Associations of Mental Health Disorders and Social Support, with Retention in HIV Care Following Routine HIV Testing in a Refugee Settlement in Uganda

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Abstract

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Introduction: Uganda hosts a large refugee population, including individuals from neighboring countries with high HIV prevalence. Retention in HIV care for this population is crucial to improve health outcomes and reduce HIV transmission rates. Retention is essential to decreasing viral load and adverse health outcomes, all of which are difficult to manage with the complexities of being a refugee. Further, people living with HIV (PLHIV) tend to experience high rates of poor mental health, affecting their participation in the HIV care continuum. However, limited research has explored the relationship between mental health and retention in care among refugees living with HIV. This study aimed to investigate the association between mental health disorders (anxiety, depression, PTSD [post-traumatic stress disorder]) and lack of social support with retention in HIV care among refugees in Nakivale Refugee Settlement, Uganda.

Methods: A prospective cohort study was conducted among refugees and Ugandan nationals accessing routine HIV testing services in Nakivale Refugee Settlement. Participants (n=205)

were adults living with HIV who had linked to HIV care. Data were collected through surveys assessing demographic factors, mental health conditions, and social support. HIV attendance data was collected from HIV clinic register. Retention in HIV care was defined as having at least one clinic visit within the last 6 months over a 12-month study period. Negative binomial regression was used to analyze the association between retention in care and mental health disorders, adjusting for sociodemographic characteristics.

Results: The study population had a median age of 32 years, and the majority were female (n=88, 66%) and refugees (n=123, 60%). The proportion not retained in care was 60% (n=124). There was no significant association between retention in care and anxiety, depression, PTSD, or lack of social support. Mental health disorders were moderately correlated with each other, while social support showed minimal correlation with mental health measures. Sociodemographic characteristics showed no consistent association with mental health or social support.

Conclusion: There was no significant association between mental health disorders and lack of social support with retention in HIV care among refugees in Nakivale Refugee Settlement. However, a substantial proportion of refugees experienced a high mental health burden, and retention in care was alarmingly low. These findings highlight the urgent need for targeted interventions addressing mental health and improving HIV care for refugees in the settlement. Further research is warranted to explore additional factors influencing retention in HIV care and to develop effective strategies to optimize HIV care outcomes among this population.

Keywords: HIV, mental health, anxiety, depression, PTSD, social support, retention in care, refugees, Uganda, Nakivale Refugee Settlement.

INTRODUCTION

Uganda currently hosts one of the world's largest refugee populations, with over 1.4 million individuals seeking refuge from neighboring countries such as South Sudan, the Democratic Republic of Congo (DRC), Burundi, Somalia, and Rwanda (*Uganda - 2021 Year-End Report - Population Trends*, 2021). These refugees often face significant challenges, including violence, food insecurity, and limited access to basic services such as health and education (*Refugee and Migrant Health*, 2022). The prevalence of HIV among adults aged 15 to 64 in Uganda is 6.2%: 7.6% among females and 4.7% among males (UGANDA POPULATION-BASED HIV IMPACT ASSESSMENT UPHIA 2016–2017, 2017). This corresponds to approximately 1.2 million people aged 15 to 64 living with HIV in Uganda (Spiegel et al., n.d.). Further, the Uganda Refugee Population-based HIV Impact Assessment (RUPHIA) approximates that 1.3% of refugees in Uganda are living with HIV (Uganda, n.d.). Given the growing refugee population in Uganda, it is of increasing importance to optimize HIV-related treatment and care along the care continuum (Spiegel et al., n.d.,).

Despite Uganda's previous achievements in combating HIV/AIDS, the country has witnessed a resurgence of the epidemic, particularly affecting adolescents and young women who have an HIV prevalence four times higher than males ("The People's Voice - PEPFAR WATCH," 2022). This resurgence is compounded by the heightened risk faced by refugees living in Uganda due to limited access to healthcare, education, and other social services (Spiegel et al., n.d.). The convergence of a large refugee population, high HIV prevalence, and limited resources underscores the urgent need to optimize HIV-related treatment and care across the care continuum for both the general population and refugees in Uganda.

Efforts to address the HIV epidemic in Uganda have been hindered by numerous challenges. For example, limited resources, inadequate health education, and stigma around HIV/AIDS have contributed to low rates of HIV testing and treatment. In addition, barriers to accessibility and affordability of treatment, particularly in refugee settlements, have further exacerbated the problem. Thus, challenges and limitations have weakened the UNAIDS 95-95-95 initiatives, leading to a continued presence of HIV in the country (*Uganda*, n.d.).

Optimizing retention in HIV care is critical for PLHIV to improve health outcomes and reduce transmission rates. Unfortunately, enhancing retention in care remains challenging in Uganda, particularly for refugees living with HIV. Many factors can negatively affect care retention, including limited resources at clinics, barriers in health education, access, indirect costs (transportation, missed work, etc), stigma, and mental health (Arora et al., 2021; Holtzman et al., 2015). For PLHIV, this can mean dropping out of care entirely, causing poor health and higher chance of morbidity. Further, it can lead to increased viral load, risk of viral resistance, opportunistic infections, and transmission of HIV to other people (Holtzman et al., 2015).

Mental health is a critical factor that may affect retention in care among PLHIV, yet few studies have explored this relationship among refugees. PLHIV are at risk of common mental health disorders, often experiencing depression, anxiety, and post-traumatic stress disorder, which can affect their ability to adhere to ART and attend clinic appointments (Collins et al., 2006; Hoare et

al., 2021; Rane et al., 2018; Remien et al., 2019; Rooks-Peck et al.; 2018; Waldron et al., 2021). In addition, refugees living with HIV may experience unique stressors related to their displacement, such as feelings of isolation, trauma, and uncertainty about the future (Dow, 2011; Im et al.,, 2017; Matheson et al., 2020). These factors, combined with the challenges of living with HIV can contribute to a reluctance to seek HIV-related care and challenges with adherence to medication.

This analysis aims to fill a critical gap in the literature by investigating the relationship between mental health and retention in care among refugees living with HIV. Specifically, the study will explore the relationship between mental health disorders, including depression, anxiety, and post-traumatic stress disorder, as well as lack of social support, and retention in HIV care among PLHIV living in refugee settlements in Uganda.

The study's findings could have significant implications for HIV/AIDS management in refugee settings in Uganda and other countries with high refugee populations. By identifying the factors that are associated with retention in care, the study can inform policies and interventions that enhance retention in care for PLHIV in refugee settings, which could improve their quality of life and reduce the burden of HIV in refugee communities.

METHODS

Research setting

This research was conducted in Nakivale Refugee Settlement in Uganda. The settlement has a population of over 130,000 refugees and asylum seekers from all over sub-Saharan Africa, with the majority from the Democratic Republic of the Congo (DRC), Burundi, Somalia, and Rwanda (*Uganda - 2021 Year-End Report - Population Trends*, 2021). In addition, Uganda nationals live in and around the settlement. Refugees/asylum seekers and Ugandan nationals living in and around the settlement can access medical services at four health centers in Nakivale. Health services are free and include HIV testing and antiretroviral therapy (ART). Based on a routine HIV testing study at Nakivale Health Center, prevalence in this setting is 4.5% among those accessing routine clinic-based testing (O'Laughlin et al., 2014).

Study subjects

Study participants are refugees and Ugandan nationals accessing routine HIV testing services in Nakivale Refugee Settlement in Uganda also initially linked to care. Study subjects were included in this analysis if they had completed survey questionnaires during the time period of October 2018 to January 2020, were ≥ 18 years old, provided informed consent (in English, Kinyarwanda, Kiswahili or Runyankore), and were not known to be previously HIV-infected. Subjects who were pregnant were excluded as they were supposed to receive HIV care through the pre-natal clinic.

Data collection

These data are part of a larger study looking at linkage to HIV care. Data collection was designed to assess factors associated with linkage to HIV care for refugees and Ugandan nationals newly diagnosed with HIV in Nakivale Refugee Settlement (Parrish et al., 2022). From October 2018 to January 2020, adults were recruited from the outpatient department waiting area at three of the

four health centers in Nakivale. Given limited literacy, participants were consented by having the research assistant (RA) read the consent form aloud in one of the four study languages (Runyankore, Kinyarwanda, Kiswahili, English). After the consent process, surveys were conducted prior to HIV testing and before receipt of the HIV test results. Similar to the consent process, the survey was read aloud to the study participant with responses entered by the RA directly into mobile REDCap using an electronic tablet. The survey was approximately 30 minutes in length and included questions on demographic factors, mental health conditions, and social support. This study included the subset of participants who were found to be living with HIV and had linked to HIV care, defined as at least one clinic visit within 90 days of their initial HIV diagnosis (excluding the initial date of enrollment/HIV testing).

Study design

This was a prospective cohort study to assess associations of mental health disorders (anxiety, depression, PTSD) and lack of social support with not being retained in HIV care. Additional factors were also assessed including sex, age, refugee status, relationship status, and education level.

Exposure variables

The primary exposure variables included anxiety, depression, PTSD, and lack of social support. The primary mental health measures of interest were based on composite scores calculated from survey questions implemented from multiple screening tools. PTSD was assessed using the abbreviated PTSD Checklist. A total score ≥14 indicated PTSD. The depression module of the Patient Health Questionnaire (PHQ-9) was used to screen for depression. A score of ≥10 was used as a positive screen for depression. Participants were screened for anxiety using the GAD-7, a 7-item general anxiety disorder scale. A score of ≥10 was defined as a positive screen for anxiety. Social Support was assessed using BS-6 survey questions with a score of ≤ 11 defined as a positive screen for "lack" of social support.

Study outcomes

Retention in HIV care was assessed based on whether participants completed ≥ 1 visit within the last 6-months over the 12 month study period following their HIV diagnosis. This definition of retention was based on the US Department of Health and Human Services and applied that to our study (Holtzman et al., 2015).

Data analysis

Descriptive statistics were used to summarize demographic characteristics. The primary outcome variable, retention in HIV care, was assessed quantitatively. Negative binomial regression was used to examine the association between retention in HIV care and various correlates of interest. Correlation testing used the Spearman coefficient. Mental health disorders included anxiety, depression, and PTSD, as well as lack of social support. Sociodemographic characteristics included sex, refugee status, relationship status, education, and age. Overall, our approach aimed to systematically evaluate the potential factors associated with retention in HIV care. Statistical analysis was performed using R.Studio Version 4.1.3 (2022.03.10), and statistical significance was defined as a p-value <0.05.

RESULTS

Study population characteristics

A total of 205 refugees living with HIV who linked to care following an HIV diagnosis were included in this analysis. The median age of participants at enrollment was 32 years (IQR 18,82), and the majority were female (n=135, 66%). The majority of participants were refugees (n= 123, 60%), had no education or only some primary education (n=145, 70%), and were married/living together with a partner (n= 117, 57%) (**Table 1**).

Demographic characteristics with retention in HIV care

The overall level of not being retained in our sample was 60%, with 124 of 205 participants of refugees defined as not retained by 12 months after diagnosis. We found no difference between females and males with their level of retention, with 65% (n=88) of women not retained and 51% (n=36) of males not retained (RR=0.78; 95%CI [0.53, 1.15]; p=0.23) (**Table 2**). Similarly, we found no association between the likelihood of not being retained in HIV care and age (p=0.26), refugee status (p=0.66-0.71), relationship status (p=0.33-0.68), and education level (p=0.70-0.93).

Mental health disorders and social support in relation to retention in HIV care

We found no association between the likelihood of not being retained in HIV care and anxiety (RR=1.05; 95%CI [0.70, 1.53]; p= 0.82), depression (RR=0.89; 95%CI[0.59, 1.31]; p= 0.57), PTSD (RR=1.13; 95%CI[0.79, 1.61]; p= 0.51), or lack of social support (RR=0.92; 95%CI[0.44, 1.72]; p= 0.82) (**Table 3**).

Mental Health Correlates

We examined the degree to which the measured mental health scores were correlated with each other and found that anxiety, depression, and PTSD were moderately positively correlated with each other (correlation coefficients 0.54-0.66). By contrast, social support was largely uncorrelated with anxiety (correlation -0.08), PTSD (correlation -0.14), and depression (correlation 0.18) (**Table 4**).

Mental Health Disorders and Social Support with Demographic Characteristics Correlates

We examined the relationship between sociodemographic characteristics and mental health to identify factors that may be associated with negative mental health and lower social support. We found that sex, age, refugee status, relationship status, and education were not consistently associated with mental health characteristics and social support among refugees and Ugandan nationals that were not retained in HIV care in Nakivale Refugee Settlement.

There was no significant association between anxiety, depression, PTSD, and social support with sex, age, relationship status, and education level. However, refugees were more likely to experience anxiety compared to Ugandan Nationals (RR= 1.68; 95% CI[0.99, 2.86]; p= 0.05). Additionally, there was a general trend of more education associated with decreasing social support (RR= 3.38; 95% CI[1.02, 11.72]; p= 0.04).**(Table 5)**.

Tables and Figures

Table 1. Sociodemographic characteristics among study participants (N =205)

Sociodemographic Characteristics	**Tested HIV+ population** N = 205 n (%) or Median (IQR)	**Female N=135 n (%)** or Median (IQR)	**Male N=70 n (%)** or Median (IQR)
Refugee Status			
Refugee	123 (60%)	77 (63%)	46 (37%)
Ugandan National	76 (37%)	52 (68%)	24 (32%)
Asylum Seeker	6 (3%)	6 (100%)	0 (0%)
Relationship Status			
Married/living together	117 (57%)	77 (66%)	40 (34%)
Single	19 (9%)	11 (55%)	9 (45%)
Divorced/separated/widowed	69 (34%)	47 (68%)	22 (32%)
Education			
No school	38 (18%)	26 (68%)	12 (32%)
Primary school	107 (52%)	70 (65%)	37 (35%)
Completed primary school	32 (16%)	21 (66%)	11 (34%)
Primary school +	28 (14%)	18 (64%)	10 (36%)
Age in years (mean)	32 (18, 82)	32	37

Table 2. Association between sociodemographic characteristics and not being retainted in HIV care among the refugees and Ugandan nationals newly diagnosed with HIV in Nakivale Refugee Settlement

Sociodemographic Characteristics	**Not Retained n of N (%)**	**RR**	**95% CI**	**P-value**
Sex				
Female	88/135 (65%)	1	ref	
Male	36/70 (51%)	0.78	(0.53, 1.15)	0.23
Age in years (mean)	N/A	0.99	(0.97, 1.00)	0.19
Refugee Status				

Ugandan National	76/123 (62%)	1	ref	
Refugee	45/76 (59%)	0.95	(0.66, 1.38)	0.82
Asylum Seeker	3/6 (50%)	0.81	(0.20, 2.16)	0.72
Relationship Status				
Married/living together	68/117 (58%)	1	ref	
Single	13/19 (68%)	1.17	(0.62, 2.06)	0.59
Divorced/separated/widowed	43/69 (62%)	1.07	(0.73, 1.56)	0.72
Education				
Some primary school	66/107 (62%)	1	ref	
No school	19/38 (50%)	0.81	(0.64, 1.70)	0.42
Completed primary school	21/32 (66%)	1.06	(0.47, 1.32)	0.80
Primary school +	18/28 (64%)	1.04	(0.60, 1.72)	0.88

Table 3. Association between mental health characteristics and retention in HIV care among the refugees and Ugandan nationals in Nakivale Refugee Settlement

Mental Health Characteristics	**Not Retained n of N (%)**	**RR**	**95% CI**	**P-value**
Anxiety				
No anxiety	89/149 (59%)	1	ref	
Has anxiety	35/56 (63%)	1.05	(0.70, 1.53)	0.82
Depression				
No depression	90/144 (63%)	1	ref	
Has depression	34/61 (56%)	0.89	(0.59, 1.31)	0.57
PTSD				
No PTSD	55/97 (57%)	1	ref	
Has PTSD	69/108 (64%)	1.13	(0.79, 1.61)	0.51
Social support				
High social support	115/189 (61%)	1	ref	

Low social support	9/16 (57%)	0.92	(0.44, 1.72)	0.82

Table 4. Correlation between mental health measures among the refugees and Ugandan nationals in Nakivale Refugee Settlement in HIV care

Mental Health	Anxiety	Depression	PTSD	Social Support
Anxiety		0.66	0.63	-0.08
Depression			0.54	0.18
PTSD				-0.14
Lack of social support				

Table 5. Association between mental health characteristics and sociodemographic correlates among the refugees and Ugandan nationals in Nakivale Refugee Settlement in HIV care

	Mental Health											
Sociodemographic Characteristics	**Anxiety**			**Depression**			**PTSD**			**Lack of social support**		
	RR	**CI**	**P value**	**RR**	**CI**	**P value**	**RR**	**CI**	**P value**	**RR**	**CI**	**P value**
Sex												
Female	1	reference		1	reference		1	reference		1	reference	
Male	0.84	(0.46, 1.46)	0.55	1.09	(0.63, 1.82)	0.75	0.71	(0.46 ,1.07)	0.11	0.88	(0.28, 2.41)	0.81
Age in years (per 10 year)	1.01	(0.98, 1.03)	0.64	1.01	(0.99, 1.04)	0.25	1.01	(0.99, 1.02)	0.53	0.98	(0.92, 1.03)	0.40
Refugee Status												
Ugandan National	1	reference		1	reference		1	reference		1	reference	
Refugee	1.68	(0.99, 2.86)	**0.05**	0.83	(0.47, 1.40)	0.49	1.10	(0.74, 1.62)	0.65	1.61	N/A	0.34
Asylum Seeker	0.76	(0.04, 3.56)	0.78	1.05	(0.17, 3.42)	0.95	1.32	0.40, 3.21)	0.58	1.73e-07	N/A	0.99
Relationship Status												

Married/living together	1	refere nce		1	refere nce		1	refere nce		1	refere nce	
Single	1.72	(0.69, 3.78)	0.20	1.12	(0.42, 2.48)	0.80	0.82	(0.36, 1.62)	0.60	1.23	(0.19, 4.67)	0.79
Divorced/separated/ widowed	1.63	(0.93, 2.86)	0.09	1.13	(0.65, 1.92)	0.66	1.13	(0.75, 1.68)	0.55	0.68	(0.19, 2.03)	0.51
Education												
Some primary school	1	refere nce		1	refere nce		1	refere nce		1	refere nce	
No school	1.19	(0.56, 2.35)	0.63	1.88	(0.98, 3.51)	0.05	1.28	0.67, 1.90)	0.31	3.38	(1.02, 11.72)	**0.04**
Completed primary school	1.29	(0.59, 2.59)	0.50	1.53	(0.72, 3.05)	0.24	1.16	(0.78, 2.03)	0.58	2.00	(0.41, 8.18)	0.34
Primary school +	1.32	(0.59, 2.72)	0.47	1.59	0.73, 3.23)	0.22	0.63	(0.29 1.20)	0.19	1.53	(0.22, 7.09)	0.61

DISCUSSION

This study examined the relationship between mental health disorders and social support with retention in HIV care among refugees and Ugandan nationals newly diagnosed with HIV in Nakivale Refugee Settlement in Uganda. No significant association was found between mental health disorders and lack of social support with retention in HIV care. The majority of the study population was not retained, however, a substantial proportion of refugees screened in for mental health disorders.

Notably, a considerable proportion of the study population exhibited a high level of mental health burden, with 53-64% of individuals experiencing anxiety, depression, or PTSD and 57% experiencing low social support. This is extremely high, in comparison to other PLHIV populations in sub-Saharan Africa experiencing common mental health disorders with a prevalence ranging from 21–62% (Motumma et al., 2019). This highlights the significant mental health challenges faced by our study refugee population. Additionally, retention in HIV care was found to be alarmingly low, only about one third of the population attended clinic in the 6-month retention period. These findings underscore the critical need for interventions and support services targeting mental health and retention in HIV care for refugees in Nakivale Refugee Settlement.

Our study findings diverge from current research in the field, which consistently demonstrates that poor mental health is associated with negative health outcomes at each step in the HIV care continuum (Remien et al., 2019). Literature on this association has displayed that poor mental health outcomes can present as a substantial barrier to adequate retention in HIV care, particularly among other vulnerable populations such as pregnant women, men who have sex with men (MSM), and youth (Remien et al., 2019). Alternatively, a meta-analysis of mental

health symptoms and retention in HIV care presented no significant associations between anxiety and PTSD with retention in HIV care, although depression was positively associated (Rooks-Peck et al., 2018). This presents an interesting avenue of exploration, and should be further explored.

Despite the existing body of research indicating a strong association between poor mental health and negative health outcomes in the HIV care continuum, our study did not find significant results in this regard. This discrepancy may be attributed to various factors, including the limitations of standardized measures used to assess mental health, the scarcity of research in low- and middle-income countries (LMICs) focusing on refugee populations, and the unique challenges faced by refugees in sub-Saharan Africa. The standardized measures of anxiety, depression, and PTSD were primarily developed and validated in populations from the global north, which may not fully capture the unique mental health experiences and cultural nuances of individuals in the global south, particularly refugees in Uganda (Fenta et al., 2006; Steel et al., 2014). Applying these measures to the refugee population may not capture the full range of mental health experiences in this context. Additionally, the scoring method employed by these measures oversimplifies and homogenizes individual experiences, hindering our ability to capture the diverse and nuanced mental health experiences within the refugee population and questioning the suitability of quantitative scores to comprehend the multifaceted nature of mental health in this context. Lastly, these measures are screening tools used only to screen individuals, they do not provide a clinically evaluated diagnosis, limiting the capture of mental health disorders among our study population.

Moreover, studies assessing the impact of mental health on HIV-related outcomes in low- and middle-income countries (LMICs), especially among refugee populations in sub-Saharan Africa, are limited (Kekibiina et al., 2021; Remien et al., 2019). While previous research conducted in LMICs does not directly represent the refugee population or the complex experiences refugees face, they still provide valuable insights into the barriers posed by mental health among people living with HIV (PLHIV) in terms of retention in HIV care. Regional studies within sub-Saharan Africa that have measured the association of mental health and retention have utilized similar measurement approaches, employing standardized scales such as the PHQ-9 and GAD to assess depression and anxiety, respectively (Truong et al., 2021).
Considering the interrelationships among depression, anxiety, and PTSD, it becomes apparent that a composite measure combining these variables might provide a more comprehensive assessment of individuals' overall mental health status (Truong et al., 2021). This approach could capture the synergistic effects of these mental health challenges and offer a more nuanced understanding of the cumulative impact on individuals' mental well-being. Additionally, the concept of social support, which measures a distinct aspect of well-being that anxiety, depression, and PTSD do not, warrants separate investigation to understand its correlation with mental health disorders, as social support may act as a barrier or shield against symptoms of mental health disorders.

Furthermore, the unique challenges faced by the refugee population, such as displacement, language barriers, limited access to healthcare, and the psychosocial impact of their experiences, may have overshadowed the impact of mental health on retention in HIV care in our study population. These complex factors were not fully captured in our study. Displacement disrupts

support systems and social networks, while language barriers hinder effective communication with healthcare providers (Mental Health and Forced Displacement, n.d.). Limited access to healthcare services, due to geographic or financial constraints, presents an additional barrier (Grasser, 2022). The profound psychosocial effects of the refugee experience, including trauma, stress, and loss, can result in emotional distress, poor mental health, and further exacerbate difficulties in seeking and maintaining healthcare (Byrow et al., 2019; Chiumento et al., 2020). It is also plausible that individuals relocated from our study settlement or sought care at other clinics, resulting in loss to follow-up and departure from our study population. The dominance of these unmeasured complex factors may have led to an underestimation of the contribution of mental health to retention rates among refugees.

Our research study has several notable strengths that warrant attention. While numerous studies have explored the connection between mental health disorders and the HIV care cascade among people living with HIV (PLHIV), only a limited number of studies have specifically examined this relationship within refugee populations. This study fills a significant gap in the literature by shedding light on an understudied population, refugees living with HIV, and the proportion screening in for mental health disorders. As a result, this study contributes valuable insights to the field, informing future research particularly in the context of the mental health experience of refugees living with HIV in sub-Saharan Africa. One additional advantage of this study is the prospective nature of data collection, wherein participants were surveyed prior to undergoing HIV testing. This ensures that participant survey responses were unlikely to be influenced by new information, such as their HIV status.

Nevertheless, our study has several limitations to consider when interpreting our findings. The sample size for our study (205 individuals) was relatively small and may have resulted in a low study power, increasing the chance of a null outcomes. However, the lack of significant results itself contributes to the existing knowledge in the field. Further, it is important to highlight that while there was no significant difference among the three different refugee status subcategories, the small sample size among asylum seekers, potentially hindered the ability to detect significant differences, as all individuals in this group experienced poor mental health and were not retained in HIV care. Although our study focused on a sizable refugee population, it did not encompass all individuals residing in or near Nakivale Refugee Settlement. Recruitment was limited to those who presented for HIV testing at health centers, resulting in a sample that may not accurately represent the entire community. Additionally, there is a possibility of not grasping all individuals experiencing mental health issues and living with HIV in that particular community. It is important to acknowledge that this study's findings may not be applicable to all refugee populations worldwide or all people living with HIV. The results are most generalizable to the refugee population within the specific study parameters or potentially extend to refugees from similar countries of origin residing in Uganda or nearby countries in sub-Saharan Africa. The choice of retention measure in our study may have influenced the findings, as the assessment of retention in HIV care varies across studies in Sub-Saharan Africa (Fox and Rosen, 2015; Holtzman et al., 2015). The lack of consensus on the ideal measurement and definition of retention in HIV care is a recurring concern in the literature, contributing to divergent results and hindering a unified understanding of the relationship between mental health and retention in HIV care, particularly in sub-Saharan Africa (Holtzman et al., 2015; Muwanguzi et al., 2021). Further

research might consider alternative approaches, shorter time intervals, and additional criteria to provide a more comprehensive and standardized assessment of retention in HIV care.

The COVID-19 pandemic has had a significant impact on healthcare utilization and access, including HIV care among refugees. Studies in the region have documented decreased clinic visits, ART initiation rates, and viral load monitoring during the pandemic, reflecting the broader disruption caused by the pandemic on healthcare services (Mburu et al., 2017; Nsanzimana et al., 2020; Potts et al., 2021). Despite considering the pandemic's influence by adjusting the retention measurement period, our study may not fully capture the overall impact of the pandemic on retention rates and its interaction with mental health disorders. The dynamic nature of the pandemic and its associated challenges likely influenced healthcare-seeking behavior and disrupted retention patterns, making it challenging to detect significant associations in our study.

CONCLUSION

This prospective cohort study explored the association of mental health disorders and lack of social support on retention in HIV care among refugees and Ugandan Nationals newly diagnosed with HIV in a refugee settlement in Uganda. There was no difference in retention in HIV care among those experiencing poor mental health and low social support. However, we did find that an incredibly low proportion of participants were retained in HIV care and a high proportion screened in for mental disorders and low social support. This study presents the need for increased evaluation to understand the factors associated with poor retention in HIV care. Future research should consider the development and utilization of culturally sensitive and broader, context-specific measures that align with the unique needs and experiences of this population, enabling a comprehensive understanding of mental health challenges and facilitating targeted interventions along the HIV care continuum for the humanitarian context.

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