MAJOR DEPRESSIVE DISORDER AND ASSOCIATED FACTORS AMONG ADULT REFUGEES ATTENDING A REFUGEE CENTER, IN KAMPALA, UGANDA.

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ABSTRACT

Background: The number of refugees crossing Ugandan borders has exceeded 1.2 million over the last five years. Organizations which work with this vulnerable population have reported a variety of mental health challenges, the commonest being depression.

Aim: This paper describes a study that investigated the prevalence and factors associated with Major Depressive Disorder (MDD) among adult refugee populations attending a refugee centre in Kampala, Uganda.

Methods: This was a cross sectional descriptive study which involved refugees of above 18 years of age who were attending the Inter-Aid refugee centre in Kampala, Uganda's capital city. A consecutive sampling method was used and a total of 374 participants were recruited from December 3rd, 2018 to February 7th, 2019. Study instruments used were Self-Reporting Questionnaire (SRQ-20); the Mini International Neuropsychiatric Interview module (MINI) for Major Depressive Disorder, a socio-demographic questionnaire and a variety of scales to assess psychosocial variables associated with the MDD. Data was entered using Epi-data and analysed using STATA-14. Descriptive, bivariate, and multivariate (logistic regression) models were used to determine factors associated with MDD.

Results: Out of the total 374 participants, females were more common 218 (58.29%) and the mean age was 37.1years (SD 12.1). The prevalence of MDD among the refugees was 46.52% and out of these, 138 (79.31%) had low suicidal risk, 32 (18.39%) moderate risk and 4 (2.30%) had high suicidal risk. The factors independently associated with Major Depressive Disorder were older age, (aOR 6.56, 95% CI 1.25-34.44, p= 0.026), suicidal risk score (aOR 1.63, 95% CI 1.04-2.57, p= 0.034), perceived social support (aOR 0.8, 95% CI 0.71-0.90; p=0.001), positive coping skills (aOR 0.61, 95% CI 0.45-0.82; p=0.001) and negative coping skills (aOR 1.96, 95% CI 1.31-2.92; p=0.001). Women and men were almost equally affected with MDD.

Conclusion: The prevalence of MDD amongst the urban refugee population was high at 46.52%. Participants who used negative coping skills were more likely to get depressed while those with positive coping skills were protected. We recommend routine screening for MDD amongst refugee populations with particular emphasis on suicide risk and increasing awareness of mental health issues in staff looking after refugees.

Keywords: Depression, Suicide risk, Refugee, Asylum seeker, Social Support, Coping Skills.

INTRODUCTION

Worldwide, conflict and forced immigration has become the main challenge of the 21st century with recent studies showing that there are more than 66 million refugee populations worldwide (Pastore et al. 2005)[1]. Africa hosted about 5.5 million refugee population which was only surpassed by Asia at 8.6 million (UNDP, 2017)[2]. By the end of 2016 Uganda hosted the biggest number of refugees on the African continent. The number of displaced people who crossed the border from neighbouring countries to Uganda exceeded 1.2 million over the last five years, thus increasing six times since 2012 (Muhwezi et al. 2004)[2, 3].

In recent years, the trend of the refugee resettlement process in Uganda has shifted more to urban areas compared to rural area refugee camps (Omata et al. 2012)[4]. Those refugees who have established their resettlement in the urban areas are highly educated and professionally trained persons (Nshemerirwe et al, 2013)[5]. By the end of 2010, the urban refugee population in Kampala was 37,820 persons and this number increased to 41,449 by the end of December 2011 (Nshemerirwe, 2013)[5]. Today, this high number is still on a steady increase with approximately 74,000 within Inter-Aid refugee centre in Kampala city alone.

Refugees are defined as "individuals who owing to well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or opinion, are outside the country of their nationality and are unable or, owing to such fear, are unwilling to avail themselves to the protection of that country" (Patil, 2010)[7]. Mental health research among refugees has mostly focussed on psychopathology related to the trauma of wars and disasters (Teodorescu et al, 2012)[8, 9]. However, the refugee experience is characterized by multiple events occurring in multiple contexts that persist over time. They experience diverse stressors that accumulate over three phases; pre-flight, flight, and lastly exile and resettlement. These situations are characterised by marginalization, socio-economic disadvantage, loss of social support, and "cultural bereavement" all of which are associated with mental health challenges such as depression, generalised anxiety, panic attack, adjustment disorder and somatisation (Maitland A, 2017)[11].

Mental health is recognised as a key public health issue for conflict affected refugee populations. Social isolation and stigmatizations are very common phenomena among refugee populations. On

their arrival refugees are confronted with increased dependence on others and fewer opportunities for meaningful services such as work, education, health care services and others. Forced migration thus results in exposure to multiple adverse effects. Common mental health problems seen in refugees include Major Depression Disorder, Post-traumatic stress disorder, anxiety disorder and others (Maitland A 2017)[11]. Depression remains the commonest mental health problem in refugees (Patil et al. 2010)[7]. Many refugees also get involved in excessive use of alcohol and drugs and other undue behaviours to boost their mood or escape feelings of guilt or misery (Conner et al. 2012)[12] with suicide being an ever present danger (Maynard et al. 2003)[13]. Although there are several studies conducted on mental health problems among refugee populations throughout the world, there is limited information regarding Major Depressive Disorder and other psychiatric disorders among the vulnerable refugee population in Uganda. Elsewhere in East Africa, there was a study conducted in Southeast Ethiopia among the Somali refugees in Melkadida refugee camp which showed that low socioeconomic status and various post migration resettlement difficulties were the main factors associated with Major Depressive disorder (Feyera et al. 2015)[14.]

Research in Africa regarding mental health challenges among the refugee population is limited. A few studies that have examined the mental health of African refugees have mainly focused on gender-based violence (Hynes M and Cardozo BL (2000)[15], post-traumatic stress disorder, PTSD, (Peltzer et al. 1999)[16] and depression (Feyera et al. 2015)[14]. The aim of this study was to determine the prevalence and factors associated with MDD among adult refugee study participants attending an urban refugee centre in Kampala, Uganda.

METHODS

The study setting was the Inter-Aid Refugee Centre in Kampala city, situated at Plot 254, Albert Cook Road, Kampala. It was established in 1988 as a Non-Governmental Organization (NGO) and registered with the Ugandan National NGO board. It works with the United High Commission for Refugees (UNHCR) vision to see that "refugees are protected by the government of Uganda, live in safety and dignity with the host communities and progressively attain lasting solutions" through comprehensive protection strategies, that this urban refugee multi-sectorial program continues to implement[17]. The Inter-Aid refugee centre in Kampala is one of the urban refugee sites in Uganda. Any individual who is either a refugee or an asylum seeker from any African country is welcomed by the Inter-Aid refugee centre with no prejudice whatsoever. The current number of refugees

registered with the Inter-Aid refugee centre in Kampala is 74,000. This number is steadily increasing and about 75% of them are adults above 18 years old.

On daily basis more than one hundred refugees attend and get services from the Inter-Aid refugee centre. At this urban refugee centre multiple services are provided to the refugees including psychosocial support, health insurance, children primary education and adult English language classes. In addition to this, support on legal issues and disputes are also provided. We used a cross sectional descriptive study design to consecutively recruit the study participants. The target population was adult refugees aged above 18 years who were fully registered as refugee in Uganda. The accessible population were registered adult refugees attending to the Inter-Aid Refugee Centre in Kampala district. The study population was registered adult refugees attending to the Inter-Aid Refugee Centre in Kampala District during the study period that fulfilled the selection criteria and signed the consent form. The study unit was a registered adult refugee, above 18 years, attending to the Inter-Aid Refugee Centre in Kampala District during the study period who fulfilled the selection criteria and signed the consent form. We excluded those adult refugees who had visual or hearing impairment, had language barriers (could not speak English, French or Swahili) or those who were severely sick and had cognitive impairments.

Study procedures

A consecutive sampling procedure was carried out to recruit the study participants who met study criteria and who attended the centre during working days. Using the Kish Leslie formula for descriptive studies[18], we calculated the sample size to be of 374 adult refugees. The recruitment process was carried out with a Research Assistant (RA) together with the Inter-Aid staff. The research assistant approached the potential participants to assess eligibility and interest in the research project. Then the research assistant explained to the study participant about the study objectives, procedures including risks and benefits and obtained informed consent from the participant who then signed the consent form. Following this, the RA administered the study questionnaires in privacy and confidence.

Study measures

The Dependent variable was Major Depressive Disorder. In this study an individual who met the Mini-International Neuropsychiatric Interview (MINI)[19] criteria (DSM 5)[20] for the depression module was regarded as having Major Depressive Disorder (MDD).

The Independent variables included socio-demographic characteristics, psychological distress, suicide risk, traumatic events, social support, coping skills, and post-migration difficulties. These will be elaborated on below.

1. *Socio-demographic characteristics:* Age, gender, income, educational level, living situation, country/citizenship, religion, current employment and marital status. These were assessed using a standardized study questionnaire.

2. *Psychological distress:* Psychological distress was assessed using the Self Reporting Questionnaire (SRQ-20)[21]. A score of 6 and above indicated psychological distress (Nakimuli-Mpungu et al. 2012)[22].

3. *Suicide Risk:* Suicide risk assessment was done using the SAD PERSONS scale (Granello et al., 2010)[23]. Each positive answer was given 1 to give the total score out of 10. Participants were categorised as low risk (score of 0-4); moderate risk (score of 5-6) or high risk (score of 7-10).

4. *Traumatic events:* A Life Events Check List (LECL) was designed to screen for potentially traumatic experiences /or events in a respondent's life time. The LECL has 18 items and it has been validated in Uganda (Nakimuli-Mpungu et al, 2012)[22]. Participants were asked whether they had experienced a given traumatic event or not. The LECL included traumatic items such as "has the participant been forced to torture others?" "Has the participant witnessed torture/killing of another person?" Each participant indicated for each event that happened to him/her or witnessed by indicating either "YES or NO".

5. *Social Support:* Perceived social support (PSS) was assessed with a 12 item multidimensional social support scale, a Social Support Questionnaire (SSQ) that was designed to measure perceptions of social support and satisfaction with that social support (Zimet et al., 1988)[24]. The scale has been validated in Uganda and it has three subscale structures namely family (FAM), Friends (Fri) and Significant Others (SO).It was scored from 1-7 for each statement respectively and then added up to find the total score based on

a seven- point Likert scale with higher scores indicating greater perceived social support from family, friends and significant others. (Nakigudde et al. 2009)[25]

6. *Coping skills:* A Modified Copying Inventory (MCI) was used to assess a range of both positive and negative coping responses which established how the study subject responded when they were confronted with difficult or stressful events in their lives. It was based on a four point scale and rated 1-4 as 1-2 score to indicate no or little use, 3-4 score medium use and higher scores (>4) frequent use of the coping strategy (Carver et al. 1989)[26].

7. *Post- migration difficulties:* Post-migration difficulties were assessed using the Post Migration Living Difficulties Questionnaire (PMLDQ)[27]. The respondents had to respond as either 'Yes' or 'No' and the scoring system was as '1' or '0 'respectively.

Data management

The study tools were also translated from English to French as the most widely spoken language at the Inter-Aid Refugee Centre as majority of the refugees were from the Democratic Republic of Congo (DRC) and Burundi, countries which use French as the official national language. The research assistant was trained in ethical data collection techniques and use of the study instruments. The questionnaires were pre-tested and the results discussed to identify errors. The errors were corrected before data collection started. Meetings between the principal investigator and the research assistant were held at the end of each research day in order to identify and correct any shortcomings and to ensure completeness of the questionnaires. Electronic data was created from the raw data using Epi-computer software. Double entry was conducted to minimise entry errors. All collected data was stored under lock and key away from study site and the computer was secured with a password only known to the principal investigator.

Statistical analysis was carried out using SPSS, version 11.5 computer software. Frequencies of participants' characteristics were computed and logistic regression analyses were conducted to determine associations between various participants' characteristics and MDD. For the bivariate analyses, we used the Chi-square test or Fisher's Exact test for categorical variables and independent sample t- test for continuous variables. Variables that had a significant bivariate association with significant depressive symptoms were included in the multivariate logistic regression model. Data was summarized into frequency tables and figures. A p-value of ≤ 0.05 was considered statistically significant.

Ethics and authorisations

Clearance was obtained for from the Makerere University School of Medicine Research Ethics Committee (SOMREC) for Institutional Review Board (IRB) ethical approval and subsequently cleared by the National Council of Science and Technology (UNCST). Permission to carry out the research was obtained from the Office of the Prime Minster (OPM) that oversees the United Nations High Commission for Refugee office (UNHCR) in Uganda. Confidentiality, anonymity and privacy were guaranteed. Informed consent was obtained from each participant with focus on the purpose of the study, guarantee of anonymity and confidentiality and benefits of the study. Participants were allowed to withdraw from the study at any time if they wished and this did not affect the study design. Participants who were identified as having Major Depressive Disorder (MDD) were managed as outpatients from the Inter-Aid refugee centre by a psychiatrist who works there. However, those participants with severe major depression or who were suicidal and needed admission were referred to the Mulago Hospital Bbossa Mental Health Clinic or Butabika National Referral Mental Health Hospital (BNRMHH) for further assessment and management. In case the study questions evoked traumatic experiences, the participant was provided with emotional support by the principal investigator or research assistants and/or referral for further management as deemed.

RESULTS

Socio-demographic characteristics of the study participants

A total of 374 adult refugee participants who were above 18 years were recruited and interviewed from the Inter-Aid Refugee Centre in Kampala District from 3rd December 2018 to 7th Feb 2019. Approximately two-thirds were female 218 (58.29 %). The mean age was 37.05 years old (SD =12.08). The majority of participants were Congolese by nationality 242 (64.71%) followed by Burundi 49 (13.10%). The rest of the socio-demographic characteristics are summarised in Tables 1.

Table 1: Socio-demographic characteristics of the refugee study participants

Variables	Frequency (N=374)	Percentage (%)

Age (years)		
Mean (SD)	37.1(12.1)	
Sex		
Male	156	41.7
Female	218	58.29
Marital status		
Single	126	33.69
Married/co-habiting	182	48.66
Divorced/separated	11	2.94
Widowed	55	14.71
Nationality		
Congo (DRC)	242	64.71
Rwanda	19	5.08
Burundi	49	13.10
South Sudan	15	4.01
Eritrea	17	4.55
Ethiopia	7	1.87
Somali	23	6.15
Others	2	0.53
Religion		
Catholic	93	24.87
Pentecostal	44	11.76
Protestant	170	45.45
Traditional	6	1.60
Islam	58	15.51
Others	6	0.80
Level of education		
No formal education	19	5.08
Primary level	88	23.53
Secondary level	160	42.78
Tertiary level (Diploma, university)	107	28.61
Employment		
Yes	74	19.79
No	300	80.21
Family		
Migrated with family	263	70.32
Family not intact now	189	50.53
Family history of Depression	61	16.31
Language (English) proficiency		
Fluent	125	33.42
Some difficulty	78	20.86
Not at all fluent	171	45.72

Family wise, about half of the participants were in a relationship at the time of the study with 182 (48.66%) either married or co-habiting. On arrival in Uganda 263 (70.32%) had migrated with their families. However, at the time of the study,189 (50.53) **did not** have their families still intact, with only 185 (49.47%) still having their families intact. In terms of employment, most of the refugees 300 (80.21%) were unemployed. Of those in formal employment (74, 19.79%), 45.5% worked in the private sector, 31.2% worked in self-employment in various trades or businesses and only 1.3% worked in the public sector. Stay at home mothers were 7.8%, students 11.7% and peasants 2.6%. Only one third (33.42%) of the refugees were fluent in English, the official national language in Uganda; with 78(20.86%) having some difficulty and 171(45.72%) having no knowledge of English at all.

Prevalence of Major Depressive Disorder (MDD) among study participants

Based on the Self Report Questionnaire (SRQ) of the total study participants (374) those who scored 6 and above on the SRQ were 191(51%) CI (0.46, 0.56) indicating psychological distress.

The prevalence of Major Depressive Disorder was 174 (46.52%) among the study population of the urban refugees attending the Inter-Aid Centre in Kampala city, Uganda. Out of these, 138 (79.31%) had low suicidal risk, 32 (18.39%) moderate risk and 4 (2.30%) had high suicidal risk. The factors independently associated with Major Depressive Disorder were older age, (aOR 6.56, 95% CI 1.25-34.44, p= 0.026), suicidal risk score (aOR 1.63, 95% CI 1.04-2.57, p= 0.034), perceived social support (aOR 0.8, 95% CI 0.71-0.90; p=0.001), positive coping skills (aOR 0.61, 95% CI 0.45-0.82; p=0.001) and negative coping skills (aOR 1.96, 95% CI 1.31-2.92; p=0.001). Women and men were almost equally affected with MDD. Participants who were getting older were more likely to get depressed compared to younger participants. Participants who had perceived social support and positive coping skills were less likely to meet the MINI DSM 5 criteria for Major Depressive Disorder.. The refugee participants with negative coping strategies were more likely to meet the MINI DSM V criteria for Major Depressive Disorder (MDD)

Table 2 below summarises the frequency of MDD and associated socio-demographic characteristics.

Table 2: Prevalence of MDD and associated Socio-demographic characteristics among the refugees attending the Inter-Aid refugee centre, Kampala, Uganda.

Variable	Frequency of MDD (n, %)			
	No(N=200)	Yes(N=174)	Crude OR(95% CI)	[*]p-value
Age				
<30years	92 (79.3)	24 (20.7)	1	
30-39years	65 (60.2)	43 (39.8)	2.54 (1.4, 4.58)	**0.002***
40-49years	29 (30.9)	65 (69.1)	8.59 (4.59, 16.09)	**<0.001***
>50years	12 (21.4)	44 (78.6)	14.06 (6.44, 30.68)	**<0.001***
Sex				
Female	113 (51.8)	105 (48.2)	1	
Male	85 (54.5)	71 (45.5)	0.899 (0.595, 1.357)	0.612
Marital Status				
Single	89 (70.6)	37 (29.4)	1	
Married/cohabiting	91 (50)	91 (50)	2.41 (1.49, 3.89)	**<0.001***
Divorced/separated	4 (36.4)	7 (63.6)	4.21 (1.16, 15.24)	**0.029***
Widowed	14 (25.5)	41 (74.5)	7.04 (3.44, 14.44)	**<0.001***
No of children mean ±(SD)	2 (2)	4 (3)	1.37 (1.26, 1.5)	<**0.001***
Migrated with family				
No	68 (61.3)	43 (38.7)	1	
Yes	130 (49.4)	133 (50.6)	1.62 (1.03, 2.54)	**0.037***
Highest level of education attained				
No formal education	10 (52.6)	9 (47.4)	1	
Primary level	31 (35.2)	57 (64.8)	2.04 (0.75, 5.56)	0.162
Secondary	90 (56.3)	70 (43.8)	0.86 (0.33, 2.24)	0.764
Tertiary level/diploma	32 (62.7)	19 (37.3)	0.66 (0.23, 1.91)	0.444
University level/degree	35 (62.5)	21 (37.5)	0.67 (0.23, 1.91)	0.449
Employment				
No	150 (50)	150 (50)	1	
Yes	48 (64.9)	26 (35.1)	0.54 (0.32, 0.92)	**0.023**[*]
Family status at time of interview				
Intact	92 (49.7)	93 (50.3)	1	
Single	106 (56.1)	83 (43.9)	0.77 (0.52, 1.16)	0.219
Language Problem				
Fluent	84 (67.2)	41 (32.8)	1	
Some difficulty	45 (57.7)	33 (42.3)	1.5 (0.84, 2.69)	0.172
Non-fluent	69 (40.4)	102 (59.6)	3.03 (1.87, 4.91)	**<0.001***
Length of time since Arrival	59 (39.0)	68 (45)	1.01 (1, 1.01)	**0.035***
Family history of depression	21 (34.4)	40 (65.6)	2.48 (1.4, 4.4)	0.**002***
*Statistical significance p-value ≤ 0.05				

The socio-demographic characteristics associated with Major Depressive Disorder among the studied refugee participants were: age, marital status, number of children, migration with family, employment, income, language proficiency, time since arrival and family history of depression.

Post Migration Difficulties among the study participants

This was assessed using the Post Migration Living Difficulties Questionnaire (Aragona M et al, 2012)[27]. The majority of participants described their current living environment as very challenging. Out of the 374 participants 362 (96.80%) reported 'having difficulties accessing health and welfare services. Nearly all the refugees, 353 (94.4%), reported "worrying about their families who were out of Uganda" and they had left behind in their countries of origin. The least challenging difficulties among the participants were "difficulties in the immigration/asylum process" which was reported by only 48 (12.8%) and "ethnic (racial) discrimination (verbal/physical)" which was reported by 114 (30.5%). Table 3 shows the MDD associations.

Table 3: Associations of Post-migration difficulties with MDD among the refugees

Depression				
Variable	**Crude OR (95% CI)**	**p-value**	**Adjusted OR (95% CI)**	***p-value**
Worries about family not in Uganda				
No	1		1	
Yes	3.01 (1.08, 8.39)	0.035	2.85 (0.96, 8.45)	**0.050***
Difficulty employment				
No	1		1	
Yes	2.41 (0.98, 5.93)	0.054	1.08 (0.37, 3.13)	0.889
Difficulty adjusting cultural life				
No	1		1	
Yes	3.69 (1.91, 7.1)	<0.001	3.66 (1.82, 7.36)	**<0.001***
Difficulty immigration/asylum				
No	1		1	
Yes	0.95 (0.51, 1.74)	0.855	0.74 (0.37, 1.51)	0.412
Racial discrimination				
No	1		1	
Yes	2.31 (1.47, 3.63)	<0.001	2.79 (1.68, 4.64)	**<0.001***
Difficulty access health services				
No	1		1	

| Yes | 4.63 (1, 21.42) | 0.05 | 7.12 (1.4, 36.13) | **0.018**[*] |

*Statistical significance level at p≤ 0.05.

The significant post-migration difficulties associated with MDD amongst the refugees were difficulty in accessing the health and welfare services, difficulty adjusting to the cultural life in Uganda, being discriminated against and worrying about their families who were out of Uganda whom they had left behind in their countries of origin. These post migration difficulties had a negative impact on the mental health and social integration on the refugee populations

Comorbid medical illnesses among the study participants

Comorbid chronic medical illnesses were common amongst the refugees. These were assessed using a prepared Medical Illness Questionnaire to which participants responded as either "YES" or "NO" when asked about physical medical illnesses. Fig 1 below summarises these illnesses.

Fig 1: Co-morbid medical illnesses among the refugees
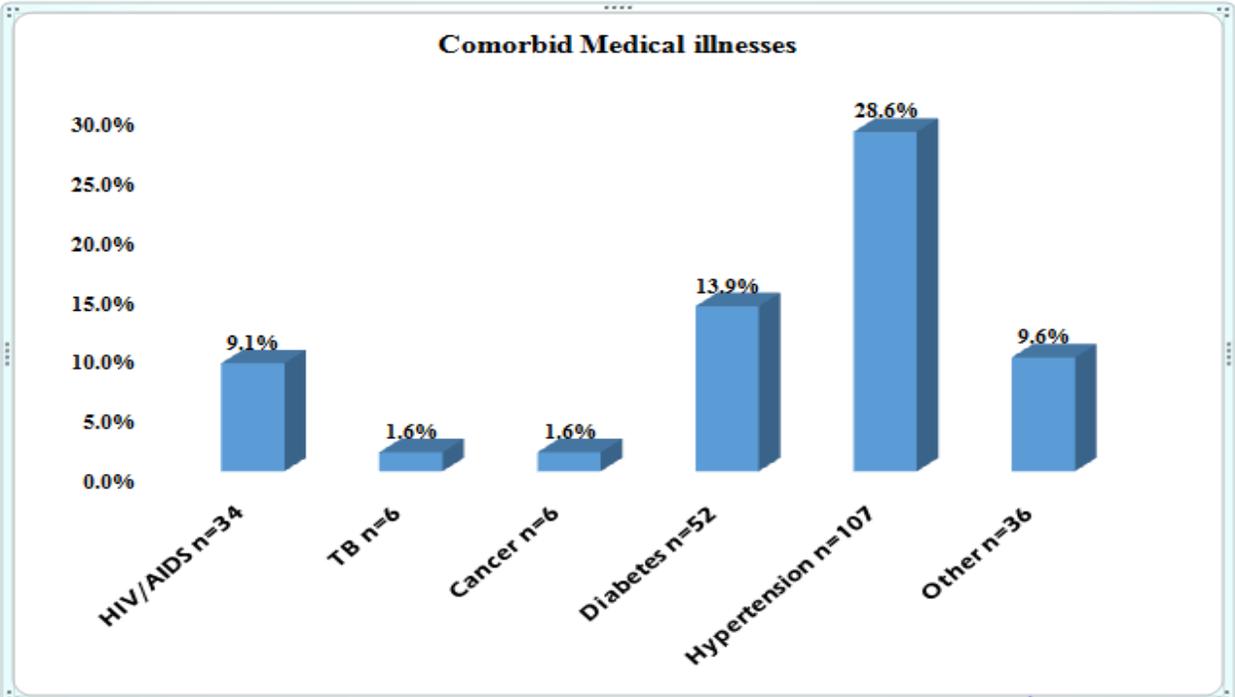
The chronic medical illnesses which were common among the study participants included hypertension as most prevalent, at 107 (28.6%), followed by Diabetes Mellitus, 52 (13.9%), HIV/AIDS 34 (9.1%), TB and cancer each at 6 (1.6%). The other illnesses accounted for 36 (9.6%) and included peptic ulcer disease (PUD), epilepsy, arthritis, cardiac and renal diseases. Though medical diseases were not significantly associated with MDD, accessing healthcare was.

DISCUSSION

This study set out to determine the prevalence of Major Depressive Disorder (MDD) and its associated factors among the adult refugee participants attending Inter- Aid refugee centre in Kampala city, Uganda. The majority of our study participants were females 218 (58%) with the mean age of 37.05 years (SD 12.08%). Most of the refugee populations originated from more than ten African countries with only a few non-African countries such as Yemen and Syria. The Congolese made up the majority (64.7%) followed by Burundi (13.10%). This is probably due to geographical proximity, cultural similarity and use of a common language of communication (Swahili). Around 70% of the study participants had migrated with their family and the major reason for migration was war conflict based on unsettled political crises. Uganda is the leading African country in hosting more than 1.2 million refugee populations. This may be due to Uganda's hospitable refugee policy and political stability in these past 30 years. (Muhwezi WW and Sam DL, 2004)[3]

From our study finding, the prevalence of MDD was found to be 46.52% a finding suggesting that MDD was a very common mental health problem among the refugee population compared to the general Ugandan population which is usually stated to be around 6.7% (Ovuga et al., 2017)[28] . Other studies in Africa found similar high rates of MDD among Internally Displaced Persons (IDP) Southern Sudan and IDP refugees in Northern Uganda at 49.9 % and 67% respectively (Roberts et al., 2009)[29]. Feyera et al., 2015)[14] found MDD prevalence of 38.3% % among the Somali refugee population at Melkadida refugee camp in South-Eastern Ethiopia[14]. Elsewhere in a Mexican refugee camp, Hynes M and Cardozo DL (2003)[15] found an MDD prevalence of 38.8% among Guatemalan refugees[15]. However in other studies conducted among the refugee populations in some European countries; the prevalence of Major Depressive Disorder was much higher than our

finding e.g a Norwegian a study conducted among the refugee population found an MDD prevalence of 64% (Teodorescu et al., 2012)[9]. These differences could be due to environmental/cultural factors as refugees in Europe come from very culturally different countries[38, 39]. The second reason could be also due to the use of different instruments. We used the diagnostic MINI depressive module of DSM 5 criteria [19, 20] and yet the other studies used screening tools for depression such as PHQ-9, the SRQ-20 and HSCL-25 among the internally displaced peoples in Southern Sudan, and northern Uganda and Ethiopia respectively [21, 22, 32]. Our study used a diagnostic tool, the new version of DSM 5 MINI depressive module[19, 20] and after a psychological distress screening instrument, the SRQ-20[22].

All the psychosocial determinants with significant association on bivariate analysis at p-value $\leq$ 0.05 were entered into the multivariate analysis to see if these factors were independently associated with Major Depressive Disorder. Our study found that respondents who were elderly were more likely to get depressed compared to younger participants. Age was independently associated with MDD, with ages of over 50 years being strongly associated with MDD. However, in the Ethiopian study among the Somali refugees at Melkadida refugee camp the finding about older age was not statistically significant and not associated with Major Depressive Disorder (Feyera, et al. 2015)[14]. The possible explanation for older age and its association with depression in our study was probably due to the decreased social support (no family, friends), financially insecurity, joblessness and physical illnesses such as diabetes, hypertension with reported difficulties in accessing health services.

As regards to gender, we found that females and males were equally affected with Major Depressive Disorder. This contrasted with other studies e.g. the Ethiopian study among the Somali refugees at Melkadida refugee camp where women were twice more likely to get depressed than men (Feyera et al., 2015)[14]. This was a similar finding to the Mexican study among Guatemalan refugees (Hynes M and Cardozo BL, 2003)[15]. However, in a study conducted in Toronto among Ethiopian immigrants and refugees the women were less likely to get depressed than men (Fenta et al., 2004)[33].

As for employment, refugees residing in rural camps have different living conditions to those in urban settings. Most studies among the refugee populations were conducted in rural areas. We conducted our study among the urban refugee population which were free to work, move and

participate in other daily activities as the nationals. Indeed about 20% of our study participants were employed. However their income was generally low and thus not a protective factor to Major Depression Disorder when compared to the unemployed (p-value 0.062)

For family factors, in our study, being divorced was not associated with Major Depressive Disorder which was opposite to other study findings e.g. among the Somali refugee population in Melkadida camp in Ethiopia (Feyera et al., 2015)[14] or among Vietnamese refugees in USA (Buchwald et al., 1993)[34]. However, our participants who had children or big families were three times more likely to get depressed than those who were single and with no children. This finding was more associated with men who were the household heads and providers for the families.

As for traumatic events, our study finding was that experiencing traumatic events was not singularly independently associated with Major Depressive Disorder. This finding was inconsistent to other refugee study findings e.g. the Somali refugee in Melkadida refugee camp in Ethiopia (Feyera et al., 2015)[14] and the Guatemalan refugee study in a Mexican refugee camp. (Sabin et al, 2003)[36]. This could be possibly explained by having a more favourable post migration resettlement environment in Kampala which allowed the refugees easy access to mental health services aimed mainly at combatting trauma-related mental illness such as Post traumatic stress disorder (PTSD), anxiety and depression. There was easy access to a psychiatrist, psychologist or social workers at Uganda's Inter-Aid refugee centre in Kampala.

Our participants who had good perceived social support from their family, friends or other special persons were less likely to get depressed compared to those who had none. This finding was similar to studies conducted among the Ethiopian immigrants /or refugees in Toronto (Fenta et al., 2004)[33] and Vietnamese refugees in USA (Buchwald et al., 1993)[34] both of which showed low prevalence rates of MDD. The reason was that refugees in Toronto and USA had bigger numbers of social services with higher psychosocial support from community families, friends and other special persons.

As for coping skills, in our study, refugees who had positive coping skills were less likely to develop Major Depressive Disorder. Positive coping skills were a protective factor from getting depression. While those participants who had negative coping skills were twice more likely to get depressed comparing to those who had none. One study reported that inability to cope with the

new adverse life events puts the refugee at increased risk of developing depression (Feller et al., 2001)[35.] Discrimination was reported as often stressful in our refugees similar to other studies[37].

CONCLUSIONS AND RECOMMENDATIONS

The prevalence of Major Depressive Disorder (MDD) among the urban adult refugee study participants attending Inter-Aid refugee centre in Kampala district was high at 46.52%. These were urban refugees and couldn't be compared to rural camp refugee populations of other studies. Among the participants, those who were of older age, had low social support, high suicidal risk scores, and who used negative coping skills were more likely to meet criteria for Major Depressive Disorder. However, those who used positive coping skills were less likely to have Major Depressive Disorder as a strong protective factor against MDD**.**

Based on the results of our study, prevalence of Major Depressive Disorder (MDD) was found to be high among our urban refugee population. We recommend that MDD should be routinely screened for among the refugee populations especially within the urban refugee camps. The practice of routine screening for MDD should be done routinely for early detection and treatment of depression so as to lower the burden of the illness and enhance the quality of life of the refugees and lessen suicide risk. This calls for increasing awareness of mental illness issues and implementing mental health training of staff within the refugee camps in Africa as elsewhere in the world.

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