



# Traumatic War Experiences and Post-Traumatic Stress Disorder among Adult Women at an Internationally Displaced Persons' Center in Mekelle, Tigray, Ethiopia

Lemlem Redda Tesfay, Joyzy Pius Egunjobi, and Wambua Pius Muasa

Faculty of Arts and Social Sciences

Department of Counseling Psychology

Catholic University of Eastern Africa

Email: [lemlemreda@yahoo.com](mailto:lemlemreda@yahoo.com)

**Abstract:** Tigray's displacement situation, as well as past traumas experienced by affected people, intensified the risk of Post-Traumatic Stress Disorder (PTSD) among women after the Tigray conflict (2020–2022). The purpose of this study was to find the relation between the effects of the war and prevalence of PTSD among adult female IDPs at an IDP Centre in Mekelle, Tigray, Ethiopia. In particular, it examined the nature of war experiences, the frequency and intensity of PTSD symptoms, the relationship between war experiences and PTSD symptom clusters, and coping strategies used by displaced women. A convergent parallel mixed methods design was used, based on Feminist Theory and Maslow's Hierarchy of Needs. Data were gathered from 193 women randomly selected and six purposively selected case workers in in-depth interviews. Quantitative data were analysed using descriptive statistics, Pearson correlation and multiple linear regression, while qualitative data were analysed by directed content analysis. Almost all respondents had experienced multiple types of violence: direct violence, witnessed violence, sex and gender-based violence, traumatic loss and deprivation from displacement. The PCL-5 cut-off for probable PTSD was met by 99.5% of respondents. Displacement deprivation was the consistent predictor of intrusion, avoidance and overall PTSD severity, while witnessing violence and traumatic loss predicted intrusion when controlling for other exposures. Coping strategies included individual, spiritual, social and institutional resources, and lower symptom severity was associated with informal social support. The results indicate that psychosocial screening should be part of general health services and community coping resources should be formally recognised in mental health programmes for women in conflict-affected settings.

**Keywords:** war experiences; post-traumatic stress disorder; internally displaced women; coping strategies; Tigray

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## 1. Introduction

Armed conflict continues to be one of the greatest public health threats in the world and can have wide-ranging impacts on psychological health, social functioning and access to basic services. Conflict can also leave

populations susceptible to having witnessed violence or been forcibly displaced, to experiencing traumatic loss and to being living with long-term deprivation, all of which can lead to increased vulnerability to developing Post-Traumatic Stress Disorder (PTSD). The prevalence of PTSD is estimated to be 3.9% worldwide and is extremely high in people living in armed conflict areas (Charlson et

al. 2019), and burden of PTSD and depression is high in the survivors of war globally (Hoppen et al. 2021).

This is disproportionately on women. Women are often exposed to multiple and cumulative trauma in conflict situations, such as sexual and gender-based violence (SGBV), direct violence, violence perpetrated by family members, traumatic loss, and the challenges of displacement, all of which are known to be associated, alone, with the onset of post-traumatic stress disorder (PTSD) (Vallejo-Martín et al., 2021). Therefore, it is important to understand the whole of the war's impact on women if one is to speak to the psychological effects the war had on them.

Africa continues to have an unjustified burden of conflict-induced displacement and psychopathology on a regional level. Fifteen African countries were included in a systematic review, which reported a pooled prevalence of PTSD among IDPs of 56.35%, significantly higher than the global estimates, with war-related trauma contributing to considerable variation between countries in the prevalence of PTSD (Ng et al., 2020).

The conflict in Tigray, Ethiopia that started in November 2020 has had severe mental health impacts nationwide. The prevalence of GBV among women in Tigray was reported to be 43.3% by Fisseha et al. (2023), and the stigma and obstacles to care for GBV survivors during wartime was documented by Embaye (2024). PTSD symptoms are prevalent in the communities affected by the war in Ethiopia, with the rate being 48.4% compared to 23.9% for non-displaced populations (Tinsae et al., 2024; Gebreyesus et al., 2024).

There are few studies investigating the association between specific types of war experiences and specific symptom clusters of PTSD among women displaced in a specific war situation and no studies that investigated the relationship between the validated quantitative war exposure measures and PTSD to qualitative measures of coping strategies in a specific context of Tigray. It's a place where the scope of interventions for impacted women is limited to trauma-rather than general-based interventions. The present study aims to investigate this issue by examining the nature and intensity of traumatic experiences of adult women attending IDP centre in Mekelle, Tigray, relationship between traumatic war experiences and symptom clusters of PTSD, as well as coping responses which women use to reduce war related distress. The study is justified by its capacity to deliver evidence specific to the context that can be utilized for mental health and psychosocial support programming in Tigray and other humanitarian settings

based on Feminist Theory (Herman, 2015) and Maslow's Hierarchy of Needs (Maslow, 1943).

## 1.1 Specific Objectives

The study was guided by the following specific objectives:

1. To determine the forms of war experiences among women at the Saba Kare Internally Displaced Center in Mekelle, Tigray, Ethiopia.
2. To assess the prevalence and severity of PTSD among women at the Saba Kare Internally Displaced Center in Mekelle, Tigray, Ethiopia.
3. To determine the relationship between the forms of war experiences and PTSD symptom clusters among women at the Saba Kare Internally Displaced Center in Mekelle, Tigray, Ethiopia.
4. To identify the coping strategies used by women at Saba Kare Internally Displaced Centre to manage PTSD symptoms related to their war experiences.

## 2. Literature Review

### 2.1 Theoretical Review

This study was based on two complementary frameworks namely Feminist Theory and Maslow's Hierarchy of Needs. The feminist theory was used to interpret the gendered nature of the trauma assessed by the subscales: Sexual and Gender Based violence, Threats to personal safety, and Loss of social protection, and the relation between the above subscales, and the increased risk for PTSD among women (Herman, 2015; Vallejo-Martín et al., 2021). Also, as the theory emphasizes agency, social support and access to resources which are useful for recovery, the interpretation of women's individual, spiritual, social and institutional coping mechanisms is influenced in a similar manner rather than only as passive victims. Maslow's Hierarchy of Needs (1943) was applied specifically to the Displacement Deprivation subscale. A deprivation of physiological and safety needs was hypothesized as a chronic stressor; this predicted the consistent relationship between deprivation and Intrusion, Avoidance and Overall Severity. This framing also enabled the understanding of the seemingly paradoxical result of a negative correlation between deprivation scores and symptom severity; women with the highest deprivation scores may have had more regular contact with the caseworkers. The frameworks were combined and applied to different aspects of the analysis, not as background information: Feminist Theory was applied to violence, coping; Maslow's theory was applied to deprivation and severity.

## 2.2 Empirical Review

The empirical evidence is consistent across the globe that there is a relationship between armed conflict and PTSD. PTSD is estimated to affect 3.9% of the general population (range: 14.0%- >15%) and affected by, but not directly exposed to, armed conflict, and >15% for those who are directly exposed to armed conflict, respectively (Charlson et al., 2019; World Health Organisation, 2022). Evidence for displaced populations also shows significantly higher rates of PTSD: refugees from Nakivale, Uganda (Bapolisi et al., 2020) and Syrian refugees in the Kurdistan region, Iraq (Mahmood et al., 2019) have both had significantly higher rates of PTSD compared to the general population and cumulative trauma exposure has consistently been identified as a leading predictor of symptom severity, including among Somali IDPs in Mogadishu (Abukar et al., 2025).

This pattern is confirmed in Africa at a higher level of magnitude at the regional level. A systematic review of 32 studies was done in IDPs from 15 African countries with a pooled prevalence of 56.35% PTSD, which is well above the global average, and a significant proportion of the cross-country variation was explained by war-related trauma (Ng et al., 2020; Taye et al., 2024). In all these contexts, women are consistently found to be more affected than men, especially due to interpersonal and sexual violence to which women are more vulnerable (Vallejo-Martín et al., 2021; Farhood et al., 2018). Findings from the Rwandan genocide suggest that women who witness violence against their close others are at one of the highest risk for experiencing high levels of symptoms following the conflict, and findings from northern Uganda indicate that the severity of symptoms is directly related to the number of experienced traumatic events: for each additional traumatic event, the relative risk of PTSD is 6.5 for IDPs exposed to 12 or more (Roberts et al., 2008). In addition to the effects of exposure to conflict, chronic post-displacement stressors such as food insecurity and disrupted health care have independently been shown to be associated with psychological distress (Miller & Rasmussen, 2010; ACAPS, 2024).

Evidence in context shows these dynamics in Ethiopia and Tigray, from the national and local level to support and nuance the regional picture. Fisseha et al. (2023) revealed that psychological, physical and sexual violence were the most prevalent forms of gender-based violence that Tigrayan women faced, with sexual violence having the highest psychological impact; and Embaye (2024) reported the stigma, health seeking barriers, and Orthodox Christian faith practices among women who survived sexual violence during the war. A study conducted in Ethiopia showed that the prevalence of PTSD in war-affected

communities is high at 48.4% (Afwerki et al., 2024) with 62.94% of IDP respondents scoring positive for PTSD, based on a systematic review of nine studies that were conducted in Ethiopia, while 44.32% of non-displaced persons (Tinsae et al., 2024) scored positive for PTSD, it can be inferred that loss and disability was a risk factor for PTSD among IDP household heads in Tigray. The vulnerabilities documented in Tigray are not unique to the region, but rather are likely to represent a pattern at the national level as demonstrated by conflict affected regions in Northeast Amhara where similar levels of conflict-related gender-based violence were documented during conflict (Dellie et al., 2024); a larger pattern of conflict-related gender-based violence exists in other parts of the country and should be addressed collectively through policy and other attention.

In terms of coping, mental health and psychosocial support (MHPSS) services are still poorly developed in Tigray, with only eight psychologists and seven One Stop Centres (OSCs) covering the whole region, as of April 2024 (ACAPS, 2024), and the overwhelming majority of GBV survivors reporting that they received no psychological or medical help (Fisseha et al., 2023). Significant symptom alleviation appears to be achievable in 12 weeks (e.g. in paraprofessional led group psychotherapy for displaced Bosnian women (Dybdahl & Pasagic, 2000)) demonstrating the potential of low resource, scalable interventions. Tigrayan women have been found to use collective and peer-based coping (Jolof et al., 2022) and spiritual practice (Embaye, 2024) coping, both of which would be informative over coping strategies that are symptom-specific such as praying for intrusive memories, as compared to generic coping measures (Sullivan et al., 2018).

## 2.3 Research Gaps

The literature reviewed indicates that, at all levels, there is a markedly greater risk of developing PTSD in the context of conflict and displacement, and that women are more likely to use informal, spiritual and community resources to cope with displacement, rather than formal resources. Unfortunately, there are three holes. First, past studies have been conducted on Tigrayan refugees that were based on prevalence of PTSD and failed to examine the connection between various forms of war experiences and various clusters of PTSD symptoms at a specific refugee site, thus limiting the possibilities to develop trauma specific interventions. Second, current descriptions of coping by Tigrayan survivors are primarily survivor-centred without utilizing the complementary perspective of case-workers who have seen more women and in different settings and could provide a broader perspective of coping. Thirdly, there is no published study that integrated standardised and validated quantitative data of trauma exposure and PTSD

with qualitative data from interviews in a single Tigrayan IDP site. This study seeks to address these three gaps all at once, creating context-specific evidence for prioritisation, design and implementation of mental health and psychosocial support programming as well as in humanitarian responses more broadly in Tigray.

### 3. Methodology

A convergent parallel mixed-methods design was used in this study, in which quantitative and qualitative data were collected concurrently, analysed separately, and integrated during interpretation. The quantitative strand addressed the first three objectives by examining the forms of war experiences, the prevalence and severity of PTSD, and the relationships between war experiences and PTSD symptom clusters. The qualitative strand addressed the fourth objective by providing contextual information on women's coping and psychosocial support. The study was conducted at Saba Kare Internally Displaced Persons (IDP) Centre in Mekelle, Tigray, Ethiopia, among adult women aged 18–65 years who were displaced by the Tigray conflict.

The target population comprised approximately 3,000 adult women residing at the centre. For the quantitative strand, 193 women were selected from the camp registration list using simple random sampling. The sample size was determined using Yamane's formula with a 7% margin of error at a 95% confidence level. A final sample of 193 women was obtained, representing a 100% response rate. For the qualitative strand, six female case workers were purposively selected based on their experience of working at Saba Kare IDP Centre, knowledge of women's experiences and coping mechanisms, Tigrinya language ability, and willingness to participate. The sample was considered sufficient based on thematic saturation.

Quantitative data were collected using a structured questionnaire comprising a socio-demographic inventory, an adapted War Experiences Inventory (WEI), and the 20-item PTSD Checklist for DSM-5 (PCL-5). The WEI assessed different forms of war-related experiences, while the PCL-5 assessed intrusion, avoidance, negative alterations in cognition and mood, and alterations in arousal and reactivity. A PCL-5 score of 31 or higher was used to identify probable PTSD. The instruments were translated and back-translated into Tigrinya and pilot tested among women from a different IDP site. Qualitative data were collected through semi-structured in-depth interviews conducted in Tigrinya by trained female enumerators.

Data collection commenced after ethical clearance and research permits were obtained from the Catholic University of Eastern Africa Institutional Ethics Review Committee and relevant regional authorities and the IDP centre administration. Trained female enumerators administered the questionnaires through face-to-face interviews, while qualitative interviews were conducted privately using an interview guide. The enumerators received training in trauma-informed interviewing and psychological first aid. Questionnaires were checked daily for completeness and consistency; interviews were recorded with permission and supported by field notes.

Quantitative data were coded, cleaned, and analysed using SPSS version 27. Frequencies, percentages, means, and standard deviations described socio-demographic characteristics and war experiences. Pearson correlation and multiple linear regression were used to examine relationships between war experiences and PTSD symptom clusters. The four war-experience dimensions were entered as independent variables to predict each of the four PTSD outcomes. Regression assumptions, including normality, linearity, multicollinearity, and homoscedasticity, were assessed, with robust standard errors used where required. Qualitative data were transcribed and analysed using directed content analysis, combining deductive and inductive coding. Member checking and an audit trail were used to enhance trustworthiness. The findings were integrated during interpretation.

Ethical principles were maintained throughout the study. Participation was voluntary and informed consent was obtained from all participants. Confidentiality and anonymity were protected through participant codes, private data collection, and secure data storage. Participants could decline to answer questions or withdraw without penalty. Distress protocols included pausing interviews, providing immediate support, and referral to available psychosocial support services.

## 4. Results and Discussion

### 4.1 Demographics Information

A total of 193 women participated, representing a 100% response rate against the target sample. Table 1 summarises respondents' socio-demographic and displacement-related characteristics.

**Table 1: Socio-Demographic and Displacement-Related Characteristics of Respondents (N = 193)**

| Variable                                | Category                    | n   | %    |
|-----------------------------------------|-----------------------------|-----|------|
| Age group (years)                       | 30–39                       | 77  | 39.9 |
|                                         | 40–49                       | 51  | 26.4 |
|                                         | 20–29                       | 45  | 23.3 |
|                                         | 50–59                       | 20  | 10.4 |
| Marital status                          | Married                     | 101 | 52.3 |
|                                         | Divorced/Separated          | 49  | 25.4 |
|                                         | Single                      | 25  | 13.0 |
|                                         | Widowed                     | 18  | 9.3  |
| Highest education                       | Primary School              | 100 | 51.8 |
|                                         | No Formal Education         | 58  | 30.1 |
|                                         | Secondary School            | 34  | 17.6 |
| Current livelihood source               | Humanitarian Support        | 192 | 99.5 |
| Access to social/family support in camp | No                          | 116 | 60.1 |
|                                         | Yes                         | 77  | 39.9 |
| Current physical health                 | Poor / Very Poor (combined) | 185 | 95.9 |

*Note.* Percentages computed on valid responses. Duration of displacement ranged from 3 to 75 months; median number of children was 4.

Most of the respondents were aged 30 – 39 years (39.9%) and 40 – 49 years (26.4%) showing discontinuity of marital and family structure elsewhere in Tigray's displacement context (Fisseha et al., 2023). It was observed that education level was low; only 18.1% of households had secondary education or better and, 30.1% of households had no education at all. Even though 87.0% of the respondents were self-employed before the displacement, nearly all of them (99.5%) used humanitarian assistance as the sole source of their livelihood, which corroborates the disruption of basic physiological and safety needs during displacement, as stated in Maslow's Hierarchy of Needs (Maslow, 1943). The two findings directly relevant to the theoretical framework of this study were directly relevant: 60.1% said they had no access to social or family support in camp, while both Feminist Theory and Maslow's Hierarchy of Needs highlighted social support and belonging as factors of trauma recovery; and 95.9% reported poor or very poor physical health in camp, with case workers later reporting qualitative evidence of high prevalence of physical sequelae of conflict-related trauma. When these patterns were combined, most of the females in this sample had both unmet basic/safety needs and limited social support which by Maslow's Hierarchy of

Needs would be expected to increase the psychological vulnerability.

## 4.2 Forms of War Experiences

Almost all respondents agreed that several of the WEI experiences they had were overlapping. 98.4% of all 193 respondents reported that they had personally been the victim of an armed attack or bombing and 99.0% reported that they felt their life was in danger, that they had seen human suffering, and that their lives were not personally and collectively prepared for displacement. 98.4% of all 193 respondents reported experiencing an armed attack or bombing, and 99.0% reported that their life was in danger, that they observed human suffering, and that their life was personally and collectively unprepared for displacement. There was also a high prevalence of attempted or completed sexual assault (95.9%), unwanted physical sexual advances (94.8%) and unwanted sexual comments (92.7%). The distress ratings for endorsed items remained high over time ( $M = 3.91\text{--}4.66$ , on a 5-point scale), indicating rather than alleviating distress.

**Table 2: Descriptive Statistics for the Four War-Experience Subscales (Count of Endorsed Events)**

| Subscale                 | Items (k) | N   | M    | SD   | Possible Range |
|--------------------------|-----------|-----|------|------|----------------|
| Violence Exposure        | 7         | 192 | 5.54 | 1.41 | 0–7            |
| Witnessing Violence      | 5         | 193 | 4.28 | 0.86 | 0–5            |
| Traumatic Loss           | 3         | 192 | 2.10 | 0.42 | 0–3            |
| Displacement Deprivation | 10        | 192 | 5.47 | 2.64 | 0–10           |

*Note.* Reliability of the composite forms-of-war-experience construct was Cronbach's  $\alpha = .749$  ( $N = 191$ ).

Looking only at the table: Violence Exposure ( $M=5.54/7=79.1\%$ ) and Witnessing Violence ( $M=4.28/5=85.6\%$ ) sit near ceiling with narrow spread ( $SD=1.41$  and  $0.86$ , coefficients of variation  $\approx 0.25$  and  $0.20$ ). Traumatic Loss follows the same pattern ( $M=2.10/3=70\%$ ,  $CV\approx 0.20$ ). Displacement Deprivation is the outlier: its mean ( $5.47/10=54.7\%$ ) is proportionally lower than the other three, yet its  $SD$  ( $2.64$ ) gives it by far the highest coefficient of variation ( $\approx 0.48$ ) — roughly double the others. In other words, nearly every woman endorsed the same high level of violence and loss, but experiences of camp-based deprivation varied substantially across respondents.

This distinction matters statistically as much as substantively. Restricted variance in the violence, witnessing, and loss subscales limits how much variance they can explain in a regression model, regardless of their true relationship to PTSD severity — a ceiling effect consistent with Roberts et al. (2008) and Mahmood et al. (2019), who found cumulative-exposure measures lose predictive power once most of a sample clusters near the

maximum. Displacement Deprivation's comparatively wider spread gives it the statistical room to differentiate between women with better and worse outcomes, which is consistent with it emerging as the most consistent predictor in later regression models. This also aligns with Maslow's (1943) proposition that variation in unmet material and safety needs, more than variation in violence exposure itself, is what distinguishes psychological outcomes once a population has already been near-universally exposed to conflict.

### 4.3 Prevalence and Severity of PTSD

Over 80% endorsed all 20 PCL-5 items at a clinically significant level (rated  $\geq 2$ ), with three items endorsed by all respondents: intrusive unwanted memories, distress when reminded of trauma and feeling distant/cut off from others. The mean score of the items measuring hyperarousal and reactivity were the highest of all the items (trouble sleeping,  $M = 3.51$ ; hypervigilance,  $M = 3.45$ ; concentration difficulty,  $M = 3.45$ ).

**Table 3: PTSD Symptom Cluster Scores, Overall Severity, and Prevalence of Probable PTSD ( $N = 193$ )**

| Measure                               | M / n | SD / % | Possible Range |
|---------------------------------------|-------|--------|----------------|
| Intrusion (Cluster B)                 | 16.31 | 2.76   | 0–20           |
| Avoidance (Cluster C)                 | 6.25  | 1.66   | 0–8            |
| Negative Cognition/Mood (Cluster D)   | 22.06 | 3.50   | 0–28           |
| Hyperarousal (Cluster E)              | 20.49 | 2.88   | 0–24           |
| Overall PTSD severity (PCL-5 total)   | 65.19 | 8.20   | 0–80           |
| PCL-5 total $\geq 31$ (probable PTSD) | 192   | 99.5%  | —              |
| All four DSM-5 cluster criteria met   | 180   | 93.3%  | —              |

*Note.* Symptom endorsed if rated  $\geq 2$  (moderately) on the 0–4 PCL-5 scale. The two prevalence criteria are alternative operationalisations and are not additive.

The total score criterion resulted in 99.5% scoring above threshold for probable PTSD and the more stringent criterion of meeting all four DSM-5 clusters resulted in 93.3% scoring above threshold; all of the difference was

due to the Cluster C (avoidance) criterion, the only criterion on which respondents failed to meet threshold. The data was very highly skewed at the high end with 87.0 per cent of the respondents being in the top band of severity

(56–80) and only three respondents had a score below 44. This prevalence is near the high end of the range of estimates across countries for conflict affected populations (usually between 15% and 50%) and higher than the higher estimates from Tigray (Tinsae et al. 2024; Gebreyesus et al. 2024). This is likely because of the very high exposure burden outlined above; the very high likelihood of a survivor selection bias in the sampling frame from the centre's association with GBV and psychosocial referral services; and the average length of displacement of more than five years placing respondents in a state of long-term deprivation after the initial experience of violence.

This was confirmed by qualitative reports. Case workers and survivors reported having nightmares, being hypervigilant towards the soldiers or sounds, and having a lot of energy loss and loss of functioning outside of the PCL-5's item content. Somatic presentation was also high, participants reported experience of headaches, chronic pain and gynaecological complications as a result of their experiences in war, 95.9% of the participants rated their physical health as poor or very poor. This pattern aligns with the cognitive elements of Ehlers and Clark's cognitive model of the impact of PTSD that proposes that hypervigilance is an accurate, not distorted, appraisal of continued threat when the objective displacement

environment has not been resolved, and directly with the recommendation of primary and reproductive health and psychosocial screening in non-specialist mental health programming.

#### 4.4 Relationship Between War Experiences and PTSD Symptom Clusters

The four war-experience subscales were significantly and positively intercorrelated ( $r = .24$  to  $.80$ ,  $p < .01$ ), confirming cumulative, overlapping exposure. Multiple regression analyses, entering all four subscales simultaneously as predictors of each PTSD outcome, produced statistically significant models for Intrusion,  $F(4, 186) = 12.35$ ,  $p < .001$ ,  $R^2 = .21$ ; Avoidance,  $F(4, 186) = 7.17$ ,  $p < .001$ ,  $R^2 = .13$ ; Hyperarousal,  $F(4, 185) = 5.70$ ,  $p < .001$ ,  $R^2 = .11$ ; and Overall Severity,  $F(4, 184) = 7.21$ ,  $p < .001$ ,  $R^2 = .14$ . The model for Negative Cognition/Mood was not significant,  $F(4, 185) = 0.82$ ,  $p = .512$ ,  $R^2 = .02$ . Based on this, the null hypothesis, that there were no relationship between the types of war experiences with the symptom clusters of PTSD (Intrusion, Avoidance, Hyperarousal) and the null hypothesis that there was no predictive relationship with overall PTSD severity, were both rejected.

**Table 4: Summary of Significant Predictors Across the Five Multiple Regression Models**

| Model (DV)          | R <sup>2</sup> | F (df1, df2)   | p     | Significant predictor(s) (β, p)                                       |
|---------------------|----------------|----------------|-------|-----------------------------------------------------------------------|
| Intrusion           | .21            | 12.35 (4, 186) | <.001 | Displacement Deprivation (−.46, <.001)                                |
| Avoidance           | .13            | 7.17 (4, 186)  | <.001 | Violence Exposure (.36, .005); Displacement Deprivation (−.59, <.001) |
| Neg. Cognition/Mood | .02            | 0.82 (4, 185)  | .512  | None significant                                                      |
| Hyperarousal        | .11            | 5.70 (4, 185)  | <.001 | None reached $p < .05$ individually                                   |
| Overall Severity    | .14            | 7.21 (4, 184)  | <.001 | Displacement Deprivation (−.32, .023)                                 |

*Note.* Displacement Deprivation findings for Intrusion, Avoidance, and Overall Severity were confirmed using heteroscedasticity-consistent (HC3) robust standard errors.

However, when considering all of the models, the only consistent negative predictor was Displacement Deprivation, with higher scores on the items related to deprivation associated with lower symptom severity, controlling for other exposures. Avoidance was a significant positive predictor of Violence Exposure, particularly. This pattern is somewhat similar to that found

in the literature reviewed. The negative association between Displacement Deprivation and symptoms contrasts with the positive dose-response relationship previously reported by Roberts et al. (2008), Mahmood et al. (2019) and Dybdahl and Pasagic (2000).

There are three explanations within the framework of the data available from this study, which are based on the study's own data. Second, both the WEI and PCL-5 showed a clear ceiling effect; most respondents agreed with the majority of items on both scales, with the smallest number of respondents reporting fewer events than others, and whose lower reported exposure might not reflect a lower true exposure (e.g., they may not have wanted to answer the questions when asked by enumerators). This range restriction constrains regression analysis to a small percentage of respondents indicating comparatively fewer events, potentially skewing the sign of the regression coefficients. Second, the models were predicting residual variance in a relatively small, compressed upper bound of the range of PTSD symptoms, which is known to result in unstable coefficients.

Thirdly, the large proportion of women in this sample who reported some psychosocial contact suggests that those who reported the highest levels of contact might also have received the most intensive case-worker contact, which could have had a stabilising effect by the time of data collection, as suggested by the focus on agency in Feminist Theory and as evidenced by the protective effect of structured contact in Dybdahl and Pasagic (2000) and Tol et al. (2013). Qualitative accounts did confirm that there was indeed a causal relationship between the war experiences and the psychological distress at the level of women's own explanations as a result of the soldiers' perceived and real risks, the armed attacks and the loud sounds – these were explicitly and repeatedly reported as still being present as causes, and they reported on how adaptation, time and social supports had shaped their current response to the war trauma, indicating that this statistical distance was more likely to be measurement or sampling artefacts than an absence of a real relationship between deprivation and distress.

## 4.5 Coping Strategies Used by Women to Manage PTSD Symptoms

Formal psychological and counselling care has been received by only 2.6% of the respondents and no more than 60.1% had access to social or family support in the camp, highlighting a significant mismatch between women's coping needs and the resources available to address them. Using directed content analysis, case worker interviews revealed four coping themes. Individual and behavioural coping strategies involved breathing/relaxation techniques, walking, physical activity, and routine for sleep and feeding, which women used for managing acute distress and intrusive thoughts. Ethiopian Orthodox Christians (95.3% of respondents) spiritual and religious coping focuses on prayer and church attendance as means of finding meaning, hope and expressing emotions.

Social/community-based coping referred to by case workers as "emotional relief" involved women's coffee ceremonies, peer conversation and mutual support, but also meant that some women were reported to be withdrawing and suppressing emotions when they were feeling more intensely distressed. Formal/institutional support was provided through referral to health centres, Women and Girls Safe Spaces, vocational and recreational activities aimed at reestablishing a sense of purpose.

Importantly, having no prior formal counselling was significantly related to the severity of PTSD (4.88 points higher on the PCL-5,  $F(1, 191) = 17.54$ ,  $p < .001$ ,  $d = 0.62$ ), but not being able to access social support. This finding, along with the themes found in the qualitative results, aligns with Jolof et al., 2022 who documented collective coping within women who were displaced in multiple regions of Tigray which encompassed both the material and safety domain (Formal humanitarian and health-centre support), and the belonging/esteem domain (Social, spiritual and community-based coping), as well as with Embaye's findings (2024) that noted that the immediate focus of the Tigrayan survivors in the study was on Orthodox Christianity. These results suggest that women in the centre were not easily assisted by others but actively mobilised their personal, spiritual and social resources, notwithstanding limited access to and availability of these resources and to formal MHPSS services in general. The non-equivalence of co-residence with children and extended family to supportive relationship, and respondents' reporting worse symptom intensity when living with others, also indicates that the quality and sense of support from others, not just the presence of others, is what is protective, which has direct implications for developing and targeting interventions for social support within humanitarian efforts.

## 5. Conclusions and Recommendations

### 5.1 Conclusions

The study found that the women found at the centre of IDP had a very high cumulative traumatic war experiences and multi-domain traumatic experiences. These ranged from direct and witnessed violence, sexual and gender-based violence, traumatic loss, physical injury, and deprivation due to displacement. The results showed that the situation of women was not limited to isolated incidents of violence but they had been repeatedly exposed to violence and life challenges in displacement. The PTSD prevalence was very high (99.5% of the respondents scored more than the PCL-5 cut-off) and the burden accordingly, at the highest end of the reported prevalence among conflict-affected populations.

The study also found that certain types of war exposure correlated differently with each of the clusters of symptoms that comprise PTSD. Significant relationships were found for intrusion, avoidance, hyperarousal, and overall PTSD symptomology, with no significant relationships on the regression model for negative cognition/mood. Displacement Deprivation was the only correlate that was present in all the significant models, albeit with a negative relationship to the symptoms of PTSD after controlling for other types of war experience. Avoidance was positively related to Violence Exposure. This surprising finding should be taken with a grain of salt due to the high and compressed scores of trauma exposure and PTSD symptoms. The results, however, show the connection between various exposures to war and PTSD is not linear, and cannot be explained by a simple additive model.

The study also found that the coping of the women was multidimensional, in other words it included individual, spiritual, social and institutional resources. Peace and quiet, exercise, practices, prayer, going to church, friends, coffee ceremonies, mutual support, health and humanitarian services were used to cope with distress by women. But only 2.6% had had formal psychological or counselling assistance previously and 60.1% had no social or family support in camp. Importantly, females with social and family support were significantly less likely to have high severity of PTSD. The overall results confirm the integrated framework of the theory: women's psychological consequences were influenced by unmet material and safety needs experienced during the long-term displacement, and by their use of the coping resources they had at their disposal, which reflected their resilience and agency in the face of violence rather than passivity as victims.

## 5.2 Recommendations and Suggestion for Future Studies

Based on these findings, the following recommendations were proposed:

1. Ensure consistent screening for PTSD and psychosocial issues is integrated into primary and reproductive health services at the IDP centre to enable women experiencing distress to be identified and referred for appropriate support.
2. Strengthen social and community-based support through peer-support groups and women's informal support networks, including family, coffee ceremonies, and church-based groups, particularly for women who lack informal social or family support.
3. Implement mental health and psychosocial support (MHPSS) interventions that address current stressors at the camp level, including safety concerns, social isolation, interpersonal

conflict, leadership challenges, and inconsistent access to services.

4. Increase the availability of trauma-informed care and referral services by training local female case workers and other first responders in trauma-informed approaches, psychological first aid, and appropriate referral of women requiring specialised mental health care.
5. Conduct longitudinal and multi-site studies to examine the evolution of PTSD over time, improve the generalisability of findings, and assess the effectiveness of psychosocial interventions that incorporate social, community, and spiritual coping resources.

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