
A Cross-Cultural Comparison of Psychological Distress Among Individuals Living With HIV in Atlanta, Georgia, and Eldoret, Kenya

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Abstract

Elevated psychological distress during HIV infection has been consistently correlated with negative HIV-related health outcomes in studies conducted in various regions of the world. This study was conducted to compare the nature and range of psychological distress among HIV-infected individuals who had sought mental health care as part of their HIV care in Kenya and the United States. The Brief Symptom Inventory (BSI) was completed by 234 individuals with HIV in Atlanta, Georgia, USA, and 284 in Eldoret, Kenya. The US-based sample expressed markedly higher levels of psychological distress symptoms on the anxiety, depression, interpersonal sensitivity, obsessive-compulsive, and psychoticism dimensions, as well as the overall global severity index. Substantial proportions of both the US and Kenya cohorts expressed higher levels of somatization and paranoid ideation that suggested further psychological evaluation. This study revealed psychological distress expression varied drastically among individuals who self-enrolled into HIV-related mental health care within two different care infrastructures.

Keywords

psychological distress, HIV/AIDS, cross-cultural comparisons, Kenya

Introduction

The AIDS epidemic continues to devastate diverse communities throughout the world, as an estimated 33.2 million people are living with HIV. Although significant medical and public health-related advancements have been made, annually there are an estimated 5 million new HIV infections worldwide, with 1.7 million in sub-Saharan Africa and 40,000 in the United States.¹ There is an urgent need to slow the rate of HIV infections and to ensure that public health systems are responsive to the needs of those who become infected.

There is a significant and growing body of literature that views psychological distress as a correlate to negative HIV-related health outcomes, such as medication nonadherence, lack of condom use, and risky drug use patterns.²⁻⁶ To improve long-term care and prevent new infections, an initial response to infection should incorporate mental health assessment to allow for appropriate interventions and prevention efforts to be developed and delivered early in the disease.^{7,8} As HIV care infrastructures have been developed, few efforts have been able to focus on developing accessible mental health care, due to the urgency of medical care provision.⁹ In the United States, there has been an effort to incorporate more comprehensive

prevention, care, and treatment systems in high HIV-prevalent and resource-rich environments to respond to the changing needs of living with HIV disease.¹⁰ Mental health care services have been incorporated in these systems that have been established in the United States, yet much development is still occurring in countries that are struggling to provide HIV-related medical care and treatment. Traditionally, mental health care has been provided for the primary purpose of facilitating improvements in psychological function, yet in the

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specific context of HIV, it has also been provided for its potential to support an individual's ability to become connected with and remain engaged in other HIV-related services.¹¹

There is a growing body of literature that has measured psychological distress in sub-Saharan Africa primarily in clinical populations, both HIV-infected¹²⁻¹⁵ and noninfected.¹⁶⁻¹⁹ Comparing levels and types of psychological distress across cultures questions the validity of how distress is defined and experienced. Many studies conducted in sub-Saharan African have tested the validity and reliability of established instruments, such as postpartum depression²⁰ and overall distress and function.^{13,15} Additionally, studies have qualitatively assessed the validity of these symptoms to understand the role of mental health and disorders in a cultural context where this may be a new construct. Several of those studies have found that depressive symptoms are more often presented somatically^{14,15,18,21} and more severe symptoms have been expressed similarly to previously studied cultural contexts.^{19,21}

Cross-cultural assessments of psychological distress have been conducted to understand the differences in expression of distress, factors associated with higher levels of distress, and overall comprehension of how mental illness is conceptualized and operationalized in different cultural contexts. This study was conducted to compare the nature and range of psychological distress symptoms among HIV-infected individuals who have sought mental health care as a component of their HIV-related care in Eldoret, Kenya, and Atlanta, GA, USA.

Methods

Study participants were individuals who had self-enrolled into HIV-related mental health care services either in Eldoret, or in Atlanta. Mental health care services in both locations consisted of psychosocial support groups. This study was approved by Institutional Review Board of Indiana University-Bloomington and the Institutional Research and Ethics Committee at Moi University School of Medicine in Kenya.

Data Collection in Atlanta, Georgia

Data were collected from individuals living with HIV who had sought mental health care at a community-based, HIV-related mental health clinic in Atlanta, between May 2005 and May 2006. All data were collected as part of their initial mental health care visit; participants could complete the study instruments in either English or Spanish. Those who were unable to read the instruments were able to have a clinician assist them with completion of the instrument. All participants provided consent for data from their assessment to be used for research and evaluation purposes, and the response rate for those included in the analyses presented in this article was 100%.

Data Collection in Eldoret, Kenya

The Kenyan portion of this study was conducted by Kenyan and US researchers who are affiliated with the Academic

Model Academic Model Providing Access to Healthcare (AMPATH) in Eldoret, and Bloomington.^{22,23} As one of the core components of this program, the AMPATH Support Network serves as a series of HIV-related psychosocial support groups that were established over the past 5 years. Questionnaires were completed during a 1-week period by AMPATH support group members in November 2005. While this was not a baseline measurement of psychological distress upon entry into mental health care, it offered an initial cross-sectional measure of the range and levels of distress experienced by this sample. The questionnaires were self-administered and those who were unable to read the instruments were able to have a research assistant help them with completion of the instrument.

Random Selection

For these analyses, 75% of the Kenyan sample and the US sample were randomly selected to participate in the cross-cultural comparisons. A total of 284 Eldoret-based participants were included in these analyses (total original sample, $n = 397$). The Atlanta sample consisted of 234 randomly selected individuals that was collected during May 2005 and April 2006 as a baseline measure (total original sample, $n = 300$). Random selection was conducted to minimize the selection bias of these 2 cross-sectional samples that were collected during similar timeframes.

Measures

Participants completed measures of demographic characteristics (gender, age, race, ethnicity, tribal affiliation, sexual orientation, educational level, and income) and physical health status characteristics (HIV serostatus, presence of AIDS diagnosis, and CD4 count).

Psychological distress symptoms. The Brief Symptom Inventory (BSI) was selected to measure psychological distress symptoms based on its established reliability and validity in Western cultures and use with populations with HIV/AIDS.^{11,15,24-29} Research suggests that the BSI is a valid and reliable instrument for obtaining psychological health status data from adult populations, with internal consistency ranging from a low of 0.71 on the psychoticism dimension to a high of 0.85 on the depression dimension.^{24,30,31} The BSI was found to be a reliable and valid measure specifically in this cultural environment; the results are discussed in detail elsewhere.³² The BSI measures psychological distress across 9 dimensions and 3 global indices. The raw scores of the subscales range from 0 to 4. The scale developers also calculated a t score that is generated to normalize and account for gender differences in distress levels and scores range from 30 to 80.^{30,31} For comparison purposes, both the raw and t scores were used in these analyses. The scale developers created a measure of "caseness" where t scores for each dimension that are >63 indicate further psychological evaluation is recommended.³¹

Table 1. Demographic Characteristics by Sample

	Eldoret (n = 284)		Atlanta (n = 303)		P Value
	Mean	SD	Mean	SD	
Age	36.5 (n = 268)	8.2	42.3 (n = 234)	9.3	.001
Female	194 (n = 253)	72.4	52 (n = 106)	22.2	.001
Number of children	3.3	2	2.5	1.6	.001
Relationship status	(n = 268)	%	(n = 232)	%	
Married	104	38.8	29	12.5	.001
Divorced	25	9.3	25	10.8	
Single	61	22.8	141	60.8	
Significant other/partner	2	0.8	32	13.8	
Widow	76	28.4	5	2.2	
Employment status	(n = 250)	%	(n = 207)	%	
Full time	28	5.5	36	15.4	
Part time	21	4.2	31	13.2	
Unemployed	201	80.4	59	25.2	
Receives disability benefits	NA	NA	81	34.6	
Race/ethnicity			224		
African American			135	55.7	
Caucasian			54	10.7	
Other			35	6.9	
Hispanic			55	10.9	
Education	(n = 272)	%	(n = 234)	n	%
None	13	2.6	1st-6th grade	7	3.0
Standard 1-3	18	3.6	7th-11th grade	61	26.1
Standard 4-8	111	21.9	High school graduate	63	26.9
Form 1-2	40	7.9	Some college	58	24.8
Form 3-4	86	17.0	College graduate	39	16.7
University	4	0.8	Some graduate school	6	2.6

NA, not applicable.

Data Analysis

Bivariate analyses were conducted to assess the demographic and health status characteristics of the sample and analyses of variance (ANOVAs) were used to conduct the comparisons between the BSI scores of each of the study samples. Two-way ANOVAs were conducted to examine the interaction between each of the demographic variables (employment status, age, and marital status), cohort location, and their effect on levels of psychological distress. Both BSI raw scores and *t* scores were used to conduct comparisons to assess the impact of normalizing the levels of distress, because little is understood of the expression of distress in this context. Employment status was dichotomized (employed or unemployed) and age was categorized (18-29, 30-39, 40-49, and >50 years). All univariate tests were analyzed at a 95% confidence interval and all analyses were conducted with Statistical Package for the Social Sciences (SPSS) version 15.0.

Results

Participant Characteristics

The US- and Kenya-based samples reflected much of the regional HIV prevalence patterns, specifically among those receiving HIV care. The Eldoret cohort consisted of more

women than the Atlanta cohort (72% vs 22%; $P < .001$). The overall mean age of the sample was 39.1 years, though the Eldoret sample was younger than the Atlanta sample (36.5 vs 42.3 years; $P < .001$). The Eldoret participants were more often married (38.8% vs 12.5%) and widowed (28.4% vs 2.2%), while more Atlanta participants reported being single (60.8% vs 22.8%; $P < .001$). The majority of the Eldoret sample had children (94.4%; $n = 253$), while just under half ($n = 106$) of the Atlanta sample reported having children. In addition, the number of children in the Eldoret sample was significantly larger than the Atlanta sample (3.3 vs 2.5; $P < .001$).

The majority of the Eldoret sample reported either completing standard 4 to 8 (equivalent to the US elementary school grade 8; 21.9%; $n = 111$) or form 3 to 4 (equivalent to the US high school grade 12; 17.0%; $n = 86$). Most of the sample from Atlanta had either completed high school (26.9%; $n = 63$) or some college (24.8%; $n = 58$). Employment status among the samples was low. More Eldoret participants reported being unemployed (80.4% vs 25.5%; $P < .001$), yet 34.6% ($n = 81$) of the Atlanta sample reported receiving disability benefits, which are not comparable in Kenya. Table 1 provides further detailed comparisons.

HIV-Related Characteristics

The median CD4 counts across the overall sample was 336.5 cells/mm³ (interquartile range [IQR]: 189.0-497.0) and were also

Table 2. HIV-Related Characteristics of the Samples

	Eldoret			Atlanta			P
	n	Mean	SD	n	Mean	SD	
Diagnosed with AIDS		130	43.6%		99	29.2%	.001
Length of time with HIV (months)	249	28.6	28.8	220	283.3	200.9	.001
Length of time with AIDS (months)	117	23	22.6	67	219.9	151.8	.001
CD4 count cells/mm ³	234	325.6	221.8	156	366.4	224.6	.001
Overall health (SF36 of 100)	260	58.9	29.4	210	52.4	26.2	.01
Length of time in mental health care	253	16.4	15.5	234	64.3	8.7	.001

Table 3. Brief Symptom Inventory (BSI) Scores by Dimension of Psychological Distress (Raw Scores)

	Eldoret			Atlanta			P Value
	n	Mean	SD	n	Mean	SD	
Anxiety	237	1.1	0.9	208	1.5	1.1	.001
Depression	231	1.1	1.0	208	1.8	1.1	.001
Interpersonal sensitivity	237	1.2	1.0	207	1.6	1.2	.001
Hostility	245	0.9	0.8	208	1.1	0.9	.045
Obsessive-compulsive	230	1.3	0.9	208	1.7	1.1	.001
Paranoid ideation	240	1.4	1.0	208	1.5	1.0	.81
Phobic anxiety	241	0.8	0.8	208	1.0	1.0	.182
Psychoticism	243	1.0	0.8	207	1.4	1.0	.001
Somatization	237	1.2	0.8	208	1.2	1.0	.49
Global severity index	150	1.0	0.7	208	1.4	0.9	.001

Table 4. Brief Symptom Inventory (BSI) Scores by Dimension of Psychological Distress (*t* Score)

	Eldoret			Atlanta			P
	n	Mean	SD	n	Mean	SD	
Anxiety	233	43.3	9.3	204	49.2	11.6	.001
Depression	227	43.2	9.1	204	50.4	10.3	.001
Hostility	241	47.7	8.5	204	49.8	8.5	.02
Interpersonal sensitivity	234	46.2	9.7	203	50.5	11.3	.001
Obsessive-compulsive	227	47.2	9.6	204	51.0	11.6	.001
Paranoid ideation	236	53.9	9.7	204	53.2	8.8	.41
Phobic anxiety	237	50.5	8.6	204	51.4	10.5	.33
Psychoticism	239	47.8	9.3	203	52.9	11.3	.001
Somatization	235	54.0	9.1	204	55.8	10.2	.06
Global severity index	148	45.0	9.7	204	54.7	38.2	.003

similar in the 2 groups even when CD4 counts were dichotomized by above and below 200 cells/mm³ (see Table 2). More participants reported being diagnosed with AIDS from Eldoret (129 vs 67; $P < .001$). Analyses of the relationships between these demographic and clinical characteristics are described elsewhere.³³

Psychological Distress

Overall, this study revealed comparably low levels of psychological distress as defined by the BSI scale developers when examining the actual means of each dimension and overall severity index as shown in Tables 3 (raw scores) and 4

(*t* scores). The Atlanta sample reported higher levels of psychological distress, as defined by the BSI, across the anxiety ($P < .001$), depression ($P < .001$), interpersonal sensitivity ($P < .001$), obsessive-compulsive ($P < .001$), and psychoticism dimensions ($P < .001$), as well as the global severity index ($P < .001$) when analyzing BSI raw scores. Minimal changes occurred when analyses were conducted with *t* scores to compare group differences. Hostility ($P = .02$) was markedly higher in the Atlanta sample when controlling for gender and normative sample differences.

Substantial proportions of the Atlanta sample met the criteria for further psychological evaluation. The paranoid

Table 5. Brief Symptom Inventory (BSI) "Caseness" by Dimension^a

	Eldoret			Atlanta			P
	n	Mean	SD	n	Mean	SD	
Anxiety	6	65.2	2.0	31	67.1	4.1	.29
Depression	5	65.8	2.3	32	66.3	2.7	.73
Hostility	10	66.4	3.0	20	67.2	4.1	.61
Interpersonal sensitivity	9	66.9	2.8	33	67.6	3.9	.61
Obsessive-compulsive	9	67.1	3.8	31	69.6	6.0	.25
Paranoid ideation	37	66.5	3.6	41	67.0	4.0	.56
Phobic anxiety	19	67.0	2.8	31	67.7	5.0	.55
Psychoticism	15	66.9	4.7	38	69.6	4.8	.07
Somatization	34	68.1	3.7	55	68.5	4.0	.70
Global severity index	6	66.5	2.7	45	80.2	74.7	.67

^a As defined by a BSI score of >63.

Table 6. Proportion of Sample That Meet "Caseness"^a

	Eldoret		Atlanta	
	n	%	n	%
Anxiety	6	2.6	31	15.2
Depression	5	2.2	32	15.7
Hostility	10	4.1	20	9.8
Interpersonal sensitivity	9	3.8	33	16.3
Obsessive-compulsive	9	4.0	31	15.2
Paranoid ideation	37	15.7	41	20.1
Phobic anxiety	19	8.0	31	15.2
Psychoticism	15	6.3	38	18.7
Somatization	34	14.5	55	27.0
Global severity index	6	4.1	45	22.1

^a As defined by a BSI score of >63.

ideation and somatization dimensions had the largest proportions of participants meeting "caseness" for both the Atlanta and Eldoret samples. About 20% (n = 41) of the Atlanta sample and 15.7% (n = 37) met the criteria for paranoid ideation. High levels of somatization were expressed by 27.0% (n = 55) and 14.5% (n = 34) of the samples, Atlanta and Eldoret, respectively. A comparison of participants who met caseness by dimension is shown in Table 5. There were no significant differences between the 2 groups by caseness. The proportion of the samples meeting caseness criteria are shown in Table 6.

Factors that have been documented as having significant influence on levels of distress include being employed, male, young, and having a significant other.^{34,35} In this study, few significant interactions were found between cohort location and these categorical demographic characteristics. We examined the interaction between each of the demographic variables (employment status, age, and marital status), cohort location, and their effect on levels of psychological distress. Employed participants from Atlanta had markedly higher levels of

obsessive-compulsivity symptoms than either their unemployed (Atlanta or Eldoret) or employed counterparts (Eldoret; $f = 4.92$; $P = .03$). Younger participants (18-29 years) in the Eldoret sample had significantly lower levels of somatization than the younger Atlanta and older (30-39, 40-49 years) Atlanta and Eldoret cohorts ($f = 4.43$; $P = .004$). Higher levels of psychoticism occurred among the Atlanta sample who reported being single as compared to being divorced or widowed in the Atlanta and Eldoret cohorts ($f = 3.16$; $P < .05$).

Discussion

The findings of this study reveal higher levels of psychological distress expressed in the US sample than the Kenyan sample of individuals with HIV who are seeking mental health care as a component of their HIV-related care. The participant characteristics mimicked the national epidemic patterns in both the United States and Kenya with more men presenting for care, being older and unmarried in Atlanta, while more women

with HIV presented for care, a larger majority of individuals who were married and younger in the Eldoret sample. Sociodemographic factors associated in previous research with higher levels of psychological distress among HIV-infected populations did not have strong associations to psychological distress in this study. This comparison was conducted to offer insight into how systems of care may need to be established to respond to needs, as many have been influenced by the experiences of those in countries like the United States and are currently being established.

Historically, depression has been noted both as nonexistent and widespread throughout Africa.³⁶ Previous research has found that the role of the environment and culture affects psychiatric disorder definitions differently.³⁶⁻³⁸ In Kenya, it was found that among the approximately 40 tribes defining mental illness included traditional beliefs, where disorders are caused by supernatural powers, punishments for errs of past family members, and/or a result of being bewitched, as well as a more westernized understanding of mental illness.^{9,38} In this study, the US-based cohort expressed levels of psychological distress more intensely than the Kenya-based cohort. For many, if not all, of the participants in both cohorts, this was the first experience with mental health intervention. Therefore, the measurements most likely reflect the first time individuals were evaluating each symptom explored in the assessment. It does not seem these findings would be an outcome of having experience in communicating psychological distress more effectively. What may differ across cultures in this study was the expression of distress through a lens of HIV disease.¹⁵ This may play a role in the differences in expression of symptoms.

Markedly higher levels of psychological distress across the dimensions of anxiety, depression, interpersonal sensitivity, obsessive-compulsivity, psychoticism, and the global severity index occurred in the US-based cohort. These levels indicate that while the Kenyan sample self-enrolled into HIV-related mental health care, overall their distress levels were relatively low. Regardless, self-enrolling into care suggests that individuals are experiencing a level of distress that is significant. In a cultural environment, such as Eldoret, Kenya, researchers would expect that the expression of psychological distress would be elevated by daily survival challenges, such as housing, food, medical, and clothing needs. Yet, social and cultural expectations may affect these levels conversely. For example, Kenyans commonly greet others with a “how are you” and the response is consistently “fine,” regardless of current circumstances. Perhaps, expressing distress is uncommon and to expect thorough disclosure of these symptoms is unrealistic.

Previous research has found that interpersonal relationships, poverty, and child care have been related to elevated levels of depression. Among a rural Kikuyu population in Kenya, it was found that marital status, income, education, age, and gender influenced levels of depression and anxiety.³⁹ These interrelated factors may describe relationships between dimensions of psychological distress and life status that may serve as protective factors.

Employment has been seen as a protective factor for many individuals as a way to prevent increased distress due to financial stressors. In this study, we found that there were higher levels of obsessive-compulsivity among the Atlanta cohort that was employed. This may indicate the need to alleviate financial burden, expressing normalcy while living with HIV, and/or continue leading a productive life. Higher levels of somatization occurring among the older cohorts may indicate a challenge in expressing symptoms of psychological distress.⁴⁰ Somatic expression of distress has been documented as a method commonly used among individuals who have not experienced these types of services previously.^{19,21,40,41} Conversely, symptoms of somatization are unclear when they are related to a sample of individuals with HIV, due to the potential presence of physical pain reported. Marital status related to markedly higher levels of psychoticism among the Atlanta sample who reported being unmarried. Symptoms of psychoticism typically relate to little stability, perhaps schizophrenic-related diagnoses and, therefore, are difficult to manage relationships.

This study revealed markedly different rates of psychological distress among individuals with HIV who recently self-enrolled into HIV-related mental health care within an HIV-care infrastructure in 2 very different cultural, social, and physical environments. These findings represent a subsample of HIV-infected individuals; they also offer initial insight into nature and range of psychological distress among these care-engaged samples. Of interest, each cohort matched their respective national epidemic, which strengthened the validity of these samples. While few sociodemographic factors were related to elevated levels of distress between the cohorts, understanding the limited role that these factors may play is additionally important when developing infrastructures to include mental health care in the continuum of HIV care.

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References

1. Joint United Nations Program on HIV/AIDS/World Health Organization. *2007 AIDS Epidemic Update 2007*.
2. Arnsten JH, Demas PA, Grant RW, et al. Impact of active drug use on antiretroviral therapy adherence and viral suppression in HIV-infected drug users. *J Gen Intern Med*. 2002;17(5):377-381.
3. Paterson DL, Swindells S, Mohr J, et al. Adherence to protease inhibitor therapy and outcomes in patients with HIV infection. *Ann Intern Med*. 2000;133(1):21-30.

4. Singh N, Squier C, Sivek C, Wagener M, Nguyen MH, Yu VL. Determinants of compliance with antiretroviral therapy in patients with human immunodeficiency virus: prospective assessment with implications for enhancing compliance. *AIDS Care*. 1996; 8(3):261-270.
5. Tucker JS, Burnam MA, Sherbourne CD, Kung F-Y, Gifford AL. Substance use and mental health correlates of nonadherence to antiretroviral medications in a sample of patients with human immunodeficiency virus infection. *Am J Med*. 2003;114(7): 573-580.
6. Janssen RS, Holtgrave DR, Valdiserri RO, Shepherd M, Gayle HD, De Cock KM. The serostatus approach to fighting the HIV epidemic: prevention strategies for infected individuals. *Am J Public Health*. 2001;91(7):1019-1024.
7. Zinkernagel C, Taffé P, Rickenbach M, et al. Importance of mental health assessment in HIV-infected outpatients. *J Acquir Immune Defic Syndr*. 2001;28(3):240-249.
8. Kalichman SC, Rompa D, Cage M. Group intervention to reduce HIV transmission risk behavior among persons living with HIV/AIDS. *Behav Modif*. 2005;29(2):256-285.
9. Kiima DM, Njenga FG, Okonji MM, Kigamwa PA. Kenya mental health country profile. *Int Rev Psychiatry*. 2004; 16(1/2):48-53.
10. Substance Abuse and Mental Health Services Administration. Cultural competence standards in managed care mental health services: four underserved/underrepresented racial/ethnic groups. <http://www.mentalhealth.samhsa.gov/publications/allpubs/sma00-3457/> Accessed October 25, 2005.
11. Reece M. HIV-related mental health care: factors influencing dropout among low-income, HIV-positive individuals. *AIDS Care*. 2003;15(5):707.
12. Reece M, Shacham E, Monahan P, et al. Psychological distress symptoms presented by individuals seeking HIV-related psychosocial support in Western Kenya. *AIDS Care*. 2007; 19(10): 1194-1200.
13. Kaaya SF, Fawzi MCS, Mbwapo JK, Lee B, Msamanga GI, Fawzi W. Validity of the Hopkins Symptom Checklist-25 amongst HIV-positive pregnant women in Tanzania. *Acta Psychiatr Scand*. 2002;106(1):9-19.
14. Olley BO, Seedat MB, Nei DG, Stein DJ. Predictors of major depression in recently diagnosed patients with HIV/AIDS in South Africa. *AIDS Patient Care STDs*. 2004;18(8): 481-487.
15. Shacham E, Reece M, Monahan PO, Omollo O, Monahan PO, Ojwang C. Measuring psychological distress symptoms in individuals living with HIV in western Kenya. *J Mental Health*. 2007;99999(1):1-11.
16. Collins PY. Dual taboos: sexuality and women with severe mental illness in South Africa. Perceptions of mental health care providers. *AIDS Behav*. 2001;5(2):151-161.
17. Carson AJ, Sandler R, Owino FN, Matete F, Johnstone E. Psychological morbidity and HIV in Kenya. *Acta Psychiatr Scand*. 1998; 97(4):267-271.
18. Okello ES, Neema S. Explanatory models and help-seeking behavior: pathways to psychiatric care among patients admitted for depression in Mulago Hospital, Kampala, Uganda. *Qual Health Res*. 2007;17(1):14-25.
19. Ice G, Yogo J. Measuring stress among Luo elders: development of the Luo Perceived Stress Scale. *Field Methods*. 2005;17(4): 394-411.
20. Uwakwe R. Affective (depressive) morbidity in puerperal Nigerian women: validation of the Edinburgh postnatal depression scale. *Acta Psychiatr Scand*. 2003;107(4):251-259.
21. Okulate G, Olayinka MO, Jones OBE. Somatic symptoms in depression: evaluation of their diagnostic weight in an African setting. *Br J Psychiatry*. 2004;184:422-427.
22. Wools-Kaloustian K, Kimaiyo S, Diero L, et al. Viability and effectiveness of large-scale HIV treatment initiatives in sub-Saharan Africa: experience from western Kenya. *AIDS*. 2006; 20(1):41-48.
23. Mamlin J, Kimaiyo S, Nyandiko W, Tierney W, Einterz R. Academic institutions linking access to treatment and prevention: case study. In: Perspectives and Practice in Antiretroviral Treatment. Geneva: World Health Organization; 2004.
24. Derogatis LR, Melisaratos N. The Brief Symptom Inventory: an introductory report. *Psychol Med*. 1983;13(3):595-605.
25. Huang FY, Chung H, Kroenke K, Delucchi KL, Spitzer RL. Using the Patient Health Questionnaire-9 to measure depression among racially and ethnically diverse primary care patients. *J Gen Intern Med*. 2006;21(6):547-552.
26. Huang AL, Lee KA, Portillo CJ. Symptom experience and functional status among HIV-infected women. *AIDS Care*. 2003; 15(4):483.
27. Spitzer RL, Kroenke K, Williams JB. and the Patient Health Questionnaire Primary Care Study Group. Validation and utility of a self-report version of PRIME-MD: the PHQ Primary Care Study. *JAMA*. 1999;282(18):1737-1744.
28. Pakenham K, Rinaldis M. The role of illness, resources, appraisal, and coping strategies in adjustment to HIV/AIDS: the direct and buffering effects. *J Behav Med*. 2001;24(3):259-279.
29. Boulet J, Boss MW. Reliability and validity of the Brief Symptom Inventory. *Psychol Assess*. 1991;3(33):433-437.
30. Derogatis LR, Spencer PM. *The Brief Symptom Inventory: Administration, Scoring and Procedures Manual*. Clinical Psychometric Research; Baltimore, MD: Clinical Psychometric Research; 1982.
31. Derogatis LR. *Brief Symptom Inventory (BSI): Administration, Scoring, and Procedures Manual*. National Computer Systems; Minneapolis, MN: National Computer Systems; 1993.
32. Shacham E, Reece M, Monahan PO, et al. Measuring psychological distress symptoms in individuals living with HIV in western Kenya. *J Ment Health*. 2007;99999(1):1-11.
33. Shacham E, Reece M, Ong'or WO, et al. Characteristics of psychosocial support seeking during HIV-related treatment in Western Kenya. *AIDS Patient Care STDs*. 2008;22(7):595-601.
34. Hays RD, Cunningham WE, Sherbourne CD, et al. Health-related quality of life in patients with human immunodeficiency virus infection in the United States: results from the HIV cost and services utilization study. *Am J Med*. 2000;108(9):714-722.
35. Kelly B, Raphael B, Judd F, et al. Suicidal ideation, suicide attempts, and HIV infection. *Psychosomatics*. 1998;39(5):405-415.

36. Good BJ. Studying mental illness in context: local, global, or universe? *Ethos*. 1997;25(2):230-248.
37. Dulaney S, Fiske AP. Cultural rituals and obsessive-compulsive disorder: is there a common psychological mechanism? *Ethos*. 1994;22(3):243-283.
38. Leff J, Sartorius N, Jablensky A, Korten A, Ernberg G. The international pilot study of schizophrenia: five-year follow-up findings. *Psychol Med*. 1992;22(1):131-145.
39. Abbott S, Klein R. Depression and anxiety among rural Kikuyu in Kenya. *Ethos*. 1978;7(2):161-188.
40. Kirmayer L. The body's insistence on meaning: Metaphor as presentation and representation in illness experience. *Med Anthropol Q*. 1992;6(4):323-346.
41. Kirmayer L, Robbins JM, Dowlkind M, Jaffe MJ. Somatization and the recognition of depression and anxiety in primary care. *Am J Psychiatry*. 1993;150(5):734-741.