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Association between stigma and depression among urban refugees in Mbarara Municipality, Southwestern Uganda

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Abstract

Background: More than half of the world's refugees reside in non-camp settings, including urban areas. Refugees in urban areas often face acculturation challenges, stigma, overcoming stereotypes, and living in fear of being repatriated. Depression is one of the most frequent mental disorders experienced by refugee populations as a result of such challenges. In Uganda, the prevalence of mental disorders among urban refugees in general remains unknown and there is little epidemiological data to inform practice and policy in relation to the refugees' mental health needs in urban areas. The aim of the present study was to examine the association between stigma and depression among urban refugees.

Methods: Using snowball sampling method, we conducted a descriptive cross-sectional study among 343 refugees residing in Mbarara Municipality, Southwestern Uganda. The Discrimination and Stigma Scale and the Patient Health Questionnaire were used to assess stigma and depression respectively. Using SPSS, means, standard deviations and ranges were calculated to determine the prevalence of stigma and depression. Multiple regression analysis was used to examine the associations between stigma and depression.

Results: Participants in our study experienced high levels of enacted stigma (n=293, 85%) and internalized stigma (n=239, 70%). Most of the participants experienced both internalized and enacted stigma (n=288, 84%). The overall prevalence of depression was 96% (n=329) of which 16% (n=53) was mild, 17% (n=59) was moderate, 41% (n=141) was moderately severe and 22% (n=76) was severe depression. There was a significant positive correlation between stigma and depression (β= 0.37, $p<.001$).

Conclusions: Urban refugees experience high levels of both enacted and internalized stigma. There is a strong association between stigma and depression. Interventions aimed at reducing stigma could subsequently reduce depression among refugees living in urban areas.

Background

There is an increasing number of refugees who are choosing to settle in urban centers rather than refugee settlements, even when this leaves them without access to UNHCR support (1). The urban refugees are a largely 'hidden' population, and little is known about their numbers, profiles, status, location and livelihoods (2). The main factors pushing refugees from camps include security threats, limited livelihood opportunities, harsh climatic conditions and violence in the camps, often related to tensions between different clans, ethnic and political groups (Pavanello, Elhawary, & Pantuliano, 2018). In Uganda, the refugee policy gives them (refugees) 'freedom of movement', 'gainful employment', and 'treatment without discrimination nor stigmatization (4). This policy makes it easy for refugees to quit camps and settle in any part of the country including towns. Refugees in urban areas often face challenges of insufficient disposable income, housing, feeding and daily utilities. In addition, they face acculturation challenges, stigma, overcoming stereotypes, and living in fear of being repatriated (5). Furthermore, they commonly experience migration stress and trauma, loss of homes and livelihoods, violence, torture, and

family separation (6). As such, it is no surprise that the prevalence of stigma, depression and post-traumatic stress disorder (PTSD), continue to be high among refugee populations (Baranik, Hurst, & Eby, 2018, Close et al., 2016).

Stigma has been associated with poor health outcomes of refugees (9). It is characterized by cognitive, emotional, and behavioral components often conceptualized as internalized or enacted stigma affecting a particular trait, among individuals (10). Enacted stigma is the negative attitudes held by members of the public about devalued people whereas self-stigma occurs when people internalize those public attitudes and suffer numerous negative consequences as a result (11). Refugee status is a highly stigmatized driver which affects the health seeking behaviour of forcibly displaced populations (12). Lindert, Ehrenstein, Priebe, Mielck, & Brähler, (2009) reported stigma to be associated with higher levels of depression 44% in first generation Iraqi refugees in Canada compared to estimates of prevalence in the general population reported to be between 8 and 12% (8). Depression is a mood disorder that involves a persistent feeling of sadness and loss of interest. It is one of the most frequent mental disorders experienced by refugee populations as a result of war and living difficulties after migration (14).

Negative mental health consequences are more common among refugees as a result of war and living difficulties after migration; however, there is a small body of research that has investigated the stigma of being a refugee as an essential risk factor for the development of mental health problems in post-conflict societies, especially depression (15). Our study aimed to determine the prevalence of stigma and depression among urban refugees and to examine the association between stigma and depression among urban refugees in Mbarara municipality, Southwestern Uganda. We hypothesized that there would be high prevalence of stigma and depression and that stigma would positively correlate with depression among urban refugees in Southwestern Uganda.

Methods

Study Design, Population and Measures

We conducted a descriptive cross-sectional study among 343 refugees residing in Mbarara Municipality, Southwestern Uganda using snowball sampling method between the months of May and November 2019. Our study participants were only those who had lived in Mbarara municipality for at least 12 months prior to the study and were aged 14 years and above. Would be participants with severe psychological disorders and identifiable symptoms of alcohol intoxication during the time of data collection were excluded. To determine our sample size, we adopted a 31% prevalence of stigma found by a study of Baranik et al., (2018) in a mixed methods study about the stigma of being a refugee, among Afghanistan refugees living in the US.

The Discrimination and Stigma Scale (DISC-12) was used to measure stigma**.** To suit our sample, the scale was modified and the words “mental health problems” were substituted with words “refugee status”. The scale measures unfair treatment of people because they are seen to be different from others for any reason (16). Therefore, the substitution of words did not affect the validity of the scale. The scale

consists of 34 items, four subscales and scores on a 4-point scale from 0 (not at all), 1 (a little), 2 (moderately) and 3 (a lot). For the current study we considered the first two sub scales of the DISC-12. Subscale 1 measured enacted stigma (Item 1–22) and subscale 2 measured internalized stigma (Item 23–26). A higher score indicated greater experience of stigmatization tendencies reported by a participant. The DISC -12 is reported consistent with a Cronbach's alpha of 0.78 (17). In the present study the DISC-12 had 0.93 Cronbach's alpha.

The Patient Health Questionnaire (PHQ-9) was used to measure depression. The PHQ-9 is a brief, easily administered and scored screening questionnaire that can be used to improve the recognition rate of major depression and facilitate treatment (18). An advantage of the questionnaire is its exclusive focus on the nine diagnostic criteria for the newly revised DSM-5 depressive disorders (19). The scale is up to a score of 27 with each item with options of not all (0), several days (1), more than half the days (2) and nearly every day (3). A score of 1 – 4 is interpreted as minimal depression, 5 – 9 mild depression, 10 – 14 moderate depression, and 15 – 19 moderately severe depression and 20 – 27 severe depression. Since its development, the PHQ-9 has established itself as a practical tool for use in assisting with "depression diagnoses, depression severity, and depression outcome". The PHQ-9 is reported as "excellent" with a Cronbach's alpha of 0.89 and 0.86 in the primary care and obstetrical clinical studies respectively (20). The PHQ-9 possessed a 0.91 Cronbach's alpha in the present study. All instruments were directly administered to the participants in their own residence or places considered by both the research team and the selected participant as being safe and confidential.

Analysis

All the collected data were checked for completeness, consistency and accuracy. All instruments with missing data were not included in the analysis. Data were entered into excel and then exported to SPSS for analysis. Descriptive statistics were used for demographic and the main study variables symptoms. In determining the prevalence of stigma and depression, chi square tests were conducted for each of the study variables across gender. Frequencies, percentages and p-values were presented. Hierarchical multiple linear regression analysis was used to examine the associations between stigma and depression. At a bivariate level, we entered stigma the major study variable in the model to determine its contribution in the variance of depression among our study participants. At a multi variate level, we entered stigma and controlled for other six demographic characteristics of the participants (age, education level, marital status, time spent in Mbarara and occupation) because these were potential confounders of depression based on prior analysis. The regression model fulfilled all the necessary criteria for linear regression analysis.

Results

Socio-demographic Characteristics

Of the 343 participants 198 were male and 145 female females, their mean age was 28.8 years (*SD* = 11.0). Few of the participants 4.7% lacked any formal education and most of them were not married

49.3%. About one third of the participants (34.1%) were from the Democratic Republic of Congo (DRC) and their mean duration in Mbarara was 6.4 years. Most of them (63%) resided in Kakoba division, and half (49.9%) reported their source of income as casual labor. Details of the socio-demographic characteristics (see table 1).

Table 1: Demographic Characteristics of urban refugees in Mbarara Municipality (N = 343)

Characteristic		Frequency	Percent
Gender			
	Male	198	57.7
	Female	145	42.3
Age			
	14-24 years	144	42.0
	25-35 years	107	31.2
	36-45 years	60	17.5
	47 years+	32	9.3
Education level			
	No formal	16	4.7
	Primary	131	38.2
	Secondary	167	48.7
	Tertiary	29	8.5
Marital Status			
	Never married	169	49.3
	Currently Married	141	41.1
	Separated	33	9.6
Time spent in Mbarara municipality			
	1- 5 years	179	52.2
	6-10 years	106	30.9
	11-15 years	52	15.2
	16 years+	6	1.8
Place (Division) of Residence			
	Kakoba Division	216	63.0
	Nyamitanga Division	83	24.2
	Kamukuzi Division	44	12.8
Source of Income			
	Business	29	8.5
	Casual labor	171	49.9
	Professional	3	0.9
	Dependant	140	40.8

Prevalence of stigma and its symptoms

The mean scores for enacted stigma and internalized stigma were 34.95 (*SD* = 12.42) and 6.08 (SD = 3.30) respectively. The prevalence of enacted stigma was 85% (n=293) and that of internalized stigma was 70% (n=239). Most of the participants 84% (n=288) experienced both enacted and internalized stigma. The most reported stigma symptoms were being avoided (80%), being treated unfairly by people in the neighborhood (79%), and being treated unfairly in making or keeping friends (77%). The least

experienced symptoms of stigma were being treated unfairly in starting a family (23%), and being treated unfairly in marriage (26%). There was a significant difference between males and females in terms of being treated unfairly in making or keeping friends with ($\chi 2$ = 9.07, p = 0.003) and being treated unfairly in housing with ($\chi 2$ = 4.16, p = 0.041). Many participants (71%) reported concealing their identity of being refugees from others as the most experienced symptom of internalized stigma. There were no significant differences in the experience of internalized stigma symptoms across gender (see table 2).

valence of stigma symptoms among urban refugees in Mbarara Municipality (N=343)

	Total		Female		Males			
	n	%	n	%	n	%	P	
ma								
d by people	275	80	120	35	155	45	1.06	0.304
irly by people in neighborhood	272	79	113	33	159	46	0.29	0.593
irly in making or keeping friends	264	77	100	28	164	49	9.07	0.003
irly in your social life	259	76	106	31	153	45	0.79	0.375
irly in any other areas of life	258	75	108	32	150	44	0.07	0.787
irly when using public transport	247	72	99	29	148	43	1.74	0.187
en treated unfairly in housing	245	71	112	33	133	39	4.16	0.041
irly in getting welfare benefits	234	68	97	28	137	40	0.2	0.652
irly in physical health problems	224	65	94	27	130	38	0.03	0.873
irly in your personal safety	212	62	90	26	122	36	0.01	0.932
irly in your education	197	57	80	23	117	34	0.53	0.468
irly in keeping a job	188	55	86	25	102	30	2.05	0.152
irly in finding a job	176	51	81	24	95	28	2.08	0.149
irly in intimate relationships	163	46	71	21	92	27	0.21	0.647
irly in your religious practices	139	41	50	15	89	26	3.81	0.051
irly by mental health staff	139	41	61	18	78	23	0.25	0.618
irly in your levels of privacy	137	41	61	18	78	23	0.25	0.618
irly by the police	133	39	54	16	79	23	0.25	0.618
irly by family	128	37	58	17	70	20	0.77	0.379
irly as a parent to your children	104	30	48	14	56	16	0.92	0.337
irly in marriage	88	26	43	13	45	13	2.11	0.147
irly in starting a family	78	23	37	11	41	12	1.1	0.294
Stigma								
eing a refugee from others	244	71	111	32	133	39	3.59	0.058
from having a close personal relationship	212	62	88	26	124	36	0.13	0.715
from applying for education	150	44	68	20	82	24	1.02	0.312
from applying for work	145	43	67	20	78	23	1.59	0.207

Prevalence of depression and its symptoms

The overall prevalence of depression among the 343 participants was 96% (n=329) of which 16% (n=53) had mild, 17% (n=59) moderate, 41% (n=141) moderately severe and 22% (n=76) had severe depression. The most experienced depression symptoms across gender were feeling down, depressed, or hopeless (63%), feeling tired or having little energy (63%), and having little interest or pleasure in doing things (60%). The least experienced depression symptoms were moving or speaking so slowly (43%) and having

thoughts that one would be better off dead (46%). There were no significant differences across gender as far as the experience of depression symptoms was concerned (see table 3).

Table 3: Prevalence of Depression symptoms among urban refugees in Mbarara Municipality (N=343)

Items	Total		Female		Males			
	n	%	n	%	n	%	p	
Feeling down, depressed, or hopeless	217	63	96	28	121	35	0.93	0.334
Feeling tired or having little energy	216	63	83	24	133	39	3.54	0.06
Little interest or pleasure in doing things	205	60	89	26	116	34	0.27	0.602
Trouble falling asleep or sleeping too much	197	54	86	25	111	32	0.36	0.548
Poor appetite or overeating	197	57	84	26	113	33	0.03	0.874
Feeling bad about yourself	192	56	82	24	110	32	0.03	0.854
Trouble concentrating on things	189	55	81	24	108	32	0.06	0.809
Thoughts that one would be better off dead	157	46	68	20	89	26	0.13	0.721
Moving or speaking so slowly	147	43	60	18	87	25	0.22	0.636

Association between stigma and depression among urban refugees in Mbarara municipality

To investigate the association between stigma and depression, the sum scores of the DISC – 12 were regressed against the PHQ – 9 depression scores. In the first step stigma was entered in the regression model. The model explained 13% of the variance in depression (R^2 = .13), F (1,339) = 53.60, p < 0.001. Results in step 1 of this model showed a significant positive correlation between stigma and depression (β= 0.37, *p*<.001). In the step 2, six socio demographic characteristics of the participants were included in the model to adjust for the possible confounders. The results of the regression indicated that stigma together with the six socio demographic factors explained 16% of the variance in depression (R^2=.16, *F* (7,333) = 10.06, *p*<.001). The socio demographic characteristics accounted for 3% of the variance in depression while stigma still significantly predicted depression (β= 0.32, *p*<.001) and itself accounted for 13% of the variance in depression (ΔR^2 =.30, *p*<.001). In step 2 of this model, there was significant positive correlation between age and depression (β= 0.17, *p*<.015). Whereas there was a significant negative correlation between level of formal education and depression (β= -0.13, *p*<.018). Results of this regression are presented in table 4.

Table 4: Hierarchical regression for the association between stigma and depressionamong urban refugees in Mbarara Municipality (N=343)

	Variable	Depression			t	*p*
		B	S.E	β		
1	***Step 1***					
	Stigma	0.13	0.02	0.37	7.32	<0.001
2	***Step 2***					
	Stigma	0.11	0.02	0.32	5.83	<0.001
	Age	0.08	0.03	0.17	2.45	0.015
	Education level	-0.53	0.22	-0.13	-2.39	0.018
	Marital status	-0.71	0.40	-0.11	-1.78	0.076
	Time spent in Mbarara	-0.05	0.07	-0.04	-0.70	0.483
	Occupation	0.32	0.17	0.10	1.93	0.054
	Sex	0.09	0.55	0.01	0.16	0.871

B = unstandardized regression weight, SE = standard error, β = standardized regression weight, t = t-test statistic

Discussion

Our study aimed to examine the association between stigma and depression among urban refugees in Mbarara municipality, southwestern Uganda. It is one of the few studies that have been conducted in Africa. We found high prevalence of general stigma, enacted stigma and internalized stigma. We also found a strong association between stigma and depression. Our results are similar to previous studies. For example, Schweitzer and colleagues (2005) reported a stigma prevalence of 59.8% among refugees living in Austria (Schweitzer, Perkoulidis, Krome, Ludlow, & Ryan, (2005). Similarly, Baranik and colleagues (2018) reported that 31% of Afghanistan refugees in the U.S. experienced internalized stigma (Baranik, Hurst, & Eby, (2018). Contrary to our results, Baranik et al., (2018) reported only 13% of enacted stigma. The disparity in the prevalence levels could be as a result of the differences in study settings and cultural differences between groups.

The most experienced enacted stigma symptoms were being avoided by people, being treated unfairly by people in the neighborhood and being treated unfairly in keeping or making friends. These results agree with the results of Ebuenyi, Regeer, & Ndetei, (2019) who found that 81.9% of their participants in Nairobi, Kenya were unfairly treated in making or keeping friends, 68.6% were unfairly treated by people in their neighborhood and 68.1% were avoided or shunned people. Our results suggest that many urban refugees encounter daily social discrimination or unfair treatment from the community in which they live. These results are in agreement with Michaela (2018) who argues that refugees suffer from enacted stigma such as experiences of racism, social exclusion and perceived low status from the broader community.

The least experienced symptoms of enacted stigma were being treated unfairly in starting a family and being treated unfairly in marriage. There is little wonder that low prevalence about family and marriage were reported by participants in this study. Most of our participants married amongst themselves and therefore could have experienced very limited with-in group stigmatization. It is probable that even those who reported stigmatization in starting family or unfair treatment could have been in intimate relationships with natives. Participants reported high prevalence of stigmatization symptoms in other

areas of life such as using public transport, housing, education, etc. These results are in line with the arguments of Kane et al., (2019) who contend that stigma limits a person's educational opportunities, employment, housing, and social relationships, as well as adversely affects health outcomes of individuals who experienced stigma.

Additionally, the most experienced symptom of internalized stigma was concealing the identity of being refugees from others. Ebuenyi et al., (2019) and Brain et al., (2014) respectively found 72.2% and 88% of participants report concealing their identity. Because of such internalized behavioral tendencies, it's not surprising that at least 43% of the participants in the present study reported avoiding applying for work. A study conducted in Kenya found 59.2% and 40.8% of participants stopped themselves from applying for work, applying for education or training courses, respectively (17).

The current study revealed a significant difference between males and females in terms of being treated unfairly in making or keeping friends and being treated unfairly in housing. More males reported having been treated unfairly in housing 39%, as compared to their female counterparts at 33%. These results are in contradiction with Ebuenyi et al., (2019) who reported that more women experienced unfair treatment compared to men. Such contradiction could have come as a result of the differences in gender distribution of each study. In the current study we had 57.7% males and 42.3% females, whereas in the former study 30.6% were males and 69.4% were females. Incongruent gender distribution could explain the differences in the results. Our study population was urban refugees which is not necessarily reflective of the typical urban gender distribution of refugee groups. Xiaoming, Bonita, Xiaoyi, & Danhua (2008) found that men tend to migrate to urban places more often than women, thus raising implications that our study sample may have been atypical yielding, but not necessarily, inaccurate results (25).

Our results also revealed higher general prevalence of depression. The high prevalence reported in this study is in line with prior results among other refugee groups. For example higher levels of depression (44%) have been reported among refugees in the U.S. compared to estimates of prevalence in the general population reported to be between 8 and 12% (26). Close et al., (2016) reported higher depression prevalence of 43% among Iraqi refugees, 41% of depression was also reported among Karenni refugees residing along the Burmese-Thai border (27). A study done among Syrian refugees living in Iraq reported 80% prevalence of depression (28). Studies conducted among refugees in Uganda and Southern Sudan identified high prevalence of depression at 67.4% and 49.9% respectively (29,30). In the present study the most often reported depression symptoms were feeling down, depressed, or hopeless, feeling tired or having little energy and having little interest or pleasure in doing things. Our results are in agreement with prior results, for example 82.6% of Cambodian refugees living in Thailand, reported being in "a deep sadness inside oneself"" as a major depression symptom (27). There was a minimum 21% prevalence of depression symptoms among resettled Bhutanese refugees reported in a meta-analysis of large studies of refugees resettled to western countries (31). The least experienced depression symptoms were moving or speaking so slowly and having thoughts that one would be better off dead. In the present study, there were no significant differences across gender in the experience of depression symptoms. Such results would explain the homogeneous nature of mental health burden of refugees across gender. Unlike other

studies that report higher prevalence of depression among women (28), our results revealed that urban refugee men experienced higher depression prevalence and depressive symptoms. The current higher prevalence may be due to their (men) higher tendencies to migrate to town and cultural responsibility to bear the financial burden of head of household providing for their families in the midst of harsh urban conditions. Secondly women tend to have more social support systems and possibly face fewer acculturation challenges as compared to men.

In agreement with our hypothesis we found a significant positive association between stigma and depression. Results indicated a significant positive correlation between stigma and depression. In the regression model, stigma explained 13% of the variance in depression. Our results are similar to other studies, for example Pyne et al., (2004) found that depression among forced migrants was associated with stigma. Similarly, there is research evidence associating stigma with compromised quality of life and poorer functioning across daily routines. Highly stigmatized individuals are more likely to conceal their condition (23). Our results show that the most prevalent internalized stigma symptom among our participants was concealing their identity which may explain why stigmatized individuals may fail to seek help even when they are aware of their need. Almost three quarters of our participants reported feeling down, depressed, or hopeless, and feeling tired or having little energy as their major depression symptoms. These are classic symptoms of depression which often require intervention. Moreover, stigma may set up a perpetuating cycle of increased symptoms and need that result in more severe depression and psychopathology and related need for intervention (33). This further explains the high prevalence of depressive symptoms in our study sample as measured by the PHQ – 9 depression scale.

Results of the regression indicated that stigma together with socio demographic factors explained 16% of the variance in depression. This implies that the socio demographic characteristics of the participants predicted depression by 3%. Our results demonstrate the role of stigma in compromising the mental health of urban refugees irrespective of their demographics. Results of the regression also revealed a significant positive correlation between age and depression. Depression was highly prevalent among older participants as compared to the young ones. Higher rates could have been due to their stressful experiences before migration, during migration, post migration and social adjustment challenges, as well as worries about daily survival mechanisms amidst limited social support. The culmination of stress and worry and related impact over time for older people is more likely to be higher than it would be for younger people. Older urban refugees are faced with chronic stress related to poor social support, legal uncertainty, material insufficiency about their existence in the urban areas, this insecurity exposes them to a higher risk of developing depression (2).

The results also revealed a significant negative correlation between level of formal education and depression, i.e., refugees who had no or had lower levels of formal education were more likely to be depressed compared to those with higher formal education levels. The investigators suggest that those with higher formal education are often skilled or professionals who could more easily interact with the nationals, in most cases were economically better-off, and more able to seek help as compared to their counterparts with no or low levels of formal education. Vonnahme, Lankau, Ao, Shetty, & Cardozo (2016)

in their study among Bhutanese Refugees in the United States, found inability to read and write a host country's language increased the odds of symptoms of depression four times compared to those who could read. Moreover, daily stressors such as living in unsafe places, lack of access to basic needs, absence of social support and living conditions in the host country contributed to higher levels of depression among Rohingya adult refugees who were semi or illiterate in Bangladesh (28). These results are in line with the Diathesis-Stress Model of Robert P. Liberman (1960), a psychological theory that explains behavior as both a result of biological and genetic factors ("nature"), and life experiences ("nurture") (35). The experience of stigma by refugees coupled with other environmental and biological their genetic factors may result in to mental health problems including depression.

The study results in general revealed that refugees across demographic characteristics, experienced high levels of stigma and depression. Results also revealed a significant positive association between stigma and depression. In addition to war-related violent events experienced in their country of origin, refugees are exposed to danger and potentially traumatic events during their flight (28). When they arrive at camps or host countries, many already suffer from psychological and physical impairment. Crisp, Morris, & Refstie, (2012) argue that refugee camps often generate meager conditions and constraints of living, urging the influx of refugees to urban areas in an effort to increase their stability, autonomy and security. When they get to urban centers, refugees are often confronted with living challenges ranging from physical, economic, social and mental constraints. In general, mental disorders are more prevalent in the metropolitan cities, thus it may be anticipated that specific conditions such as anxiety and depression are also more prevalent among urban refugees than those in rural areas (37). These results point to the need for provision of acceptable, accessible, and timely mental health interventions to enhance recovery of refugees living in urban areas. Our study adds to support to the growing evidence that urban refugees have a burden of managing daily stigmas (both enacted and internalized) that contribute to depression and other mental health conditions.

Limitations

The study adopted a cross-sectional design which limited our continuous interaction with the sample population. The sampling method was snowball which may have resulted in a selection bias which limits the generalizability of our results. The participants were undocumented urban refugees who may have had safety related issues which may have increased participants levels of anxiety and self-consciousness during data collection thus, affecting their responses about stigma and depression. We solely depended on participants' self-reports and this could have also compromised the quality of responses we obtained.

Conclusion

Stigma among urban refugees is positively associated with depression and may lead to greater experience of psychopathology, specifically depression. Further studies that adopt exploratory and mixed

epidemiological methods are needed to ensure that the needs of the population are factored into the study designs.

Abbreviations

DISC: Discrimination and Stigma Scale; DRC: Democratic Republic of Congo; DSM-5: Diagnostic and Statistical Manual of Mental Disorders Version 5; MUST-REC: Mbarara University of Science and Technology – Research Ethics Committee; PHQ: Patient Health Questionnaire; PTSD: Posttraumatic Stress Disorder; SD: Standard Deviation; UNCST: Uganda National Council of Science and Technology; UNDAF: United Nations Development Assistance Framework; UNHCR: United Nations High Commissioner for Refugees

Declarations

Ethics approval and consent to participate

Approval to conduct the study was obtained from Mbarara University of Science and Technology Research and Ethics Committee (MUST-REC 02/12 - 18). Further permission was sought from the Uganda National Council for Science and Technology (UNCST SS4922). Informed written consent was obtained from all study participants above the age of 18 years. Also written informed consent was obtained from parents or guardians for participants under the age of 18 years however these also provided written assents before data collection.

Consent for publication

Not applicable.

Authors Contributions

BR, conceptualized the study, collected the data, analyzed the data and wrote the initial manuscript draft. HEA, CDS and GZR supervised, guided the entire study and revised the manuscript back and forth. All authors approved the final version of the manuscript for publication submission

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Availability of Data and Materials

The datasets generated and /or analyzed during the current study are not publicly available due to research ethics board restrictions but are available from the corresponding author on reasonable request.

Competing Interests

Authors declare they have no any conflict of competing interests

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