Psychology Research and Behavior Management

Dovepress
Taylor & Francis Group

Open Access Full Text Article

ORIGINAL RESEARCH

Prevalence of Post-Traumatic Stress Disorder and Associated Factors Among Internally Displaced Persons (IDPS) In Mogadishu Cross-Sectional Study

Ismail Mohamed Sh Abukar[1], Abdirashid Ali Asir Rage[1], Mohamed Omar Warsame[2]

[1]School of Public Health and Research, Somali National University, Mogadishu, Somalia; [2]Department of Public Health, Federal Ministry of Health and Human Services, Mogadishu, Somalia

Correspondence: Mohamed Omar Warsame, Email diirshe143@gmail.com

Background: An important mental health concern is Post-Traumatic Stress Disorder (PTSD), especially for Internally Displaced Persons (IDPs) in the Horn of Africa. Limited access to psychosocial support and primary health care exacerbates mental health issues.
Aim: This study was to examine the prevalence of post-traumatic stress disorder and factors associated with IDPs in Mogadishu.
Methods: A cross-sectional study was conducted from Sep 25 to Oct 20, 2023, employing analytical design. The study population included individuals aged 18 and older directly exposed to forced displacement due to conflicts and disasters. A multistage random sampling method was used, with a final sample size of 364 participants from over 20 different camps in Daynile and KAHDA. Post-Traumatic Stress Disorder (PTSD) was assessed using Questionnaire of Post-Traumatic Stress Disorder Checklist for DSM-5 (PCL-5).
Results: The prevalence of PTSD among participants was 60%. The PTSD prevalence was highest among male respondents at 75% compared to 54% among the females with over half (63%) of the PTSD cases being females, while 37% were males. Only 0.3% reported the availability of mental health services, emphasizing the lack of adequate support.
Conclusion: The study highlights a significant prevalence of PTSD among Mogadishu's IDPs, underscoring the immediate need for mental health prioritization to address challenges in conflict-affected areas. The lack of mental health integration into primary care requires urgent intervention for enhanced services in the Horn of Africa. Recommendations propose targeted mental health interventions, especially for females, addressing gender-based violence and loss. Programs should consider those with multiple displacements, addressing cumulative trauma impact. Providing comprehensive support for those facing property destruction is crucial. Collaborative efforts among humanitarian organizations, local authorities, and mental health professionals are vital for an effective response to the mental health challenges faced by IDPs in conflict-affected areas.
Keywords: prevalence, post-traumatic, stress disorder, factors and internal displaced persons

Introduction

Post-Traumatic Stress Disorder (PTSD) is diagnosed based on six main criteria. The first involves the experience of intense fear, horror, or disturbed behavior following a traumatic event. Three of the criteria focus on specific symptoms: 1) repeated re-experiencing of the trauma, such as through intrusive thoughts, flashbacks, or repetitive play; 2) avoidance of reminders of the trauma or emotional detachment; and 3) ongoing heightened arousal, such as irritability, difficulty sleeping, or hypervigilance. The final two criteria address the duration of symptoms, which must last over a month, and the significant impact on the person's daily life.

The signs and symptoms must last for at least one month after the stressful incident and cause significant impairment in functioning.[1] Trauma is defined as an event that impacts a person, with the ability to drastically disrupt an individual's life. If not addressed promptly and effectively, it can result in personality changes.[2] People are exposed to a painful traumatic event in their lives, the severity of which varies from one person to the next, such as car accidents, contracting

Received: 16 September 2024
Accepted: 22 January 2025
Published: 25 January 2025

some chronic or serious diseases, wars, natural, abuse, and mistreatments, such as physical assault, sexual assault, and domestic violence. Or, in a sociological context, the kidnapping, and death of a parent. These may lead to a post-traumatic stress disorder, which is characterized by the emergence of chronic psychological or neurological difficulties as a result of the individual's symptoms.[1] Between 50 and 90% of people worldwide go through at least one traumatic event in their lives, but only a tiny portion of those who are exposed to trauma may develop symptoms of post-traumatic stress disorder.[3] PTSD is a reaction to trauma that includes acute anxiety, helplessness, or horror, as well as chronic re-experience of the traumatic event, persistent avoidance of trauma-related stimuli and numbing of the response, and persistently elevated arousal levels.[4]

People who have been compelled to leave their homes but are still inside their own country's boundaries are known as internally displaced persons, or IDPs.[5] It is unknown how many people were being displaced globally by slow-onset disasters by the end of 2018. At least 760,000 additional people were displaced due to drought in nine different nations that year: Afghanistan, Brazil, Burundi, Ethiopia, Iraq, Madagascar, Mongolia, Senegal, and Somalia. Extreme heat and little precipitation have also fueled devastating wildfires around the world, which have forced hundreds of thousands of people to flee their homes, severely damaged a great deal of property, and delayed a speedy recovery.[6]

In 2016, an estimated 12.6 million people in Africa were displaced due to conflict, disasters, and violence.[7] Droughts and other natural disasters are related to the effects of conflict in many nations, resulting in instability and displacement. A prolonged drought in Somalia from 2010 to 2012, along with high levels of political instability, violence, and widespread poverty, has accelerated emergencies and famines, causing extensive displacement both within and across the country's borders. Somalia was in the midst of a crisis from May to October 2011, with about 265,500 individuals displaced during that time. The "sadness of the entire family" was mostly felt in the country's agricultural and pastoral regions and livelihoods, where the drought was most severe among the drivers.[8]

The majority of IDPs in metropolitan areas reside in unplanned and informal settlements. For example, Mogadishu is home to almost 400,000 IDPs, accounting for more than a third of Somalia's total IDP population. The two areas of Mogadishu are home to nearly 55% of the IDPs. All things considered; this is one of the largest populations of internally displaced people on the continent of Africa. Chronic displacement within Somalia is thus a ubiquitous phenomenon in urban Somalia, and it must be addressed separately from expanding urbanization and increasing urban and rural migration, as well as global urbanization. According to the UNHCR's repatriation program, 55% of the 3,000 refugees returning from Yemen resided in Mogadishu IDP camps, with only 1,385 refugees from Kenya returning to Mogadishu in 2016. Return of one's own accord.[9]

IDPs in their native country have worse mental health outcomes than refugees, according to several rigorous reviews. Post-traumatic stress disorder (PTSD) symptoms are widely recognized as one of the most prevalent mental health concerns among internally displaced persons (IDPs). The prevalence of the population may be much higher in conflict-ridden cultures.[10] Even though many people are exposed to traumatic situations at some time in their lives, most people recover to a point where they may enjoy their lives without the need for psychological intervention. An Epidemiological study indicates that 6.2–8.2% of men and 13.0–20.4% of women suffer from PTSD. The Global Mental Health Survey revealed that over a 12-month period, high-income countries had higher prevalence rates (Northern Ireland: 3.8%, US: 2.5%; New Zealand: 2.1%) compared to low- and middle-income countries (Colombia: 0.3%; Mexico: 0.3%).[11] PTSD affects 9–36% of refugees, immigrants, and asylum seekers, whereas only 1–2% of the general population experiences it.[12]

According to the Trauma Screening Questionnaire, approximately (47.04%) of adolescents met the criteria for PTSD following an earthquake in Indonesia.[13] PTSD affected 32% of the population, while 22% experienced depression and 17% dealt with anxiety. A significant treatment gap existed among individuals who appeared to need care, as 74% of those who screened positive for one of these conditions and recognized they had an issue did not obtain psychosocial or mental health assistance within the previous year.[14] As a result, the majority of IDPs in the area lack psychosocial support from their communities as well as access to primary health care that delivers mental health services. In Mogadishu, however, there is a high prevalence of mental illnesses among IDPs. PTSD symptoms were experienced by 32% of respondents, whereas depression symptoms were experienced by 59% of respondents.[15] From 1970 to 2005, 48 studies were published examining the development and persistence of PTSD in civilian survivors of combat trauma and torture. Several of these studies found that PTSD was especially prevalent among refugees and displaced individuals

affected by different types of war-related trauma.[16] Concerned, psychologists predict that the financial burden of investment was rise over the next decade. Mental illness, particularly mental illness, is expected to be the second most frequent disease by 2020, according to (WHO) the World Health Organization.[7]

According to research conducted in African countries, post-traumatic stress disorder (PTSD) is a health risk that persists in huge populations following years of civil war. With an average of 11.8% to 54%, Uganda has one of the highest incidences of PTSD in East Africa.[17] Between 3.6% and 88% of IDPs are estimated to have PTSD, according to numerous scientific research conducted in different nations.[18]

For persons affected by conflict, mental illness, particularly post-traumatic stress disorder (PTSD), has been established as a significant public health issue; wars and armed conflicts contribute to poverty, unemployment, social unrest, unstable living conditions, and social transformation. As a result, even after the post-traumatic stress disorder has passed, PTSD is strongly linked to poor quality of life.[19] The prevalence of PTSD and associated factors due to conflict, and other natural disasters vary by country and culture. The impact of violence, drought, and floods on impacted populations is exacerbated in low-resource contexts by a lack of mental health prioritization, as well as access to and integration of mental health into primary health care.[20,21]

Therefore, this study was examining the prevalence and post-traumatic stress disorder, and factors associated among IDPs and was identify the need for health facilities centers near IDPs camp to provide mental health services, as well as a preliminary study that serves as basic data for future studies on mental illness in vulnerable people among IDPs in the Horn of Africa.

Methodology

Study Design and Site

Mogadishu's boundaries (like those of other cities in the country) are undefined, and estimates of its size range from 80.4 km2 to 148.9 km2, with a population of 1.7 million to 2.9 million people, it is divided into seventeen districts. Mogadishu has also provided a haven for Somalis displaced by floods, droughts, and famines in neighboring regions (for example, in 2011). Internally displaced people (IDPs) are an important engine of urban expansion and have a long-term impact on the city, as most IDPs do not wish to return or are unable to do so because they sold land in their home country. Mogadishu was home to roughly 500,000 internally displaced persons in 2018.[22]

This study utilized an analytical cross-sectional design to examine the prevalence of post-traumatic stress disorder (PTSD) among internally displaced persons (IDPs) in Mogadishu.

Study Population

The target population for this study comprises people aged 18 and older who were directly exposed to fleeing from fleeing their homes due to conflict, floods, droughts, and famines in neighboring regions were done using a multistage random sampling method.

Inclusion and Exclusion Criteria

All the individuals that live in households in the camps eligible aged 18 years and older and then explain the aim of the study were included in this study.

Those individuals who did not accept the consent and those who were found to have communication hindrances such as the deaf and mute as well as those too sick to communicate and all individuals who came recently to the camp for less than 6 months were excluded from the study.

Sample Size and Sampling Technique

The sample size was determined using the openEpi software for population proportion formula with the assumption of a 95% confidence interval, 5% margin of error, and 32.2% as prevalence for PTSD among IDPs in Mogadishu,[15] and was assessed, taking into account a non-response rate of 10%. The final sample size was set at 364 samples, collected from more than 20 different camps located in the most densely populated IDP area in Mogadishu, namely Daynile and KAHDA. Approval of the study was obtained from the university institutional ethics committee, and informed consent was obtained by the leaders of the respective camps.

Data Collection and Procedures

Data collection employed structured and pretested questionnaires administered by interviewers using ODK software for streamlined data collection. The team conducting the data collection included a nurse and two public health professionals who received regular supervision. The questionnaire, initially created in English, underwent a comprehensive training process for data collectors. This training aimed to equip them with the necessary skills for effective participant interviews, clarification of any ambiguous questions, and communication of the study's purpose.

Post-Traumatic Stress Disorder (PTSD) was assessed using the Post-Traumatic Stress Disorder Checklist for DSM-5 (PCL-5). This standardized instrument serves as a self-report rating scale designed to evaluate the 20 symptoms outlined in the DSM-5 criteria for PTSD.[23]

The total score was calculated by summing the values of the 20 items, resulting in possible scores ranging from 0 to 80. Respondents used a 5-point Likert scale for each item (0 = Not at all, 1 = A little bit, 2 = Moderately, 3 = Quite a bit, 4 = Extremely). A cut-off points of ≥33 was established for identifying cases indicating a significant likelihood of Post-Traumatic Stress Disorder (PTSD).[23] The validity and reliability of the PCL-5 have been thoroughly tested and demonstrated among displaced populations and refugees in various countries. For instance, in Iraq, the Cronbach's alpha coefficient was found to be 0.85, indicating a high level of internal consistency and reliability for the Post-Traumatic Stress Disorder Checklist for DSM-5 (PCL-5) in that specific context,[24] and Zimbabwe (Cronbach's alpha = 0.92).[25]

Data Management Plan and Analysis

A carefully crafted data collection tool was developed to ensure the quality of data in this study. The lead investigator carried out a comprehensive daily review of the data collected. Any issues or challenges that arose during the data collection process were promptly addressed, with corrective actions taken as necessary. Data collectors were provided with guidance to ensure the accuracy of participants' responses. Additionally, a field supervisor double-checked the completed questionnaires immediately after each field interview and during the submission process. This rigorous quality control process ensured that the data collected was accurate, complete, and consistent daily. After the data collection phase, the gathered data, including samples and completed questionnaires, was thoroughly cleaned to remove any inconsistencies or errors. The data was then analyzed using the Statistical Package for Social Sciences (SPSS) version 25. Descriptive statistics were used to present the data, summarizing it through frequency and percentage distributions, which made it easier for readers to identify trends. A p-value of 0.05 or less was considered the threshold for statistical significance. Additionally, multivariate analysis was conducted, adjusting all variables to evaluate potential confounding factors.

Ethical Consideration

Ethical approval for the study was obtained from the Postgraduate Ethical Review Committee of Somali National University (SNU/SPHR/0026/2023) and before starting the study and follows the principles outlined in the 1964 helsinki Declaration and its subsequent amendments.

The study's purpose, procedures, risks, benefits, and participants' rights were explained, ensuring voluntary participation. Confidentiality was maintained by excluding names or identifiers in questionnaires and results. Participants were free to answer questions based on their knowledge and experience about Post-Traumatic Stress Disorder and Associated Factors Among Internal Displaced Persons (IDPS) with data collectors serving only as guides.

Results

Socio-Demographic Information of Respondents

A total of 364 participants from 24 camps in 2 districts took part in the study. Majority were females, married, with no formal education and an average age of 37 years on the average, there were 6 children per household. The main economic income was daily laboring (Table 1).

Table 1 Socio-Demographic Information of the Study Participants (n=364)

Demographic Characteristics	Frequency	Percentage
District		
Daynile	212	58.2%
KAHDA	152	41.8%
Gender		
Female	256	70.3%
Male	108	29.7%
Marital status		
Divorced	40	11.0%
Married	305	83.8%
Single	7	1.9%
Widowed	12	3.3%
Level of education		
No formal education	359	98.6%
Primary	5	1.4%
Employment status		
Daily labor	339	93.1%
Jobless	25	6.9%
Age of respondent		
18–24	73	20.1
25–44	185	50.8
45–64	82	22.5
≥65	24	6.6
Number of children		
0–1	45	12.36
2–4	134	36.81
5–9	148	40.66
≥ 10	37	10.16

Displacement History and Camp Related Factors

The majority of the respondents have been displaced more than once in the past 6 months. Two-thirds (67%) had started work since displacement. A total of 69% reported that health services were available and only 0.3% reported availability of mental health services (Table 2).

Frequency of Traumatic Events

Most respondents had a traumatic experience, except 13 (4%). The most common traumatic experiences were lack of housing and lack of food at 73% and 81%, respectively (Table 3).

Table 2 Displacement History and Camp Related Factors (N= 364)

IDP Camp Related Factor	Category	Frequency	Percentage
Number of displacements in last 2 years	Once	102	28%
	Twice	137	38%
	More than 2 times	125	34%
Duration since last displacement	Under 6 months	183	50%
	6 or more months	181	50%
Started new work since displacement	Yes	243	67%
	No	121	33%
Health service availability	Yes	251	69%
	No	113	31%
Mental health service availability	Yes	1	0.3%
	No	250	69%
	Not applicable	113	31%

Table 3 Patient Prevalence of Traumatic Experiences (N = 364)

Types of Traumatic Event	Frequency	Percentage
Destruction of personal property	238	65
Lack of housing	267	73
Lack of food	294	81
Witnessing family murder	182	50
Ill health	121	33
Forced isolation	193	53
Torture	147	40
Serious injury	47	13
Witnessing stranger murder	243	67
Made to accept ideas	138	38
Forced separation	213	59
Unnatural death	207	57
Imprisonment	131	36
War	238	65
Abduction	115	32
Rape	135	37

Table 4 Frequency of Traumas by Gender of Respondent (N = 364)

Traumas	Female	Male	Overall
0–3	63 (73%)	23 (27%)	86 (24%)
4–7	59 (82%)	13 (18%)	72 (20%)
8–11	74 (73%)	27 (27%)	101 (28%)
12–16	60 (57%)	45 (43%)	105 (29%)
Total	256 (70%)	108 (30%)	364 (100%)

Frequency of Traumas by Gender of Respondent

Out of the 16 trauma experiences listed, more than half of the respondents (57%) had experienced 8 or more traumas (Table 4) with females experiencing more trauma incidences than males (Figure 1).

Bivariate Analysis for Post-Traumatic Stress Disorder Among IDPs

Provides a detailed examination of the prevalence of PTSD among internally displaced persons (IDPs) based on various demographic and experiential characteristics. The analysis reveals significant associations between PTSD and several factors. Age-wise, younger individuals (18–24 years) show a lower prevalence of PTSD (16%) compared to older age groups, with the highest prevalence observed in the 45–64 years category (27%). Gender analysis indicates that females have a higher prevalence of PTSD (63%) compared to males (37%). Marital status shows that married individuals have a higher prevalence of PTSD (89%) compared to single (1%) and divorced individuals (9%). Education levels indicate that those with no formal education are more likely to suffer from PTSD (98%) compared to those with primary education (2%). Employment status highlights that unemployed individuals have a higher prevalence of PTSD (97%) compared to those engaged in daily labor (3%). Additionally, the experience of traumatic events such as the destruction of personal property, lack of housing, and witnessing family murder are significantly associated with higher PTSD prevalence. For instance, individuals who experienced the destruction of personal property have an 87% prevalence of PTSD, while those who did not have a 13% prevalence. Similarly, lack of housing and food are associated with higher PTSD rates (85% and 89%, respectively). The table underscores the profound impact of both demographic factors and traumatic experiences on the mental health of IDPs, highlighting the need for targeted interventions to address these vulnerabilities (Table 5).

The Multivariate Analysis for Post-Traumatic Stress Disorder (PTSD)

The multivariate analysis for post-traumatic stress disorder (PTSD) among internally displaced persons (IDPs) reveals several significant predictors. Age is a crucial factor, with individuals aged 45–64 being nearly three times more likely to

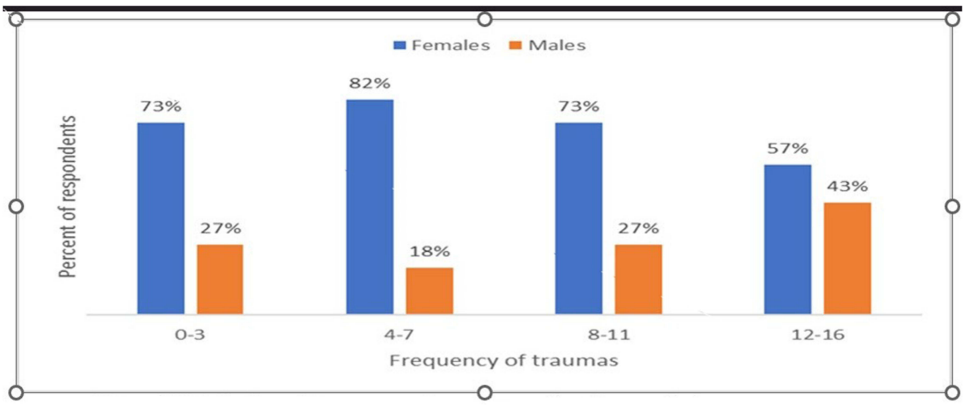

Figure 1 Distribution of trauma experiences by gender of respondent.

https://doi.org/10.2147/PRBM.S488388

Table 5 Bivariate Analysis of Post-Traumatic Stress Disorder Among IDPs (N = 364)

Characteristic	PTSD		*P*-value
	No	Yes	
Age			
18–24	38 (26%)	35 (16%)	<0.001
25–44	82 (57%)	103 (47%)	
45–64	23 (16%)	59 (27%)	
≥65	2 (1%)	22 (10%)	
Gender			
Female	118 (81%)	138 (63%)	<0.001
Male	27 (19%)	81 (37%)	
Marital status			
Divorced	20 (14%)	20 (9%)	0.005
Married	111 (77%)	194 (89%)	
Single	6 (4%)	1 (%)	
Widowed	8 (6%)	4 (2%)	
Displacements			
Once	67 (46%)	35 (16%)	<0.001
2–4	74 (51%)	171 (78%)	
5 and above	4 (3%)	13 (6%)	
Education			
None	145 (100%)	214 (98%)	0.067
Primary	0	5 (2%)	
Employment			
Daily labor	126 (87%)	213 (97%)	<0.001
Jobless	19 (13%)	6 (3%)	
Destruction of personal property			
No	97 (67%)	29 (13%)	<0.001
Yes	48 (33%)	190 (87%)	
Lack of housing			
No	65 (45%)	32 (15%)	<0.001
Yes	80 (55%)	187 (85%)	
Lack of food			
No	45 (31%)	25 (11%)	<0.001
Yes	100 (69%)	194 (89%)	

(*Continued*)

Table 5 (Continued).

Characteristic	PTSD		*P*-value
	No	Yes	
Witnessing family murder			
No	95 (66%)	87 (40%)	<0.001
Yes	50 (34%)	132 (60%)	
Ill health			
No	124 (86%)	119 (54%)	<0.001
Yes	21 (14%)	100 (46%)	
Torture			
No	111 (77%)	106 (48%)	<0.001
Yes	34 (23%)	113 (52%)	
Traumas			
0–3	74 (51%)	12 (5%)	<0.001
4–7	48 (33%)	24 (11%)	
8–11	19 (13%)	82 (37%)	
12–16	4 (3%)	101 (46%)	

experience PTSD compared to those aged 16–24. Gender also plays a role, as males are more likely to suffer from PTSD than females. Marital status shows that married individuals have higher odds of PTSD compared to divorced individuals. The number of displacements significantly impacts PTSD prevalence, with those displaced five or more times having a much higher likelihood of PTSD. Economic factors such as the destruction of personal property and lack of housing are strongly associated with PTSD. Psychosocial variables, including lack of food, witnessing family murder, and experiencing ill health, also significantly contribute to PTSD. Additionally, individuals who have experienced torture are more likely to suffer from PTSD. The frequency of traumas experienced is a strong predictor, with those experiencing 12–16 traumas having an extremely high likelihood of PTSD (Table 6).

Discussion

This study was conducted within the Daynile and KAHDAcamps, located in the Banadir Region of Somalia, targeting internally displaced individuals. The purpose of this study was to examine the prevalence of post-traumatic stress disorder (PTSD) and the associated factors. Findings showed that PTSD affected 60% of the internally displaced population, with a 95% confidence interval of 55% to 65%. This findings of prevalence same or aligns with a study conducted in southern Ethiopia, which reported a PTSD rate of 58.4%.[23] In contrast, the findings of this study showed a lower prevalence compared to a study conducted in Medellin, Colombia, which reported a prevalence rate of 88%,[24] and North Uganda (74%).[25] Differences in prevalence rates can be attributed to differences in exposure to different types of infections. Notably, the most common type of trauma in Colombia is kidnapping, suggesting that differences in PTSD prevalence may be influenced by traumatic experiences in each setting[24] It could potentially induce more stress compared to the destruction of personal property, a trauma type that was most commonly reported in the present study.[25] Differences in study design and sampling methods may also contribute to differences between a qualitative study and the use of convenience sampling in Colombia[24] and the results may show a higher level of bias and subjectivity due to the use of convenience samples in Colombia, as opposed to the probability samples used in this study. In addition, variation in assessment tools could be another factor influencing this distinction; in Colombia, PTSD was assessed using

Table 6 Multivariate Analysis of Post-Traumatic Stress Disorder Among IDPs (N = 364)

Predictor Variable	Crude Odds Ratio	95% CI	
		Lower	Upper
Age			
18–24	1		
25–44	1.36	0.79	2.35
45–64	2.79	1.43	5.42
≥65	11.94	2.62	54.53
Gender			
Female	1		
Male	2.57	1.56	4.23
Marital status			
Divorced	1		
Married	1.75	0.90	3.39
Single	0.17	0.02	1.51
Widowed	0.50	0.13	1.93
Displacements			
Once	1		
2 to 4	4.42	2.71	7.23
5 and above	6.22	1.89	20.51
Employment			
Daily labor	1		
Jobless	0.19	0.07	0.48
Destruction of personal property			
No	1		
Yes	13.24	7.86	22.31
Lack of housing			
No	1		
Yes	4.75	2.89	7.81
Lack of food			
No	1		
Yes	3.49	2.02	6.02
Witnessing family murder			
No	1		
Yes	2.88	1.86	4.46

(*Continued*)

Table 6 (Continued).

Predictor Variable	Crude Odds Ratio	95% CI	
		Lower	Upper
Ill health			
No	1		
Yes	4.96	2.91	8.46
Torture			
No	1		
Yes	3.48	2.18	5.55
Traumas			
0–3	1		
4–7	3.08	1.41	6.74
8–11	26.61	12.10	58.53
12–16	155.71	48.30	502.02

a culturally validated 24-item checklist.[24] PCL-C for DSM-IV in Nigeria, but the PCL-5 was used with the LEC-5 and Extended Criteria A in the current study.[26] Furthermore, the difference in results can be attributed to differences in sample size and study settings. The current study included both IDPs in camps and those who reside in the host community, while the study in northern Uganda included a larger sample size.

These differences may contribute to the observed differences in the prevalence of PTSD.[25] Nonetheless, this study did not include any participants who were residents of the host community. In contrast, the current study's estimated prevalence was higher than that of previous research, particularly in Mogadishu, Somalia (23%),[27] Nigeria (42%),[19] Darfur (54%),[28] Sri Lanka (2.3%),[29] Georgia (23.3%)[30] Iraq (20.8%)[31] and Central Sudan (12.3%).[32] The possible reasons for the observed differences could be the difference in tools in which used Nigeria and Iraq's studies the Harvard trauma questionnaire (HTQ)[19,31] and the k-section of the Composite International Diagnostic Interview (CIDI) was used in Sri Lanka,[29] but the current study used PCL-5 with LEC-5 and extended measurement A which was adjusted with a better internal consistency to measure PTSD.[26]

Females were 2.6 times more likely to develop PTSD than males. This could be attributed to the fact that females face an increased likelihood of developing PTSD, possibly due to a lower threshold for exposure to psychological trauma compared to males.[24] It could also be a result of direct psychological consequences such as rape or sexual abuse, experiencing the violent loss of a partner, children, or the challenges of becoming a single parent or widow.[25]

Indeed, the impact of exposure to traumatic events was significantly higher among females compared to males.[28,33] Another contributing factor could be that females typically exhibit a more emotional and ruminative response to stress, potentially influencing their higher susceptibility to PTSD.[14] This heightened emotional and ruminative response to stress could contribute to an increased risk of developing PTSD.

In terms of frequency of displacement, individuals who experienced 2–4 displacements were 4.4 times more likely to develop PTSD than those who were displaced only once. Additionally, participants who went through more than five displacements were 6.2 times more likely to develop PTSD compared to those who experienced only one displacement. This association can be attributed to the fact that individuals who have been displaced repeatedly are more likely to experience repeated trauma and violence compared to those who have been displaced only once. Thus, increased exposure to displacement-related trauma may increase the risk of developing PTSD.[16]

In addition to that, the study discovers a statistically significant relationship between destruction of private property and PTSD. Those who experienced such an event were 13.2 times more likely to develop PTSD than those who did not.

This can be attributed to the perception among participants that losses of this type are difficult, if not impossible, to replace, leading to increased psychological distress.[19] Moreover, following traumatic events such as the destruction of personal property, experiencing acute stress is a common response. If this acute stress continues, there is an increased risk of developing PTSD.[19]

The study found that participants who witnessed or experienced the murder of family members or friends were 2.8 times more likely to develop PTSD than those who did not experience such an event. This connection may stem from the profound impact of losing a loved one, which can parallel the experiences of other trauma victims. This similarity may manifest in reminders of the event, intrusive negative thoughts such as considerations of revenge, and can significantly impact emotional health.[19,34] Those who have witnessed the violent loss of a family member may significantly increase the risk of developing PTSD.[35]

Respondents who experienced four or more of the sixteen traumatic events described in the questionnaire were found to be more likely to develop PTSD. Specifically, they were three times more likely to have had 4–7 traumatic events, 26.6 times more likely to have had 8–11 traumatic events, and 155.7 times more likely to have had 12 or more traumatic events, compared to individuals who had 0–3 traumatic events out of 16. This increased risk can be attributed to the cumulative negative impact on mental health when an individual is exposed to multiple traumatic events, exceeding the impact of a single separate trauma.[14,16,36] A higher level of exposure to various types of traumatic events may be indicative of increased severity of PTSD.[25,37]

Strength and Limitations of the Study

The study on PTSD among IDPs in Mogadishu has several strengths. It addresses a critical and under-researched topic, shedding light on the mental health challenges faced by a vulnerable group in conflict-affected areas. The methodology is robust, as the study utilizes a validated instrument, the PCL-5, to assess PTSD, which ensures the accuracy and reliability of the findings. The use of a multistage random sampling method further enhances the representativeness of the sample. Additionally, the data collection process is thorough, incorporating diverse socio-demographic variables and detailed accounts of trauma experiences, which adds depth to the analysis. Furthermore, the study provides actionable recommendations, such as integrating mental health services into IDP support programs, which offer practical solutions for stakeholders.

However, there are some limitations. The findings are geographically and contextually restricted, as the study focuses only on two districts in Mogadishu, which limits the generalizability to other regions or populations. The cross-sectional design is another limitation, as it does not allow for establishing causality between trauma exposure and PTSD prevalence. The exclusion criteria, which omitted individuals who were too sick to communicate or had been displaced for less than six months, may have resulted in the underrepresentation of severe cases. Additionally, while the study highlights the extremely low availability of mental health services (0.3%), it does not explore the structural barriers to access or provide detailed intervention strategies. Self-reported data on PTSD symptoms and trauma experiences are subject to recall or social desirability biases, which might affect the accuracy of the results. Finally, the study focuses only on adults and excludes individuals under 18, missing an important opportunity to understand PTSD in younger populations who might also be significantly impacted.

Conclusion

This study makes a significant contribution to understanding the mental health challenges faced by internally displaced persons (IDPs) in Mogadishu, focusing on the high prevalence of PTSD and the factors contributing to its occurrence. By targeting a highly vulnerable population in conflict-affected areas, it sheds light on the unique challenges of displacement, cumulative trauma, and gender disparities in mental health outcomes. The study's use of validated tools such as the PCL-5 enhances its reliability, and its findings reveal a critical gap in access to mental health services, with only 0.3% of respondents reporting availability. The research emphasizes the urgent need for integrated mental health care in primary health systems, alongside targeted interventions addressing the specific needs of women and those experiencing repeated displacements or severe trauma. It also provides a foundation for future research on PTSD in the Horn of Africa, offering valuable baseline data for policymakers and humanitarian organizations.

Recommendations

We propose that screening and essential therapies for internally displaced people (IDPs) suffering from depression and PTSD should be part of the first actions taken. Establishing a referral system for psychiatric problems is also crucial. A comprehensive social support and protection program should also be implemented by governmental and nongovernmental groups that are committed to the welfare of internally displaced people. The goal of this strategy is to lessen psychological suffering and shield camp residents from additional post-migration trauma.

Acknowledgments

The authors wish to express their gratitude to the study participants for their contributions.

Disclosure

The authors declare that there are no conflicts of interest associated with this study.

References

1. Perry BD. Stress, trauma and post-traumatic stress disorders in children. *Child Trauma Acad*. 2007;17:42–57.
2. Motreff Y, Baubet T, Pirard P, et al. Factors associated with PTSD and partial PTSD among first responders following the Paris terror attacks in November 2015. *J Psychiatr Res*. 2020;121:143–150. doi:10.1016/j.jpsychires.2019.11.018
3. Pauff SM, Miller SC. 基因的改变NIH Public Access. *Bone*. 2012;78(2):711–716.
4. Pai A, Suris AM, North CS. Posttraumatic stress disorder in the dsm-5: controversy, change, and conceptual considerations. *Behav Sci*. 2017;7(1):7. doi:10.3390/bs7010007
5. Shultz J, Ceballos ÁMG, Espinel Z, Oliveros SR, Fonseca MF, Florez LJH. Internal displacement in Colombia: fifteen distinguishing features. *Disaster Health*. 2014;2(1):13–24. doi:10.4161/dish.27885
6. On GR. Internal displacement summary. 2019.
7. Morina N, Akhtar A, Barth J, Schnyder U. Psychiatric disorders in refugees and internally displaced persons after forced displacement: a systematic review. *Front Psychiatry*. 2018;9. doi:10.3389/fpsyt.2018.00433
8. Bilak A, Cardona-Fox G, Ginnetti J, et al. Global report on internal displacement. 2016.
9. Joint Programme Document. "Reinteg: innovative durable solutions for IDPs and returnees in Mogadishu through enhanced governance, employment and access to basic and protective services" April 2017. 2017:1–82.
10. Chukwuorji JBC, Ifeagwazi CM, Eze JE. Event centrality influences posttraumatic stress disorder symptoms via core beliefs in internally displaced older adults. *Aging Ment Health*. 2019;23(1):113–121. doi:10.1080/13607863.2017.1396580
11. Bryant RA. Post-traumatic stress disorder: a state-of-the-art review of evidence and challenges. *World Psychiatry*. 2019;18(3):259–269. doi:10.1002/wps.20656
12. Close C, Kouvonen A, Bosqui T, Patel K, O'Reilly D, Donnelly M. The mental health and wellbeing of first generation migrants: a systematic-narrative review of reviews. *Global Health*. 2016;12(1):1–13. doi:10.1186/s12992-015-0138-4
13. Kandeger A, Guler HA, Egilmez U, Guler O. Major depressive disorder comorbid severe hydrocephalus caused by Arnold – Chiari malformation Does exposure to a seclusion and restraint event during clerkship influence medical student's attitudes toward psychiatry? *Indian J Psychiatry*. 2018;59(4):2017–2018.
14. Roberts B, Makhashvili N, Javakhishvili J, et al. Mental health care utilisation among internally displaced persons in Ukraine: results from a nation-wide survey. *Epidemiol Psychiatr Sci*. 2019;28(1):100–111. doi:10.1017/S2045796017000385
15. Ali M, Mburu J. Prevalence of posttraumatic stress disorder and depression among internally displaced persons in Mogadishu. 2022:1–16.
16. Hamid AARM, Musa SA. Mental health problems among internally displaced persons in Darfur. *Int J Psychol*. 2010;45(4):278–285. doi:10.1080/00207591003692620
17. Ovuga E, Boardman J, Wasserman D. The prevalence of depression in two districts of Uganda. *Soc Psychiatry Psychiatr Epidemiol*. 2005;40(6):439–445. doi:10.1007/s00127-005-0915-0
18. Pfeiffer A, Elbert T. PTSD, depression and anxiety among former abductees in Northern Uganda. *Confl Health*. 2011;5(1):1–7. doi:10.1186/1752-1505-5-14
19. Sheikh TL, Mohammed A, Agunbiade S, Ike J, Ebiti WN, Adekeye O. Psycho-trauma, psychosocial adjustment, and symptomatic post-traumatic stress disorder among internally displaced persons in Kaduna, Northwestern Nigeria. *Front Psychiatry*. 2014;5:1–6. doi:10.3389/fpsyt.2014.00127
20. Doherty S, Hulland E, Lopes-Cardozo B, et al. Prevalence of mental disorders and epidemiological associations in post-conflict primary care attendees: a cross-sectional study in the Northern Province of Sri Lanka. *BMC Psychiatry*. 2019;19(1):1–12. doi:10.1186/s12888-019-2064-0
21. Porter M, Haslam N. Predisplacement and postdisplacement of refugees and internally displaced persons. *J Am Med Assoc*. 2005;294(5):610–612. doi:10.1001/jama.294.5.602
22. Earle L. Mogadishu: city scoping study. 2021.
23. Madoro D, Kerebih H, Habtamu Y, et al. Post-traumatic stress disorder and associated factors among internally displaced people in South Ethiopia: a cross-sectional study. *Neuropsychiatr Dis Treat*. 2020;16:2317–2326. doi:10.2147/NDT.S267307
24. Richards A, Ospina-Duque J, Barrera-Valencia M, et al. Posttraumatic stress disorder, anxiety and depression symptoms, and psychosocial treatment needs in Colombians internally displaced by armed conflict: a mixed-method evaluation. *Psychol Trauma Theory Res Pract Policy*. 2011;3(4):384–393. doi:10.1037/a0022257
25. Roberts B, Ocaka KF, Browne J, Oyok T, Sondorp E. Factors associated with the health status of internally displaced persons in northern Uganda. *J Epidemiol Community Health*. 2009;63(3):227–232. doi:10.1136/jech.2008.076356

26. Lima EP, Vasconcelos AG, Berger W, et al. Cross-cultural adaptation of the Posttraumatic Stress Disorder Checklist 5 (PCL-5) and Life Events Checklist 5 (LEC-5) for the Brazilian context. *Trends Psychiatry Psychother*. 2016;38(4):207–215. doi:10.1590/2237-6089-2015-0074
27. Ali M, Mutavi T, Mathai M, Mburu J. Prevalence of posttraumatic stress disorder and depression among internally displaced persons in Mogadishu. 2022.
28. Keane TM, Marshall AD, Taft CT. Posttraumatic stress disorder: etiology, epidemiology, and treatment outcome. *Annu Rev Clin Psychol*. 2006;2:161–197. doi:10.1146/annurev.clinpsy.2.022305.095305
29. Husain F, Anderson M, Cardozo BL, Becknell K, Blanton C, Araki D. Prevalence of war-related mental health conditions and association with displacement status in postwar Jaffna District, Sri Lanka. *JAMA*. 2011;306(5):522–531. doi:10.1001/jama.2011.1052
30. Makhashvili N, Chikovani I, Mckee M, Bisson J, Patel V, Roberts B. Mental disorders and their association with disability among internally displaced persons and returnees in Georgia. *J Trauma Stress*. 2014;27(5):509–518. doi:10.1002/jts.21949
31. AlShawi AF. Prevalence of posttraumatic stress disorders among sample of internally displaced persons in Iraq: a preliminary study. *J Community Med Health Educ*. 2018;8(2). doi:10.4172/2161-0711.1000599
32. Salah TTM, Abdelrahman A, Lien L, Eide AH, Martinez P, Hauff E. The mental health of internally displaced persons: an epidemiological study of adults in two settlements in Central Sudan. *Int J Soc Psychiatry*. 2013;59(8):782–788. doi:10.1177/0020764012456810
33. Getnet B, Medhin G, Alem A. Symptoms of post-traumatic stress disorder and depression among Eritrean refugees in Ethiopia: identifying direct, meditating and moderating predictors from path analysis. *BMJ Open*. 2019;9(1):e021142. doi:10.1136/bmjopen-2017-021142
34. Elhabiby MM, Radwan DN, Okasha TA, El-Desouky ED. Psychiatric disorders among a sample of internally displaced persons in South Darfur. *Int J Soc Psychiatry*. 2015;61(4):358–362. doi:10.1177/0020764014547061
35. de Jong JTVM, Komproe IH, Van Ommeren M, et al. Lifetime events and posttraumatic stress disorder in 4 postconflict settings. *JAMA*. 2001;286 (5):555–562. doi:10.1001/jama.286.5.555
36. Thapa SB, Hauff E. Psychological distress among displaced persons during an armed conflict in Nepal. *Soc Psychiatry Psychiatr Epidemiol*. 2005;40(8):672–679. doi:10.1007/s00127-005-0943-9
37. Bogic M, Ajdukovic D, Bremner S, et al. Factors associated with mental disorders in long-settled war refugees: refugees from the former Yugoslavia in Germany, Italy and the UK. *Br J Psychiatry*. 2012;200(3):216–223. doi:10.1192/bjp.bp.110.084764