

Older caregivers of children living with HIV or AIDS in Namibia: The association between loneliness, depression, and life satisfaction

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Abstract: Namibia has one of the highest HIV prevalence rates in the world. Older relatives in Namibia are taking the lead role in caring for children living with HIV, or orphaned as their parents had HIV. There has been a growing attention to the well-being and mental health of these older adult caregivers in sub-Saharan Africa; however, there is a lack of information on the intertwined factors such as loneliness and depression to their life satisfaction. Therefore, this study aimed to explore the relationship between loneliness and depression on life satisfaction among older caregivers of children living with HIV or AIDS in rural Namibia. This cross-sectional study recruited 100 Oshiwambo speaking caregivers over age 60 in the Omusati region to complete a study instrument measuring their levels of loneliness, depression and perceived life satisfaction. Using hierarchical regression method, this study found that both loneliness and depression were significantly associated with lower levels of perceived life satisfaction among our sample. Medical care or insurance and awareness of social services were both associated with higher levels of perceived life satisfaction. Social service professionals and policy makers in Namibia should consider designing culturally appropriate interventions aimed at addressing these important mental health related concerns of older rural caregivers.

Keywords: caregiving; older adults; loneliness; depression; life satisfaction; Namibia; HIV/AIDS; Africa

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Introduction

In Southern Africa, the extremely high prevalence rates of HIV/AIDS have had a dramatic impact on the lives of older people. Namibia has one of the highest HIV prevalence rates in the world, with an estimate of 14% for people ages 15-49 (Ministry of Health & Social Services [MoHSS], 2014). This high HIV rate has led to a disproportionate number of both children who are orphaned because one or both of their parents had HIV or AIDS and children whom themselves are living with HIV or AIDS across Sub-Saharan Africa (Joint United Nations Program on HIV/AIDS [UNAIDS], 2014). Extended family members, usually older relatives, are taking the lead role in caring for these children across Southern Africa (Beegle et al., 2008; UNAIDS, 2014; Mhaka-Mutepfa et al., 2014; Zimmer, 2009). This precarious situation is further compounded by a lack of comprehensive care and support for people living with HIV/AIDS and limited formal home-based case assistance for this population. Also, poor infrastructure and overstretched healthcare facilities often cover up the hidden crisis of caregiving work which is shouldered by older adults (Abasiubong et al., 2011; Nadaba-Mbata & Seloiwe, 2000). In rural Namibia, the majority of inhabitants receive their health care services through the government subsidized health care facilities, many of which are not easily accessible, and caregivers must travel long distances (MoHSS, 2014).

In Namibia, older relatives who are usually grandmothers take care of the vast majority of the nearly 200,000 vulnerable grandchildren (children who have lost either one or both parents or legal guardian due to AIDS), sometimes alongside their adult children living with AIDS-related illnesses (Kalomo, Liao, 2018a; Kalomo, & Besthorn, 2018b). Most of these children are below the age of 18 and live in poverty (Namibia Statistic Agency [NSA], 2018). Furthermore, many of these children are living with HIV (MoHSS, 2014; NSA, 2012). While traditionally in Namibia younger generations would provide financial, social, and other support to their grandparents, in the context of HIV, older adults are now increasingly taking on not only the role of caregiver but also the roles of breadwinner for younger generations (Njororai & Njororai, 2013).

There has been growing attention to the well-being of these older adult caregivers in this newly altered sub-Saharan African context. Several studies have found that older caregivers experience a variety of stressors, such as poverty (Ardington et al., 2010; Lekalakala-Mokgele, 2011; Shaibu, 2016; Ssewamala et al., 2012); financial stresses (Kalomo & Liao, 2018a);

caregiver burden (Kalomo, & Besthorn, 2018b); food insecurity (World Food Program, 2019); and HIV-related stigma (Ssengonzi, 2007; Thomas, 2006). There are also a few studies that point to the negative health and mental health effects of caregiving on these older African caregivers (Boon et al., 2010; Kuo et al., 2013; Schatz & Gilbert, 2012). However, while there has been much emphasis on the problems that older African caregivers experience, there has been less attention on older adult caregivers' perceptions of their own lives within the context of caregiving for orphans and vulnerable grandchildren and how these perceptions are associated with their own mental health status. Thus, the current study explores older caregivers' perceptions of their own life satisfaction and examines the associations between life satisfaction with both loneliness and depressive symptoms in rural Namibia. This study's specific investigation on individuals' life satisfaction and its association with loneliness and more complicated mental health status of depressive symptoms would provide a better understanding of this phenomenon.

Literature review

Life satisfaction is a multidimensional social construct that captures the cognitive evaluation of one's life as a whole and is influenced by the political and socio-cultural milieu (Diener, 2005). Life satisfaction is a predictor of longevity, psychiatric morbidity, and mortality (Koivumaa-Honkanen et al., 2000). Some scholars have linked life satisfaction with happiness, and others maintain that it is a central part of human well-being (Haybron, 2000). Previous research has shown that socioeconomic status, social involvement, marital status, education, self-esteem, depression, and locus of control may influence life satisfaction (Melin et al., 2003). Furthermore, studies have found that levels of life satisfaction may be mediated by cultural and social values (Diener & Diener, 2009). Among family caregivers, providing quality care has been identified as a source of perceived life satisfaction (Andren & Elmstahl, 2005). Nolan and Grant (1993) contend that maintaining the dignity, worth, and self-esteem of the person being cared for is a major source of life satisfaction for the caregiver. However, caregiving has also been associated with other factors that are linked with lower life satisfaction, including increased levels of loneliness and increased levels of depression (Boon et al., 2010).

Loneliness and life satisfaction

Studies on caregiving have shown consistent associations between loneliness and perceived life satisfaction, with higher levels of loneliness associated with lower levels of life satisfaction (Beeson, 2003; Boon et al., 2010; Ekwall et al., 2005). Loneliness is the subjective experience of having inadequate social contact or social ties (Shiovitz-Ezra & Ayalon, 2010). Loneliness is also associated with many other negative outcomes, including impaired sleep (Aanes et al., 2011), deregulation of inflammatory and the endocrine systems (Hackett et al., 2012), diabetes and stroke (Whisman, 2010), obesity (Lauder et al., 2006), alcoholism (Akerlind & Hornquist, 1992), and smoking (Lauder et al., 2006). Life satisfaction is one's own judgment on their living circumstances (Diener et al., 1985). Life satisfaction lessens as people's health decreases among older adults (Kuru & Zorba, 2020; Schilling, 2005). Studies indicated that life satisfaction of older adults can be affected by a range of factors such as health behaviors and physical health outcomes, psychosocial factors, and life situations such as losing loved ones, living alone, life altering transitions, etc. (Barger et al., 2009; Diener et al., 2018; Kim et al., 2021; Sachs, 2019). Older caregivers caring for children living with HIV or AIDS can experience heightened feelings of loneliness and social isolation from their familial support network because of the stigma still associated with the disease (Boon et al., 2010). While there has been some exploration of loneliness among African elders (Van Der Geest, 2004; Ojembe & Ebe Kalu, 2018) it has never been studied in the context of caregiving in Africa, nor has it been studied in Namibia.

Depression and life satisfaction

Previous research has also found that depression is common among older caregivers, both in Western (Ostwald, 2000) and in African countries (Cluver et al., 2012; Gureje et al., 2007; Kalomo, 2017; Ssengonzi, 2007; Kagotho & Ssewamala, 2012). Most of the research among older caregivers has focused on the risk factors of depression among caregivers, such as the lack of social support, low socioeconomic status, low quality of life, and gender (Blazer, 2003). Depression is consistently and strongly associated with lower levels of perceived life satisfaction (Koivumaa-Honkanen et

al., 2004), including among older caregivers (Ostwald, 2008; Cole & Dendukuri, 2003). However, most of the studies exploring the linkages between caregiving and depression have been in Western contexts. The link between depression and life satisfaction among older caregivers has not been studied in the African context.

Conceptual framework

This study applied the ecological systems theory (Bronfenbrenner, 1979) and ecological perspective (Germain, 1973; Hartman, 1976) as its conceptual framework to help understand how complex interactions between systems contribute to or address loneliness and depression among older caregivers of children with HIV/AIDS in Namibia. Both ecological systems theory and ecological perspective highlight the importance of understanding the intercorrelated relationships between a person and his/her micro, meso, and macro environmental systems to enhance the person's well-being (Bronfenbrenner, 1979; Germain, 1973). Older caregivers have been influenced by multi-level environments such as family, neighbors, health care system, community, political, economic, and cultural systems. An older caregiver and his/her relationships with the care recipient, children with HIV/AIDS and caregiving demands which is the microsystem can affect the mental health and social well-being of the caregiver. The relational interactions between the caregiver and the mesosystems such as extended family, health care professionals, and village neighbors can also influence the caregiver's psychological health and well-being. Extended family members, health care professionals, or village neighbors may have HIV-related stigma which can negatively affect the caregivers. In addition, the larger environments including social, cultural, political, and economic systems may have an indirect effect on the caregiver's overall health and well-being. Reflecting this, understanding older caregivers' social and psychological health which have been influenced by the multi-level systems and its relationships with well-being in the Namibian context is an important approach to develop practical support for this population.

This article aims to examine the association of both loneliness and depression with perceived life satisfaction among older adult caregivers of children living with HIV or AIDS in rural Namibia. The two hypotheses tested in this article are: (1) higher levels of loneliness will be associated

with lower levels of perceived life satisfaction among older caregivers in rural Namibia, and (2) higher levels of depressive symptoms will be related to lower levels of perceived life satisfaction among older caregivers in rural Namibia.

Methods

Sampling and data collection procedure

This study was conducted in the Northern Omusati region of Namibia. Namibia is a diverse country with 14 ethnic groups in Southern Africa. It has a population estimated at 2.5 million, with only about 4% who are 65 years old or older (The World Bank Data, 2019). The Omusati region has a population estimated at 343,166 inhabitants and most of them speak Oshiwambo (NSA, 2018). The region has one of the highest rates of HIV/AIDS in the world, with an HIV rate of 24.9% in 2014 (Namibia Population-Based HIV Impact Assessment [NAMPHIA], 2018). Namibian adults over age 60 are the primary caregivers for orphans and children living with HIV or AIDS in Namibia (Center for Disease Control & Prevention, 2020). Participants for this study were recruited from Catholic AIDS Action (CAA), Namibia's largest faith-based nongovernmental organization addressing the country's HIV/AIDS crises (CAA, 2012). The agency serves individuals and families of diverse religious backgrounds. Purposive sampling was used to recruit the first 100 Oshiwambo speaking older caregivers who agreed to participate in the study. Inclusion criteria included: (1) 60 years or older; (2) speaks Oshiwambo; (3) cares for at least one child or grandchild living with HIV or AIDS; (4) does not have HIV or AIDS; and (5) resides in the Omusati region. To have an adequate sample size, we conducted a power analysis which indicated that the minimum required sample size was 73 for a hierarchical regression method with 8 predictors (Soper, 2020). Therefore, a sample size of 100 would be an appropriate sample to detect any effects.

The lead researcher translated the study questionnaire from English to Oshiwambo and consulted with other professionals who can speak both languages. The study questionnaire was composed of several scales in the measurement section and socio-demographic questions. The translated questionnaire was pilot tested with 8 people before the

participant interviews. The lead researcher trained three local volunteers from the Catholic AIDS Action agency to serve as study assistants who administered the study instrument. All study assistants were required to attend a one-day training seminar on research ethics, interviewing, and data collection. Face-to-face interviews were necessary, as the majority of older adults in this region do not read in Oshiwambo. The interviewers read all questions aloud to each participant in Oshiwambo, and the participants indicated their answers for each question. This was done to ensure those who could not read or write were able to access the questions easily, and where participants needed clarity, the researcher was able to clarify the questions. It took between 45 and 60 minutes to complete the study instrument with participants. Each participant completed the study questionnaire. Participation was voluntary and all study participants were informed about the study procedures and signed a consent form to confirm their willingness to participate in the study. Participants were also informed that they were free to opt-out of the study at any time. Interviews were conducted between May and November 2017. The study received Institutional Review Board approval (IRB#4186) from the first author's institution prior to data collection.

Measures

Loneliness

The Revised UCLA Loneliness Scale (UCLA-R; Russell et al., 1980) was used to measure the level of loneliness among older caregivers. The scale captures a three-dimensional representation of loneliness associated with close others, social others, and related environment (McWhirter, 1990). The UCLA-R has 20 items with a 4-point scale ranging from 1 (never) to 4 (often). Item examples are 'I lack companionship,' 'I am no longer close to anyone,' and 'I feel isolated from others.' Some items needed to be reversed to sum and calculate the total score. The possible scores range from 20 to 80, and a high total score referred to an elevated level of loneliness (Russell et al., 1980). The scale has been used for diverse populations including older adults (Penning et al., 2014). In earlier research, the UCLA-R had good concurrent validity with a Cronbach's alpha of .94 (Russell et al., 1980). In this current study, Cronbach's alpha of the scale was .90.

Depressive Symptoms

The Geriatric Depression Scale-Short Form (GDS-SF; Yesavage et al., 1983) was used to measure depressive symptoms among the participants. The scale is designed to measure depressive symptoms in older adults, and it has been used in seniors with various conditions including healthy, mild to moderate cognitive impairment, and physical/mental illnesses (Psychiatry, 2019). The GDS-SF has 15 items with a yes/no response format. Item examples are 'Do you feel that your life is empty?', 'Do you often feel helpless?', and 'Do you think it is wonderful to be alive?' (Sheikh & Yesavage, 1986). The answer choices indicating depression were scored, and the total possible range was 0 to 15. Scores 0-4 typically indicate no depression, scores 5-8 indicate mild depression, scores 9-11 indicate moderate depression, and scores 12 and higher indicate severe depression (Greenberg, 2012). The GDS-SF is a valid and reliable instrument, and it has been used in diverse ethnic/cultural groups (Durmaz et al., 2019; Paz et al., 2017). Cronbach's alpha of this scale in a previous study was .92 (Durmaz et al., 2019), and it was .88 in this study.

Life Satisfaction

The Satisfaction with Life Scale (SWLS; Diener et al., 1985) was employed to measure participants' level of life satisfaction. The SWLS is developed to measure one's subjective judgment on life satisfaction and it has been used in diverse populations from undergraduates to older adults (Diener et al., 1985). The scale has five items with a seven-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Item examples are 'In most ways my life is close to my ideal,' 'I am satisfied with my life,' and 'If I could live my life over, I would change almost nothing' (Diener et al., 1985). Total scores were calculated for analysis by summing up scores for each item, with a score from 5-35. A neutral score on the SWLS is 20, meaning a respondent would be equally satisfied and dissatisfied with his or her life. Scores between 31-35 indicate a participant is extremely satisfied with life, 26-30 indicate satisfied, 21-25 indicate slightly satisfied, 15-19 indicate slightly dissatisfied, 10-14 indicate dissatisfied and 5-9 indicate extremely dissatisfied with life. The SWLS has been translated into over 35 languages, and scholars have used the scale in hundreds of studies worldwide (Diener, 2005), including in Ghana (Pavot & Diener, 2008). While there are cultural variations in interpretation of life satisfaction, people of the same cultural background tend to have similar views of the concept (Emerson et al., 2017). The scale used in the African context in

a previous study (Westaway et al., 2003) and it was translated into the language spoken in Namibia for this study. The SWLS has been found to have good convergent and discriminant validity and good internal consistency (Pavot & Diener, 1993). In this study, Cronbach's alpha of this scale was .88.

Socio-demographic variables

This study used six socio-demographic variables as control variables: age (continuous variable), gender (1 = female, 0 = male), education (1 = no education, 2 = primary education, 3 = junior secondary education, 4 = secondary education, and 5 = higher education), medical aid/insurance (1 = yes, 0 = no), social service awareness (1 = yes, 0 = no), and self-rated health (1 = poor, 2 = fair, 3 = good, and 4 = excellent).

Data analysis

This study used three different data analysis methods. First, the study used descriptive statistics to describe the socio-demographic characteristics of the older adults in this study. Second, a bivariate correlation matrix was used to identify basic correlations among the main study variables. Finally, this study used hierarchical multivariate regression (Mertler & Vannatta, 2005) to test the hypothesized relationship between loneliness and depressive symptoms (continuous independent variables) on life satisfaction (continuous dependent variable) among older adults. The hierarchical regression analysis method is effective to present whether the main independent variables explain a statistically significant amount of variance in the dependent variable after accounting for all other variables hierarchically. In step one, this study included the six socio-demographic variables as control variables. The socio-demographic variables may be important predictors and/or social/health determinants for influencing life satisfaction. For example, previous studies indicated that people who have medical assistance or insurance and the awareness of existing social services were more likely to utilize health care services or social services than counterparts, which may improve life satisfaction (Bonfrer et al., 2016; Zhang et al., 2017). In step two, the loneliness variable was added to the set of six demographic variables in step one. In the final step, all three sets of predictors: the six demographic variables, loneliness, and depressive symptoms were included. This study also explored the specific

amount of variance (R^2) accounted for by three different steps (George & Mallery, 2016) for life satisfaction in the regression analysis. There were no multicollinearity problems since the tolerance scores were greater than .39 among all independent variables (Mertler & Vannatta, 2005). The IBM Statistical Package for the Social Sciences (SPSS) Program (version 23) was used for all analyses.

Results

Table 1 presents the socio-demographic characteristics of the 100 study participants. Participants' mean age was 70.95 ($SD = 7.59$). About 65% were female and 37% were married. Slightly over 23% of participants had no education and 40% had completed primary school. Only 3% were employed and 92% indicated that their monthly household income was between N\$501 - N\$1,500 Namibian dollars which is \$29 - \$88 United States Dollars (Currency Converter, 2019). This is below the extreme poverty line of N\$293 per month for household food in Namibia (Ngatjheus, 2019). The majority (88.7%) of participants had neither medical insurance nor medical aid. Only 27% were aware of social welfare services provided by the government for which they might qualify. In addition, 38% of participants considered their health as good and 21% indicated that it was poor. The mean score of loneliness was 40.30 ($SD = 10.54$; $Range = 19$ to 65), indicating a moderate level of loneliness. The mean depressive symptom score was 5.16 ($SD = 4.22$; $Range = 0$ to 15). Specifically, the results indicated that participants have no depression (53.4%), mild depression (25%), moderate depression (8%), and severe depression (13.6%). In addition, the mean scores of life satisfaction were 18.87 ($SD = 11.90$; $Range = 5$ to 35). The results indicated that participants are extremely satisfied with life (16.1%), satisfied (25.8%), slightly satisfied (7.5%), slightly dissatisfied (7.5%), dissatisfied (9.7%), and extremely dissatisfied with life (33.3%).

Table 1
Socio-Demographics of Participants (in percent or mean, N = 100)

		M(SD)	%
Age	Ranged from 59 to 101	70.95(7.59)	
Gender	Male		35.4
	Female		64.6
Marital status	Single		26.3
	Married		37.4
	Widowed		31.3
	Divorced/Separated		5.1
Education	No education		23.2
	Primary		40.4
	Junior Secondary		23.2
	Secondary		8.1
	Higher		5.1
Employment status	Employed		3.1
	Unemployed		56.7
	Self-Employed		3.1
	Retired		37.1
Monthly household income (Namibian dollars)	\$0-500		2.1
	\$501-1,500		91.6
	\$1,500 or above		6.3
Medical aid/insurance	No		88.7
	Yes		11.3
Social services awareness	No		73.2
	Yes		26.8
Self-rated health	Excellent		17.2
	Good		38.4
	Fair		23.2
	Poor		21.2
Loneliness	Ranged from 19 to 65	40.30(10.54)	
Depression symptoms	Ranged from 0 to 15	5.16(4.22)	
Life satisfaction	Ranged from 5 to 35	18.87(11.90)	

The bivariate correlations among the main study variables are found in Table 2. Life satisfaction was positively and significantly associated with education ($r = 0.34, p \leq .001$), social service awareness ($r = 0.33, p \leq .001$) and self-rated health ($r = 0.51, p \leq .001$), are negatively and significantly associated with loneliness ($r = -.61, p \leq .001$) and depressive symptoms ($r = -.70, p \leq .001$).

Table 2
Correlations among Main Study Variables ($N = 100$)

	1	2	3	4	5	6	7	8
1. Life satisfaction								
2. Age	0.04							
3. Gender	0.01	-0.34						
4. Education	0.34***	-0.23*	-0.05					
5. Medical aid/ insurance	0.20	-0.00	0.00	0.07				
6. Social service awareness		0.33***	-0.03	-0.28**	0.37***	-0.24*		
7. Self-rated health	0.51***	-0.29**	-0.12	0.27**	-0.09	0.25*		
8. Loneliness	-0.61***	0.07	-0.08	-0.26*	-0.11	0.00	-0.25*	
9. Depression symptoms	-0.70***	0.18	-0.23*	-0.42***	-0.20	-0.20	-0.37***	0.69***

Notes. * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

Table 3 presents the hierarchical multivariate regression results for the association between both loneliness and depressive symptoms with life satisfaction of older caregivers. Findings indicated that the socio-demographic variables in Step 1 explained 52% of the variance (R^2) in life satisfaction. In Step 2, socio-demographic variables and loneliness accounted for 68% of the variance (R^2), an increase of 16% from Step 1 (adjusted $R^2 = 64\%$). In Step 3, socio-demographic variables, loneliness, and depression accounted for 75% of the variance (R^2) which was an increase of 7% from Step 2 (adjusted $R^2 = 71\%$). In all steps, age ($B = 0.34, SE = 0.15, p \leq .05$; $B = 0.36, SE = 0.12, p \leq .01$; and $B = 0.37, SE = 0.11, p \leq .001$), medical aid/insurance ($B = 12.00, SE = 3.35, p \leq .001$; $B = 10.70, SE = 2.78, p \leq .001$; and $B = 7.23, SE = 2.64, p \leq .01$), social service awareness ($B = 9.46, SE = 3.48, p \leq .01$; $B = 10.30, SE = 2.88, p \leq .001$; and $B = 6.53, SE = 2.75, p \leq .05$), and self-rated health ($B = 4.23, SE = 1.24, p \leq$

.001; $B = 3.97$, $SE = 1.03$, $p \leq .001$; and $B = 3.04$, $SE = 0.95$, $p \leq .01$) were significantly associated with life satisfaction. As hypothesized, higher levels of loneliness were significantly associated with lower levels of life satisfaction ($B = -0.24$, $SE = 0.12$, $p \leq .05$), and higher levels of depressive symptoms were significantly associated with lower levels of life satisfaction ($B = -1.23$, $SE = 0.32$, $p \leq .001$).

Table 3
Hierarchical Regression Model for Life Satisfaction (N = 100)

	$\beta^1(SE^2)$		
	Step 1	Step 2	Step 3
Age	0.34(0.15)*	0.36(0.12)**	0.37(0.11)***
Gender	2.86(2.44)	1.02(2.05)	-1.64(1.95)
Education	2.13(1.23)	0.30(1.08)	0.24(0.96)
Medical aid/insurance	12.00(3.35)***	10.70(2.78)***	7.23(2.64)**
Social service awareness	9.46(3.48)**	10.30(2.88)***	6.53(2.75)*
Self-rated health	4.23(1.24)***	3.97(1.03)***	3.04(0.95)**
Loneliness		-0.54(0.11)***	-0.24(0.12)*
Depression symptoms			-1.23(0.32)***
<i>F</i> test (<i>d.f.</i> = 8)	9.82***	16.04***	19.51***
R^2	0.52	0.68	0.75
<i>Adjusted R</i> ²	0.47	0.64	0.71

Notes. * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$; ¹Unstandardized Beta coefficients, ²Standard errors

Discussion

This study focused on exploring the association between loneliness and depression with perceived life satisfaction among older caregivers of children with HIV or AIDS in Namibia. Overall, the study revealed that 50.5% of participants were slightly dissatisfied or extremely dissatisfied with their lives. In addition, our participants reported being moderately lonely, and about 47% of participants had mild, moderate, or severe depressive symptoms. To provide appropriate support for older caregivers with various levels of psychological health status, mental health providers

and social service practitioners need to be mindful of the negative impact of loneliness has on the caretaker's well-being. Also, further research can focus on understanding factors affecting their psychological health and appropriate support.

The findings supported our first hypothesis that higher levels of loneliness would be associated with lower levels of life satisfaction. This aligns with Western studies that consistently find an association between loneliness and life satisfaction in caregivers (Ekwall et al., 2005), and this relationship is similar among caregivers in Namibia. However, this should be interpreted with caution. The nonprobability nature of this study limits generalization of the findings to larger populations. In addition, this study was conducted in a rural region cross-sectionally. Therefore, it restricts to generalize the findings to the entire country or any other regions. This finding was particularly interesting and could be interpreted as those caregivers who experienced elevated levels of loneliness might be attributed to HIV-related stigma prevalent in this region (Kalomo, 2017). For example, Nghifikwa's (2011) study in Northern rural Namibia suggests people living with HIV experienced HIV-related stigma, rejection, and discrimination by kin, community members, and neighbours. Similarly, Moore's (2008) study in Toga found that caregivers of children and grandchildren with HIV faced intense HIV-related stigma, which often caused caregivers to keep their child's HIV status a secret and, in turn, resulted in negative mental and physical well-being of the caregiver and the child.

This study's findings supported the second hypothesis that higher levels of depressive symptoms would be significantly associated with lower levels of life satisfaction in this population. This finding is consistent with previous studies conducted in African countries revealing associations between depression or mental health and life satisfaction or well-being among adults (Getanda et al., 2015; Padmanabhanunni & Pretorius, 2021). However, this study uniquely found a negative relationship between depression and life satisfaction among older adult caregivers of children living with HIV/AIDS in Namibia. Also, this is the first time it has been noted in a rural Namibian context with a high HIV prevalence rate which provides a unique finding for understanding the depressive symptoms of older adult caregivers.

This study provides insights into the lives of older rural caregivers for social service and health care providers working with older adults caring for children/grandchildren with HIV in Namibia. Older caregivers may be dealing with their own age associate and/or chronic illnesses. Moreover,

unremitting care demands may contribute to accumulated caregiver stress. Since there was a significant negative association between loneliness and depressive symptoms with life satisfaction among the participants, health and social service practitioners who are diligently working with older caregivers in Namibia should consider these factors as they serve the population. Loneliness can affect mental health and can develop serious mental health conditions such as depression as our study's result showed. Providing community programs to improve social support systems among older adult caregivers will be very essential to alleviate their feelings of isolation which may minimize developing mental health issues. Caregivers with severe depressive symptoms need to meet a mental health professional to receive depression treatment. Studies have consistently shown mental health services in developing countries are under-resourced to those in high-income countries (Clausen & Wilson, 2010; Moussavi et al., 2007; World Health Organization [WHO], 2011; Saxena et al., 2007). In Namibia, there is a shortage of physical infrastructure and trained and qualified professionals to provide appropriate mental health care services for older adults. Policymakers need to pay attention to building more approachable mental health centers in rural areas and to developing health education programs to train qualified health professionals.

Another important finding was that older caregivers who had medical aid or insurance had higher levels of life satisfaction. This is not surprising, as receiving appropriate health care with medical aid has been found to be a key part of well-being in Namibia (Kalomo & Liao, 2018a). About 82% of participants do not have private insurance (or medical aid) and rely upon the public health system. Lawmakers need to consider making a policy or program to provide affordable medical aid or insurance among Namibians, which may help Namibians to have better quality health care. In addition, caregivers who had knowledge of social services in their community also had higher levels of life satisfaction.

Despite the unique contribution of findings, there are several limitations to this study. First, as this was a cross-sectional study, we could only explore associations rather than causation between the study variables. Second, we used a non-probability sampling method to recruit participants meeting specific inclusion criterion, so we cannot generalize the findings to other caregivers in the Omusati region or rural Namibia in general. A future study using probability sampling with a longitudinal design would help in understanding the directionality between the study variables and would expand the general applicability of the findings.

Implications for social work education and practice

This study's findings have important implications for social workers in rural Namibia, as well as other HIV endemic communities in Africa. Also, the study findings suggest crucial implications for gerontological practitioners in rural Africa. As higher levels of loneliness were associated with lower levels of life satisfaction, loneliness may be an important risk factor for life satisfaction among older caregivers of children and/or grandchildren affected by HIV and AIDS. The knowledge that loneliness is a valid predictor to reduce life satisfaction can assist policy-makers and practitioners in expanding mental health intervention strategies. These strategies include incorporating peer-support groups and psycho-education groups and connecting older caregivers with other caregivers they can trust and share their struggles and concerns with, which in turn may reduce feelings of loneliness and isolation (Kalomo, 2017; Lin et al., 2015).

Another important implication is the need for practitioners to give more sustained attention to the mental health needs of caregivers. Older caregivers in rural Namibia experience high rates of depression, and this depression is related to life satisfaction. In the Namibian context, social services and health care providers working in government agencies, hospitals, and/or non-governmental organizations (NGOs) should design culturally appropriate mental health interventions. Service providers should develop targeted evidence-based strategies that provide positive outcomes such as psychosocial interventions tailored for older caregivers that may include bereavement and grief counseling, psycho-educational groups, and age-appropriate gender-specific preventative educational campaigns focused on HIV and AIDS and the role older caregivers play in dealing with the crises. For example, short-term psycho-educational intervention strategies (i.e., 6-8 sessions) that can equip caregivers with essential coping skills, especially for those faced with mental health challenges associated with their daily caregiving demands can be cost-effective (Marshall et al., 1998). Interventions of this nature have the potential to strengthen community, family, professional, and social networks, while increasing caregivers' knowledge of caregiving responsibilities with the intent of decreasing loneliness and social isolation (Butler et al., 2005).

Additionally, there is a compelling need for social work educators to adequately train and equip novice social work students with skills

in systematic evidence-based assessment, screening, and treatment for the psychological distress of older caregivers, especially those in HIV endemic and socio-economically impoverished communities (Kalomo & Liao, 2018a). African social work practitioners, with their strong interpersonal skills and culturally relevant, decolonized practice pedagogies, approaches, and methods are ideally suited to engage with older caregivers in a way that promotes self-efficacy and resilience, which will, in turn, enhance life satisfaction and positive mental health outcomes (Abur, 2020; Zvomuya, 2020).

Finally, at the macro level, there is a need for concerted efforts to be made in involving all stakeholders. Due to the fragmented nature of many agencies in the country, it is critical for the Namibian government should partner with NGOs, faith-based organizations, civic societies, the private sector, and community agencies to enhance health care services to older caregivers. Findings from this study revealed that caregivers who had medical insurance had higher levels of life satisfaction. Therefore, it is imperative that the Namibian government and its stakeholders focus on expanding health care provision, particularly to aging caregivers in rural settings that have limited health care services. Addressing the overall well-being of older caregivers of people living with HIV/AIDS has the potential to decrease the psychological distress among caregivers. In addition, there is a need for Namibian stakeholders to develop culturally appropriate community information strategies to help increase older caregivers' knowledge about available social services and how to access available social and financial supports. Stakeholders should work together to develop community-based programs targeted specifically at adequate training and awareness-raising through local media outlets, churches, and culturally appropriate outreach mechanisms, to address the acute information deficits. These interventions should aim to provide accurate HIV knowledge, to provide available social and financial services in the community, and to rely on African indigenous knowledge and values as well as evidence from African-based social work research (Zvomuya, 2020). This is especially critical since the findings from this study identified a strong association between caregivers who had knowledge of social services in their community also had higher levels of life satisfaction.

Conclusion

In conclusion, our study adds to the growing literature on older adult caregiving in the era of HIV in sub-Saharan Africa, particularly among those living in rural areas. This is the first study to examine the association of loneliness, depressive symptoms, and life satisfaction among older adult caregivers in Namibia. The current study found that older caregivers who had higher levels of loneliness and depressive symptoms had lower levels of satisfaction, and those with medical aid or insurance as well as those with higher awareness of social services had higher levels of satisfaction. These findings call for the development of culturally appropriate interventions to support this population in increasing their perceived life satisfaction.

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