HIV in Urban Areas.

	HIV Uninfected		HIV Infected			
	Mean	SD	Mean	SD	t-test p-value	Cohen's d
AFM:PA	33.89	6.56	32.42	6.79	0.096	0.22
AFM:NA	26.08	6.17	26.70	6.09	0.446	0.10
SWLS	19.87	5.80	19.59	6.55	0.720	0.04
CCES	23.57	4.16	23.57	4.91	0.993	0.00
MHCSF:EWB	8.68	3.45	8.59	3.36	0.845	0.03
MHCSF:SWB	12.69	3.75	13.03	4.58	0.505	0.07
MHCSF:PWB	19.58	5.06	19.31	4.86	0.687	0.05
MHCSF	40.99	8.85	40.94	10.01	0.968	0.00
GSE	28.11	5.00	27.51	4.36	0.357	0.12
NGSE	27.45	5.63	26.87	5.52	0.432	0.10
SOC	126.57	19.63	119.77	17.50	0.008	0.35
GHQ:SS	1.84	1.78	2.31	1.96	0.051	0.24
GHQ:AS	2.14	1.86	2.54	1.88	0.107	0.21
GHQ:SD	2.08	1.72	2.22	1.88	0.547	0.07
GHQ:DS	1.49	1.77	1.90	1.87	0.079	0.22
GHQ	7.55	5.96	8.97	6.46	0.075	0.22

Note. N=367 (HIV Uninfected); N=68 (HIV INfected); AFM:PA = Affectometer (Positive Affect); AFM:NA = Affectometer (Negative Affect); SWLS = Satisfaction With Life Scale; CCES = Community Collective efficacy Scale; MHCSF:EWB = Mental Health Continuum (Emotional Well-being); MHCSF:SWB = Mental Health Continuum (Social Well-being); MHCSF:PWB = Mental Health Continuum (Psychological Well-being); MHCSF = Mental Health Continuum Short Form; GSE = General Self-efficacy Scale; NGSE = New General Self-efficacy Scale; SOC = Sense of Coherence Scale; GHQ:SS = General Health Questionnaire (Somatic Symptoms); GHQ:AS = General Health Questionnaire (Anxiety and Insomnia); GHQ:SD = General Health Questionnaire (Social Dysfunction); GHQ:DS = General Health Questionnaire (Severe Depression); GHQ = General Health Questionnaire.

cates that there is a significant difference between the psychological profiles of participants not infected with HIV and the participants infected with HIV in rural and urban groups at a more global level. In both of these cases, the effect sizes (0.05 and 0.06 respectively) are between small and medium (cf. Steyn & Ellis, 2009), indicating the possibility of practical significance.

Discussion

The aim of this study was to explore the psychosocial health profiles of people with and without HIV and AIDS before their infection status was known to them. The findings show that the participants not infected with HIV are in some respects psychosocially healthier than the participants infected with HIV. In the total group, the participants not infected with HIV had a significantly higher sense of coherence and a greater capacity to succeed in joint community activities than the participants infected with HIV. In the urban group, the participants infected with HIV showed more somatic symptoms and had a lower personal sense of coherence. In the case of the rural group, the participants infected with HIV showed an unexpectedly higher level of positive affect, but also a lower sense of community efficacy and a notable, but statistically non-significant, lower sense of coherence. These traces of lower psychological health shown by the participants infected with HIV even before their status was known to them could be explained from a biological and/or psychological/behavioural perspective.

From a biological perspective, the lower well-being in some instances among the participants infected with HIV may reflect the effect of the virus on their bodies, which in turn influences their psychological well-being. In this case the negative impact of HIV on the participants' psychosocial functioning would not be due to the knowledge of their HIV-infected status, but to biological-physical processes. Some of these biological-physical processes could be part of the symptoms experienced in the minor symptomatic phase, or the major symptomatic phase, or the severe symptomatic phase. Another possibility that should not be disregarded is the effects of HIV on the central and peripheral nervous system (Obe-Larsson, Säll, Salamon, & Allgulander, 2009) or even the possibility that participants may have the AIDS dementia complex (Lezak, Howieson, & Loring, 2004; Widmaier, Raff & Strang, 2004). In the last-mentioned case, however, they would not have been selected for participation in the study because only apparently healthy participants were included in the participant group. The effect of HIV on the central and peripheral nervous system increases during the AIDS phase of the illness culminating in a wide spectrum of neuropsychiatric disorders (Obe-Larsson et al., 2009). According to Lezak et al. (2004) the dementing process may begin insidiously with very subtle symptoms, such as depression or complaints of concentration and memory problems, mental sluggishness, and emotional disturbances, such as irritability, depression, apathy, agitation, and blunt affect.

Alternatively, from a behavioural perspective, some of the participants might have suspected that they were infected with HIV while completing the psychological health questionnaires, and the reality and severity of the expected stigmatization of be-

Table 3

Descriptive Statistics, Results of t-tests, and Effect Sizes for Differences in Psychological Measures Among Participants Infected with HIV and Participants not Infected with HIV in Rural Areas.

	HIV Uninfected		HIV Infected			
	Mean	SD	Mean	SD	t-test p-value	Cohen's d
AFM:PA	31.16	5.43	32.95	5.46	0.006	0.33
AFM:NA	27.37	6.55	26.30	6.85	0.170	0.16
SWLS	15.58	5.75	15.37	6.48	0.762	0.03
CCES	22.85	5.06	21.04	5.29	0.003	0.34
MHCSF:EWB	6.80	3.50	7.43	3.37	0.132	0.18
MHCSF:SWB	10.23	4.61	10.55	4.71	0.571	0.07
MHCSF:PWB	19.48	4.88	18.91	5.13	0.329	0.11
MHCSF	36.54	9.28	36.87	9.09	0.760	0.04
GSE	27.69	4.17	27.96	4.27	0.598	0.06
NGSE	28.65	5.08	28.19	4.95	0.454	0.09
SOC	125.49	25.07	121.77	21.94	0.207	0.15
GHQ:SS	2.43	2.15	2.31	1.88	0.644	0.05
GHQ:AS	2.63	2.22	2.15	1.79	0.060	0.22
GHQ:SD	2.31	1.63	2.33	1.75	0.902	0.01
GHQ:DS	1.79	1.91	1.78	1.73	0.954	0.01
GHQ	9.16	6.53	8.56	5.85	0.442	0.09

Note. N=496 (HIV Uninfected); N=85 (HIV Infected); AFM:PA = Affectometer (Positive Affect); AFM:NA = Affectometer (Negative Affect); SWLS = Satisfaction With Life Scale; CCES = Community Collective efficacy Scale; MHCSF:EWB = Mental Health Continuum (Emotional Well-being); MHCSF:SWB = Mental Health Continuum (Social Well-being); MHCSF:PWB = Mental Health Continuum (Psychological Well-being); MHCSF = Mental Health Continuum Short Form; GSE = General Self-efficacy Scale; NGSE = New General Self-efficacy Scale; SOC = Sense of Coherence Scale; GHQ:SS = General Health Questionnaire (Somatic Symptoms); GHQ:AS = General Health Questionnaire (Anxiety and Insomnia); GHQ:SD = General Health Questionnaire (Social Dysfunction); GHQ:DS = General Health Questionnaire (Severe Depression); GHQ = General Health Questionnaire.

ing infected with HIV, reported by Crawford (1996), may have influenced the results. This possibility might also explain the negative impact on their psychological well-being. Therefore the effect of the participants' suspected HIV-infected status on the results cannot be completely dismissed, and may reflect an anticipatory reactive state. This explanation is similar to research done by Rohleder and Gibson (2006) who explored how women experienced and dealt with AIDS stigma under conditions where they had little formal support. What was clear from their results was the reluctance of the women to be tested even though they suspected that they were HIV infected, due to the extremity of the stigmatization surrounding HIV and AIDS. However, this possibility does not explain the differences that were noted on the specific measures but not on others that also measured facets of well-being.

From a psychosocial and behavioural perspective, it is noteworthy that the differences found on psychosocial measures (SOC and CCES) were indices reflecting a personal sense of social coherence, integration and responsibility, which was lower in the case of infected participants, and might therefore have lead to high-risk social behaviours and consequent infections. Antonovsky (1987, 1993) conceptualizes the core components of the sense of coherence (as measured by the SOC) as comprehensibility, manageability and meaningfulness. In the current study the participants infected with HIV experienced lower levels of such coherence and meaning-finding in their contexts. Carroll et al. (2005) intended their Community Collective Efficacy Scale (CCES) to indicate a person's sense of involvement in collective efficacy in a community network, and argue that it measures a sense of "we-ness" as opposed to "I-ness". The belief in collective efficacy influences the futures people seek to achieve through their collective responsible action and their use of the resources available to them. It may therefore be that participants with a relatively low sense of social coherence, integration and cooperation towards collectively achieving meaningful goals as found in the group of HIV-infected participants, were more inclined to manifest behaviours that would lead to detrimental consequences (in this case HIV infection) for themselves and others. The significantly higher level of positive affect in participants with HIV infection in the rural areas, may suggest a discrepancy between 'feeling good' (i.e., positive affect and satisfaction with life) and 'functioning well' (e.g., having a purpose, experience of meaningfulness in life, engagement in relationships and social contexts, environmental mastery) as distinguished by Keyes (2007). The explanation that HIV-infected participants, may be more inclined to manifest behaviours that would lead to detrimental consequences (i.e. functioning less well) is also in line with the findings of Wissing and Vorster (2000) in another African sample, namely that specific destructive coping strategies are associated with a higher probability of contracting HIV and AIDS. The current finding may be specific to an African community with relatively strong collectivist cultural systems (cf. Wissing & Temane, 2008) and should be explored further in more individualistically oriented groups to see whether the same findings would apply.

Limitations of the Current Study and Suggestions for Future Research

The participants had been newly identified as being infected with HIV and the duration of the infection was not known. Therefore the phase of the illness could not be determined. This limited an understanding of the full extent of the influence that the biological-physical processes in the body had on the psychological well-being of the participants. Further research should be conducted on the proposed social-integration hypothesis, as part of a psychological/behavioural mechanism for explaining the differences in the well-being of the participants infected with HIV and the participants not infected with HIV, especially also in relatively individualistic groups. The higher level of positive affect in the rural group of participants infected with HIV is still unexplained and requires further research. It can for example be explored to what extent a discrepancy between 'feeling good' and 'functioning well' is a risk factor for contracting HIV.

Conclusion

The research question for the current study was whether people with and without HIV infection differ in their psychosocial symptoms and strengths before their HIV status is made known to them. The findings suggest that the participants infected with HIV as a total group had a lower sense of coherence and a lower belief in their efficacy to succeed in joint community activities than the participants not infected with HIV. The urban group of participants infected with HIV had a lower personal sense of coherence that might be of practical significance, and also showed more somatic symptoms (of small practical significance). Unexpectedly, the rural group of participants infected with HIV experienced practically significantly more positive affect than the participants not infected with HIV, but the participants not infected with HIV had a statistically and practically greater capacity to succeed in joint community activities than the participants infected with HIV. Therefore it can be said that people with and without HIV infection do differ in some respects in their psychosocial symptoms and strengths, even before they know their HIV status. Although these differences are relatively small and of only small and medium practical significance as indicated by the effect sizes, it may be worthwhile to take note of Matthews, Gallo and Taylor (2010) remark that minor associations or differences in samples may be meaningful and informative on a population level.

The current study is the first to our knowledge, to compare the psychosocial health profiles of the participants infected with HIV, who are unaware of their infected status, with those of the participants not infected with HIV, and therefore contributes to the body of knowledge about the possible influence of the virus's biological-physical processes on a person's psychological functioning. An alternative or supplementary explanation of behavioural pathways is also offered, which points to the possible role that the experience of social integration and collective responsibility may play in achieving mutual goals. This might be a strength that protects participants from behaviours which might increase the possibility of becoming infected with HIV. Further research should be done, however, to gain a greater understanding of the discrepancy between the participants' psychosocial profiles in rural and urban areas and those in groups with a relatively stronger individualistic cultural orientation. The role of 'feeling good' versus 'functioning well' in risk behaviours should be explored further. Proactive intervention programmes can be implemented and evaluated on a community level with a specific focus on coping skills, relationship building, and finding meaning and engagement in community activities. Such programmes may help participants with and without HIV infection to develop behaviour conducive to greater bio-psychosocial health and well-being.

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