HHS Public Access

Author manuscript

AIDS Care. Author manuscript; available in PMC 2018 October 11.

Published in final edited form as:

AIDS Care. 2016 December ; 28(12): 1541–1545. doi:10.1080/09540121.2016.1191609.

Socio-demographic correlates of depression and anxiety among female caregivers living with HIV in rural Uganda

Itziar Familiar[a], **Sarah Murray**[b], **Horacio Ruisenor-Escudero**[a], **Alla Sikorskii**[c], **Noeline Nakasujja**[d], **Michael J. Boivin**[a], **Robert Opoka**[e], and **Judith K. Bass**[b]

[a]Department of Psychiatry, Michigan State University, 909 Fee Road, West Fee Hall 321, East Lansing MI 48824 [b]Mental Health Department, Johns Hopkins Bloomberg School of Public Health, 624 N. Broadway Street, Hampton House Room 861, Baltimore MD 21205 [c]Department of Statistics and Probability, Michigan State University, 619 Red Cedar Rd, C423 Wells Hall, East Lansing MI 48824 [d]Department of Psychiatry, College of Health Sciences, Makerere University, Box 7072, Kampala, Uganda [e]Department of Pediatrics and Child Health, College of Health Sciences, Makerere University, PO Box 7072, Kampala, Uganda

Abstract

Women living with HIV are at increased risk for psychosocial distress, especially among social and economically disadvantaged women living in rural areas. Little is known about how social support and wealth impacts the mental health of women caring for young children in low- and middle-income countries. The purpose of this paper was to assess demographic, socio-economic, and social support correlates of depression and anxiety in HIV-infected+ female caregivers living in rural Uganda. Depression and anxiety were assessed using the Hopkins Symptom Checklist (HSCL-25), two-domains of social support (family and community) were measured with the adapted Multidimensional Scale for Perceived Social Support, and wealth was measured using a checklist of material possessions and housing quality among 288 women. Multivariable linear regression models assessed the association of depression and anxiety with demographic and social predictors. Sixty one percent of women reported clinically significant symptoms of depression or anxiety using the standard HSCL-25 cut-off of >1.75. Lower wealth (p=0.01) and family support (p=0.01) were significantly associated with more depressive symptoms, with greater family support being more protective of depression in the highest wealth group (top 20%) compared to the lowest. More anxiety symptoms were associated with lower wealth (p=0.001), lower family support (p=0.02), and higher community support (p=0.003). Economic and social support factors are important predictors of caregiver mental health in the face of HIV disease in rural Uganda. Findings suggest that interventions should consider ways to increase economic opportunities and strengthen family support for HIV+ caregivers.

Corresponding author: Dr. Itziar Familiar, Department of Psychiatry, Michigan State University, 909 Fee Road, West Fee Hall 321, East Lansing MI 48824, Phone: 001(517) 432-4204 | Fax: 001 (517) 432-2893, familiar@msu.edu; ifamiliar@gmail.com.

We declare we have no conflict of interest

Keywords

HIV/AIDS; Uganda; Caregivers; Depression; Anxiety

INTRODUCTION

Rates of depression and anxiety are high among women living with HIV/AIDS (Hatcher et al., 2012; Kaida et al., 2014). Depression among mothers with young children is associated with multiple negative child behavioral and emotional outcomes (Leis, Heron, Stuart, & Mendelson, 2014), cognitive deficits and developmental delays (Black et al., 2010), and malnutrition (Surkan, Kennedy, Hurley, & Black, 2011). Less is known about depression and anxiety of caregivers of young children in poor and HIV-affected communities. Available studies suggest that socially and economically disadvantaged women living in rural areas may be at increased risk for poor mental health (Caroline Kuo & Operario, 2009; C. Kuo & Operario, 2010).

Female HIV-infected caregivers in Sub-Saharan Africa frequently endure difficult living conditions including raising multiple children in an economically deprived environment while dealing with their own illness. Scant empirical research has examined the impact of social and family support on depressive and anxiety symptoms among this population. The effect of social support may differ in resource-poor settings and across cultures, with the buffering effect of social support varying by living conditions and extent of poverty (Moskowitz, Vittinghoff, & Schmidt, 2013). We aimed to assess the relationship of social support and economic wealth on depression and anxiety symptoms among HIV-infected caregivers living in rural communities in Uganda. Understanding factors associated with depression and anxiety symptoms in women caring for young children may inform psychosocial and economic interventions that optimize maternal and child health.

METHODS

Sample and procedures

This secondary analysis utilizes baseline data from 288 HIV-infected women participating in a randomized controlled trial testing the Meditational Intervention for Sensitizing Caregivers (MISC), a one-year program aimed at enhancing child physical and neuropsychological development (Boivin et al., 2013). Details of the parent study are described elsewhere (Bass, Nakasujja, Familiar-Lopez, Sikorskii, Murray,…& Boivin, 2016). Briefly, inclusion criteria for caregivers were being female, aged 18 or older, predominantly taking care of a child aged 2–5 years (median age=3 years), and willing and able to participate in a year of MISC training.

After informed consent, participants responded to a questionnaire administered by trained Ugandan research assistants in one of three local languages (Dhopadhola, Ateso, or Luganda) in a private setting. The Institutional Review Board of Michigan State University and the School of Medicine Research Ethics Committee at Makerere University approved this study.

Measures

Socio-demographic characteristics—Caregiver demographics included age, education level (e.g. highest level of schooling completed), marital status, occupation, and relation to the child. HIV status was established based on clinical data at the health center.

Caregivers' depressive and anxiety symptoms were assessed using the Hopkins Symptom Checklist-25 (HSCL-25)(Hesbacher, Rickels, Morris, Newman, & Rosenfeld, 1980; Winokur, Winokur, Rickels, & Cox, 1984) with each symptom being reported for the prior 2 weeks using a 4-point Likert scale ranging from 1 (not at all) to 4 (all the time). The HSCL-25 depression scale has previously been adapted and validated among adults in HIV-affected Ugandan communities (Bolton et al., 2003; Kaida et al., 2014). Average scores were generated for depression (15 item) and anxiety (10 item) subscales; higher scores indicating greater severity. To estimate a cutoff for clinically relevant symptoms, we averaged all 25 items into a single score; an average HSCL-25 score of 1.75 or higher was considered clinically significant (Kinyanda, Hoskins, Nakku, Nawaz, & Patel, 2011; Tsai et al., 2015). Internal consistency (Cronbach's alpha) was 0.73, and 0.84 for the depression and anxiety subscales, respectively.

Perceived social support was assessed using the Multidimensional Scale for Perceived Social Support (MSPSS) (Dahlem, Zimet, & Walker, 1991; Zimet, Powell, Farley, Werkman, & Berkoff, 1990), previously validated for use in Uganda among HIV-infected and uninfected adults (Nakigudde, Musisi, Ehnvall, Airaksinen, & Agren, 2009) (E. Nakimuli-Mpungu, Musisi, Katabira, Nachega, & Bass, 2011). We adapted the 8 items of the family and friends subscales by asking participants about people in their community, instead of referring specifically to friends. Exploratory factor analysis yielded two factors jointly explaining 55% of the variance: 1) "Family Support" (4 items), and 2) "Community Support", (3 items). One item (*Do you quarrel with members of your family*) did not load on either factor, had high uniqueness (.79) and was excluded from further analyses. Each item is scored with a 4-point Likert scale ranging from 0 (never) to 3 (often). Separate scores for family and community support were constructed as averages of items within the scales; higher scores indicate better social support. Cronbach α for the family and community support subscales were.77 and .63, respectively.

An economic wealth index was constructed from a checklist of 8 material possessions (shoes, radio, mattress, blanket, bicycle, motorcycle, cows, goats) and 6 housing quality items (type of roof, availability of water supply, type of fuel used, frequency of meat in diet and food security). Respondents reported presence/absence of each asset at their homes. Top 20^{th}, middle 60^{th}, and bottom 20^{th} percentiles were defined based on factor scores derived from exploratory factor analysis of the 14 items.

Procedures

Statistical analyses—Initial analyses explored the distribution of caregiver demographics and study variables. General linear and logistic regression models were used to assess univariate associations between the demographics, wealth and social support scales and the depression and anxiety outcomes. Multivariable models were used to explore the effect of

social support on depression and anxiety symptoms controlling for significant demographic and wealth effects. Multivariate models for the social support scales were modelled separately because of collinearity. Interaction terms were used to assess the extent to which family and social support moderated the association between wealth and depression and anxiety symptoms. All analyses were done using STATA software, version 12 (College Station, 2010).

RESULTS

Demographic characteristics and average depression and anxiety scores are presented in Table 1. Univariate analyses indicated depression severity was significantly associated with being single/divorced (p=0.004) compared to being married and being in the poorest 20%, compared with middle 60% of the wealth index (p=0.001). Educational level, employment, and ARV treatment status were not associated with depression symptoms. Findings were similar for clinically relevant symptoms. For anxiety severity, higher levels of wealth were significantly associated with decreased symptoms. (p=0.001) and more community support was significantly associated with less severity (p= 0.02).

In multivariate models for family support (Table 2), depression symptoms were lower among caregivers reporting greater wealth (p<0.001) and greater family support (p=0.03). Models including the interaction between wealth and family support indicated that greater family support was more protective of depression in the highest wealth group compared to the lowest (p=0.03). Greater wealth was also associated with fewer anxiety symptoms (p=0.001) and family support was no longer significant once wealth was included.

Greater community support (Table 3) was positively associated with higher anxiety symptoms (p=0.02). When interactions are added, findings were similar to those for depression: greater community support (p=0.001) was more protective against less anxiety symptomatology in the highest wealth category (top 20%) compared to the lowest (lower 20%).

DISCUSSION

Our findings suggest that low social support and relative poverty are associated with elevated depression and anxiety symptoms. The proportion of women classified with probable clinically relevant depression/anxiety symptoms (61%) was higher than prior reports among HIV-infected adults in Uganda (ranging from 8.1% to 47%) (Kaharuza et al., 2006; Kinyanda et al., 2011; Nakasujja et al., 2010; E. Nakimuli-Mpungu et al., 2011). One reason may be that HIV-infected women in rural communities are frequently affected by poverty and social isolation, increasing their vulnerability to distress (Kidman & Thurman, 2014). Typically, women in these communities are smallholder farmers, with food production mainly for subsistence livelihood. Individuals with HIV disease may be too sick to work, perpetuating a cycle of poverty and unemployment linked to inability to access food and other assets (C. Kuo & Operario, 2010).

The relationship we found between community and family support and depression and anxiety symptoms concurs with other Ugandan studies (Kinyanda et al., 2011; E. Nakimuli-

Mpungu et al., 2011) and elsewhere in Sub-Saharan Africa (Brandt, 2009). A recent qualitative study found informal social networks can be an important resource for coping with financial and health adversities among HIV+ individuals (Casale, 2011).

We found that women with higher levels of anxiety reported higher levels of community support. One explanation is that in our study women may seek out community support to deal with crises and enhancing social support may prevent or overcome anxiety symptoms.

A few limitations should be noted. The cross-sectional nature of the data and the lack of an HIV negative reference group preclude causal associations. Although it has been suggested that perceived social support could be more important than received social support (Beals, Peplau, & Gable, 2009), without a longitudinal study we are unable to explore causality or bi-directionality. Finally, although the HSCL-25 has been used in Uganda, the cut-off score has not been validated in this study population.

CONCLUSIONS

Our findings suggest that female caregivers of young children living with HIV in rural Uganda experience the burden of poverty and depression and anxiety. Interventions addressing economic factors and/or social support among HIV-affected populations have shown encouraging results (Etheldreda Nakimuli-Mpungu et al., 2015) and should be explored further.

Acknowledgments

We wish to acknowledge the women that participated in the study and the research assistants who worked collaboratively with them to collect data.

Funding

This research was made feasible through a grant from the National Institute of Health, Institute of Child Health & Human Development, USA (R01HD070723-01).

References

1. Bass J, Nakasujja N, Familiar-Lopez I, Sikorskii A, Murray SM, Opoka RO, Augustinavicius J, Boivin MJ. Association of caregiver quality of care with neurocognitive outcomes in HIV-infected children aged 2–5 years in Uganda. AIDS Care. 2016; 28(SUppl 1):76–83. [PubMed: 26888568]
2. Beals KP, Peplau LA, Gable SL. Stigma management and well-being: the role of perceived social support, emotional processing, and suppression. Pers Soc Psychol Bull. 2009; 35(7):867–879. DOI: 10.1177/0146167209334783 [PubMed: 19403792]
3. Black RE, Cousens S, Johnson HL, Lawn JE, Rudan I, Bassani DG, … Cibulskis R. Global, regional, and national causes of child mortality in 2008: a systematic analysis. The Lancet. 2010; 375(9730):1969–1987.
4. Boivin MJ, Bangirana P, Nakasujja N, Page CF, Shohet C, Givon D, … Klein PS. A year-long caregiver training program improves cognition in preschool Ugandan children with human immunodeficiency virus. J Pediatr. 2013; 163(5):1409–1416. e1401–1405. DOI: 10.1016/j.jpeds.2013.06.055 [PubMed: 23958115]
5. Bolton P, Bass J, Neugebauer R, Verdeli H, Clougherty KF, Wickramaratne P, … Weissman M. Group interpersonal psychotherapy for depression in rural Uganda: a randomized controlled trial. JAMA. 2003; 289(23):3117–3124. [pii]. DOI: 10.1001/jama.289.23.3117289/23/3117 [PubMed: 12813117]

6. Brandt R. Putting mental health on the agenda for HIV+ women: a review of evidence from sub-Saharan Africa. Women & health. 2009; 49(2–3):215–228. DOI: 10.1080/03630240902915044 [PubMed: 19533511]
7. Casale M. 'I am living a peaceful life with my grandchildren. Nothing else'. Stories of adversity and 'resilience' of older women caring for children in the context of HIV/AIDS and other stressors. Ageing and Society. 2011; 31(08):1265–1288.
8. College Station, T. X. S. L. P. Stata Statistical Software: Release 11. 2010; 11
9. Dahlem NW, Zimet GD, Walker RR. The Multidimensional Scale of Perceived Social Support: a confirmation study. J Clin Psychol. 1991; 47(6):756–761. [PubMed: 1757578]
10. Hatcher AM, Tsai AC, Kumbakumba E, Dworkin SL, Hunt PW, Martin JN, … Weiser SD. Sexual relationship power and depression among HIV-infected women in rural Uganda. PloS one. 2012; 7(12):e49821. [PubMed: 23300519]
11. Hesbacher PT, Rickels K, Morris RJ, Newman H, Rosenfeld H. Psychiatric illness in family practice. J Clin Psychiatry. 1980; 41(1):6–10.
12. Kaharuza FM, Bunnell R, Moss S, Purcell DW, Bikaako-Kajura W, Wamai N, … Mermin J. Depression and CD4 cell count among persons with HIV infection in Uganda. AIDS Behav. 2006; 10(4 Suppl):S105–111. DOI: 10.1007/s10461-006-9142-2 [PubMed: 16802195]
13. Kaida A, Matthews LT, Ashaba S, Tsai AC, Kanters S, Robak M, … Bangsberg DR. Depression during pregnancy and the postpartum among HIV-infected women on antiretroviral therapy in Uganda. J Acquir Immune Defic Syndr. 2014; 67(Suppl 4):S179–187. DOI: 10.1097/qai.0000000000000370 [PubMed: 25436816]
14. Kidman R, Thurman TR. Caregiver burden among adults caring for orphaned children in rural South Africa. Vulnerable Child Youth Stud. 2014; 9(3):234–246. DOI: 10.1080/17450128.2013.871379 [PubMed: 24999368]
15. Kinyanda E, Hoskins S, Nakku J, Nawaz S, Patel V. Prevalence and risk factors of major depressive disorder in HIV/AIDS as seen in semi-urban Entebbe district, Uganda. BMC psychiatry. 2011; 11:205.doi: 10.1186/1471-244x-11-205 [PubMed: 22208452]
16. Kuo C, Operario D. Caring for AIDS-orphaned children: A systematic review of studies on caregivers. Vulnerable Children and Youth Studies. 2009; 4(1):1–12.
17. Kuo C, Operario D. Caring for AIDS-orphaned children: an exploratory study of challenges faced by carers in KwaZulu-Natal, South Africa. Vulnerable Child Youth Stud. 2010; 5(4):344–352. DOI: 10.1080/17450128.2010.516372 [PubMed: 21165153]
18. Leis JA, Heron J, Stuart EA, Mendelson T. Associations between maternal mental health and child emotional and behavioral problems: does prenatal mental health matter? Journal of abnormal child psychology. 2014; 42(1):161–171. [PubMed: 23748337]
19. Moskowitz D, Vittinghoff E, Schmidt L. Reconsidering the effects of poverty and social support on health: a 5-year longitudinal test of the stress-buffering hypothesis. J Urban Health. 2013; 90(1): 175–184. DOI: 10.1007/s11524-012-9757-8 [PubMed: 22948789]
20. Nakasujja N, Skolasky RL, Musisi S, Allebeck P, Robertson K, Ronald A, … Sacktor N. Depression symptoms and cognitive function among individuals with advanced HIV infection initiating HAART in Uganda. BMC psychiatry. 2010; 10:44.doi: 10.1186/1471-244x-10-44 [PubMed: 20537129]
21. Nakigudde J, Musisi S, Ehnvall A, Airaksinen E, Agren H. Adaptation of the multidimensional scale of perceived social support in a Ugandan setting. Afr Health Sci. 2009; 9(Suppl 1):S35–41. [PubMed: 20589159]
22. Nakimuli-Mpungu E, Musisi S, Katabira E, Nachega J, Bass J. Prevalence and factors associated with depressive disorders in an HIV+ rural patient population in southern Uganda. J Affect Disord. 2011; 135(1–3):160–167. DOI: 10.1016/j.jad.2011.07.009 [PubMed: 21851986]
23. Nakimuli-Mpungu E, Wamala K, Okello J, Alderman S, Odokonyero R, Mojtabai R, … Musisi S. Group support psychotherapy for depression treatment in people with HIV/AIDS in northern Uganda: a single-centre randomised controlled trial. The Lancet HIV. 2015; 2(5):e190–e199. [PubMed: 26423001]

24. Surkan PJ, Kennedy CE, Hurley KM, Black MM. Maternal depression and early childhood growth in developing countries: systematic review and meta-analysis. Bull World Health Organ. 2011; 89(8):608–615. DOI: 10.2471/blt.11.088187 [PubMed: 21836759]

25. Tsai AC, Wolfe WR, Kumbakumba E, Kawuma A, Hunt PW, Martin JN, … Weiser SD. Prospective Study of the Mental Health Consequences of Sexual Violence Among Women Living With HIV in Rural Uganda. J Interpers Violence. 2015; doi: 10.1177/0886260514567966

26. Winokur A, Winokur DF, Rickels K, Cox DS. Symptoms of emotional distress in a family planning service: stability over a four-week period. Br J Psychiatry. 1984; 144:395–399. [PubMed: 6722401]

27. Zimet GD, Powell SS, Farley GK, Werkman S, Berkoff KA. Psychometric characteristics of the Multidimensional Scale of Perceived Social Support. J Pers Assess. 1990; 55(3–4):610–617. [PubMed: 2280326]

Table 1

Socio-demographic characteristics, depression and anxiety scores among caregivers living with HIV in Tororo, Uganda (n=288)

Variable	N	%	
Marital status			
Married	199	69	
Single/Divorced	40	14	
Widowed	49	17	
Education level			
None	56	19	
Primary	190	66	
Secondary	39	13	
Technical	3	1	
Employment status			
Farmer	235	82	
Trades/small business/employee	28	10	
Professional	12	4	
Unemployed/house wife	13	4	
Relationship to the child			
Biological mother	281	98	
Other	7	2	
Wealth group			
Lowest 20%	41	14	
Middle 60%	193	67	
Top 20%	53	18	
Probable depression or anxiety	176	61	
On ARV	232	81	
Variable	Mean	SD	Range
Age	33.5	5.8	18–54
Perceived Social Support			
Family support	2.1	0.7	0–3
Community support	1.8	0.7	0–3
Depression score	2.0	0.5	1–3.4
Anxiety score	1.8	0.6	1–4

Table 2

Multiple regression models of depression and anxiety symptoms in HIV+ female caregivers and family support (Tororo, n= 288)

Explanatory variables	**Outcome: depression score**		**Outcome: anxiety score**	
	Models with main effects			
	Coefficient (SE)	**P-value**	**Coefficient (SE)**	**P-value**
Caregiver education (elementary vs. none)	−0.04 (0.05)	0.40	−0.02 (0.06)	0.69
Marital status (single/divorced vs. married)	0.07 (0.04)	0.07	0.02 (0.05)	0.62
Caregiver age (in years)	−0.004 (0.004)	0.39	−0.001 (0.006)	0.15
Wealth category[a]				
Middle 60%	−0.27 (0.08)	**<.01**	−0.23 (0.11)	**0.03**
Top 20%	−0.40 (0.10)	**<.01**	−0.44 (0.13)	**0.001**
Family support	−0.08 (0.04)	**0.03**	−0.08 (0.05)	0.14
	Models with wealth category by family support interaction			
	Outcome: depression score		Outcome: anxiety score	
	Coefficient (SE)	P-value	Coefficient (SE)	P-value
Wealth category[a]*Family support	Difference in slopes for family support by wealth category			
Middle 60%	−0.06 (0.12)	0.60	−0.15 (0.15)	0.33
Top 20%	−0.35 (0.16)	**0.03**	0.59 (0.21)	**0.005**

[a]Reference category for wealth is lower 20%

Table 3

Multiple regression models of depression and anxiety symptoms in HIV+ female caregivers and community support (Tororo, n= 288)

Explanatory variables	**Outcome: depression score**		**Outcome: anxiety score**	
Models with main effects				
	Coefficient (SE)	**P-value**	**Coefficient (SE)**	**P-value**
Caregiver education (elementary vs. none)	−0.03 (0.05)	0.57	0.0001 (0.06)	0.90
Marital status (single/divorced vs. married)	0.08 (0.03)	**0.03**	0.04 (0.05)	(0.38)
Caregiver age (in years)	−0.003 (0.005)	0.43	−0.01 (0.006)	(0.15)
Wealth category[a]				
Middle 60%	−0.27 (0.08)	**<0.001**	−0.22 (0.10)	**0.04**
Top 20%	−0.41 (0.10)	**<0.001**	−0.45 (0.13)	**0.001**
Community support	0.06 (0.04)	0.14	0.13 (0.27)	**<0.0001**
Models with wealth category by community support interaction				
	Outcome: depression score		Outcome: anxiety score	
	Coefficient (SE)	P-value	Coefficient (SE)	P-value
Wealth category[a]*Community support	Difference in slopes for community support by wealth category			
Middle 60%	−0.10 (0.12)	0.40	−0.28 (0.15)	0.07
Top 20%	−0.23 (0.14)	0.10	−0.58 (0.18)	**0.001**

[a]Reference category for wealth is lower 20%