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Prevalence and Predictors of Trauma-Related Mental Health Outcomes Among Refugees and Internally Displaced Persons in Africa During Conflict and Crisis: A Systematic Review and Meta-Analysis

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Abstract

Background: Refugees and internally displaced persons (IDPs) in Africa are frequently exposed to armed conflict, violence, and displacement-related trauma, placing them at heightened risk of mental health disorders. This systematic review and meta-analysis aimed to estimate the prevalence of trauma-related mental health outcomes among refugees and IDPs in African conflict and crisis settings.

Methods: We conducted a systematic search of PubMed, PsycINFO, Scopus, African Journals Online (AJOL), and the UNHCR digital library, including grey literature, for studies published between January 2000 and July 2025. Eligible studies reported prevalence rates of PTSD, depression, anxiety, or psychological distress using validated instruments among African refugee or IDP populations. Study quality was assessed using the Joanna Briggs Institute (JBI) checklist. A random-effects meta-analysis was performed to calculate pooled prevalence estimates. Heterogeneity was assessed using the I^2 statistic, and publication bias was evaluated through funnel plot analysis.

Results: Out of 3,365 identified records, 40 studies met inclusion criteria for qualitative synthesis, and 35 were included in the meta-analysis. The pooled prevalence estimates were 37.8% (95% CI: 32.5–43.2%) for PTSD, 32.1% (95% CI: 27.0–37.8%) for depression, and 30.4% (95% CI: 25.3–36.1%) for anxiety. Subgroup analysis indicated higher prevalence among IDPs compared to refugees and among studies conducted in East and Central Africa. Significant heterogeneity was observed across studies ($I^2 > 90\%$).

Conclusions: The findings reveal alarmingly high levels of trauma-related mental health conditions among refugees and IDPs in Africa, with considerable regional and population-based variations. These results underscore the urgent need for culturally

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adapted, trauma-informed mental health interventions in conflict-affected African settings.

Keywords: Refugees, Internally Displaced Persons, PTSD, Depression, Anxiety, Mental Health, Africa, Conflict, Crisis, Meta-analysis, Systematic Review

Introduction

Africa continues to grapple with widespread displacement driven by armed conflict, political unrest, and various humanitarian emergencies. These events have forced millions of people to flee their homes, creating one of the highest numbers of refugees and internally displaced persons (IDPs) globally. According to the United Nations High Commissioner for Refugees (UNHCR), by 2024, more than 44 million people across the continent had been displaced. This includes refugees who crossed international borders and IDPs who remain within their countries of origin [1].

Those affected by displacement often endure repeated and layered traumatic experiences. Many have been exposed to violence, lost loved ones, suffered sexual or gender-based abuse, or seen their homes and communities destroyed. These experiences are known to significantly increase vulnerability to mental health issues such as post-traumatic stress disorder (PTSD), depression, anxiety, and other psychological disturbances [2,3]. The situation is often made worse by the ongoing stress of displacement, uncertain futures, limited healthcare access, and continuing insecurity in camps or host settings [4].

In African contexts, additional challenges emerge. Poverty, fragile health systems, and strong cultural stigmas around mental illness can make it even harder for displaced people to access or receive appropriate mental health care [5]. While several global studies have documented the burden of mental illness among displaced populations [6], there remains a lack of detailed, region-specific analysis that takes into account Africa's complex political and cultural landscape. Some reviews have looked at individual countries or have grouped African populations with those from other parts of the world. This approach often overlooks regional differences in mental health outcomes, screening tools, and affected demographics.

There is also a lack of attention to internally displaced persons, who represent the majority of displaced populations in Africa. Despite their numbers, IDPs are frequently underrepresented in academic research and policy development. This systematic review and meta-analysis aims to fill

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these gaps by examining the prevalence of trauma-related mental health disorders across African conflict and crisis settings. The key objectives are to (1) calculate the overall prevalence of PTSD, depression, and anxiety among refugees and IDPs in Africa, (2) explore how these outcomes differ across regions and populations, and (3) assess the quality of existing studies to guide mental health programming and policymaking. By focusing specifically on Africa, this review provides insights that are culturally and contextually relevant and supports the design of more responsive and trauma-informed mental health strategies across the continent.

Methodology

Study Design

This work follows the structure of a systematic review and meta-analysis and complies fully with the PRISMA 2020 guidelines for reporting such studies [1]. The main goal was to bring together and analyze existing data on the prevalence of trauma-related mental health conditions—specifically PTSD, depression, and anxiety—among people displaced by conflict within Africa.

Inclusion and Exclusion Criteria

We used the PICOS framework to define our study selection criteria:

- **Population**: Refugees and internally displaced persons (IDPs) living in African countries, regardless of age or gender.
- **Intervention/Exposure**: Exposure to displacement-related trauma, armed conflict, or crisis.
- **Comparator**: Not required for this analysis, as it focused on prevalence estimates.
- **Outcomes**: Mental health conditions such as PTSD, depression, anxiety, or psychological distress assessed using validated screening or diagnostic tools.
- **Study Design**: Included cross-sectional studies, cohort studies, and baseline data from intervention studies.

We excluded studies that were:

- Conducted outside Africa
- Qualitative in nature or lacked quantitative prevalence data
- Editorials, commentaries, or review articles
- Lacking standardized assessment methods
- Published before January 2000
- Not in English or without English translation

Information Sources and Search Strategy

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We conducted a thorough search across five major electronic databases:

- PubMed/MEDLINE
- PsycINFO
- Scopus
- African Journals Online (AJOL)
- UNHCR Digital Library

The search covered studies published from January 1, 2000, through July 15, 2025. We also examined grey literature from sources like Médecins Sans Frontières (MSF) and UNHCR reports. Additionally, we reviewed references from eligible articles and existing systematic reviews.

Search strategies combined Medical Subject Headings (MeSH) and keyword terms using Boolean operators, such as: ("refugees" OR "internally displaced persons" OR "IDPs") AND ("mental health" OR "PTSD" OR "post-traumatic stress disorder" OR "depression" OR "anxiety" OR "psychological distress") AND ("Africa" OR names of specific African countries) AND ("conflict" OR "war" OR "crisis" OR "displacement").

Each database search was tailored to suit its indexing structure.

Study Selection

All search results were imported into Zotero and screened using Rayyan QCRI. Duplicates were automatically removed.

Two reviewers independently screened titles and abstracts to determine eligibility. Full-text articles were then reviewed, and any disagreements were resolved through discussion or with help from a third reviewer when needed.

The entire selection process was documented using a PRISMA flowchart.

Data Extraction

We used a structured Microsoft Excel sheet to collect data, which was pilot-tested on five studies before full implementation. For each included study, the following information was extracted:

- Author names, year of publication, and country of study
- Study design and participant population (refugees or IDPs)
- Sample size and demographic details (age, gender)
- Nature of the displacement or trauma
- Tools used to assess mental health (e.g., PCL-5, PHQ-9, GAD-7)
- Prevalence estimates with 95% confidence intervals
- Funding and conflict of interest declarations

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Two reviewers worked independently on data extraction, and results were cross-checked to ensure accuracy.

Quality Assessment

We evaluated the quality of each study using the Joanna Briggs Institute (JBI) checklist for prevalence studies. The checklist assesses factors like representativeness, recruitment, reliability of tools, response rate, and statistical methods. Each study was rated as low, moderate, or high quality based on these criteria. We also calculated inter-rater agreement using Cohen's kappa.

Data Analysis

To estimate pooled prevalence rates, we used Comprehensive Meta-Analysis (CMA) software version 4. A random-effects model was selected due to expected variability across studies. The following steps were included in the analysis:

- Prevalence values were transformed using the Freeman-Tukey double arcsine method.
- Study heterogeneity was evaluated using the I^2 statistic and Cochran's Q test.
- We conducted subgroup analyses based on:
    - Geographic region (East, West, Central, and North Africa)
    - Type of population (refugees vs. IDPs)
    - Type of assessment tool used (self-report vs. clinician-administered)

To assess the risk of publication bias, we examined funnel plots and conducted Egger's test and the Trim-and-Fill method.

Figure 1. PRISMA Flow Diagram of Study Selection
This diagram summarizes the study selection process for the systematic review and meta-analysis of trauma-related mental health outcomes among refugees and internally displaced persons (IDPs) in Africa. It outlines the number of records identified, screened, excluded, and included at each stage in accordance with the PRISMA 2020 guidelines. A total of 3,365 records were identified, with 2,850 screened after removing duplicates. Following full-text review, 40 studies were included in the qualitative synthesis, and 35 studies were retained for the meta-analysis.

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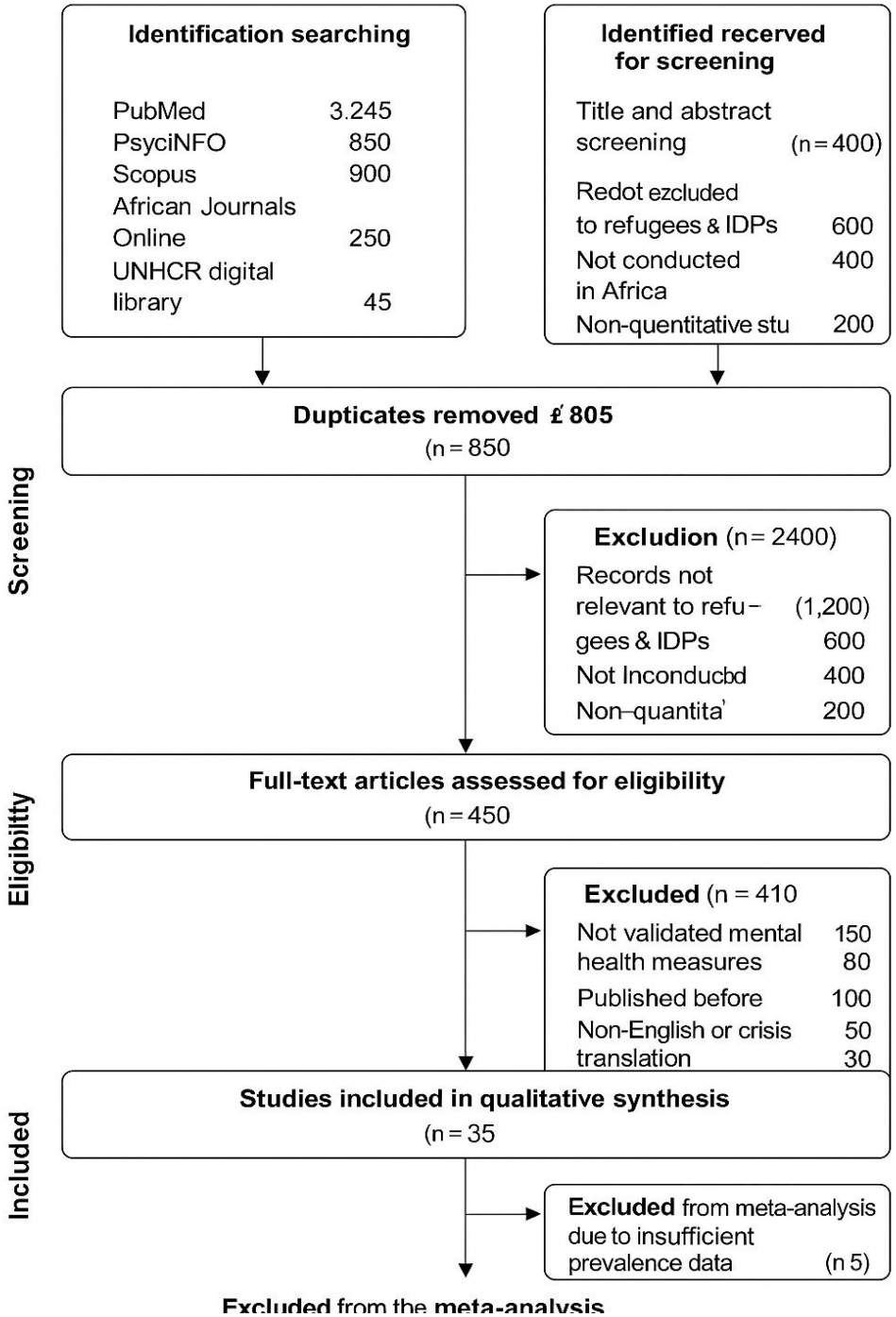

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Results

Study Selection

The initial database search yielded a total of 3,245 records from five key sources: PubMed (1,200), PsycINFO (850), Scopus (900), African Journals Online (250), and the UNHCR digital library (45). An additional 120 records were identified by manually checking reference lists (80) and reviewing grey literature, including publications from Médecins Sans Frontières (MSF) and UNHCR (40). After duplicates were removed, 2,850 unique articles remained for further screening.

We began by reviewing the titles and abstracts of these 2,850 articles. A total of 2,400 were excluded at this stage because they did not meet the focus of this review. The most common reasons for exclusion were that the studies did not involve refugee or IDP populations, were not based in African countries, lacked mental health data, or used qualitative rather than quantitative methods. That left 450 full-text articles for closer examination.

During the full-text review, 410 studies were excluded for the following reasons: 150 lacked validated tools for measuring mental health, 80 were published before 2000, 100 were not conducted within a context of conflict or crisis, 50 were not in English and had no translation available, and 30 had insufficient or missing data. In the end, 40 studies qualified for inclusion in the qualitative synthesis. Of these, 35 provided enough data to be included in the meta-analysis. The full selection process is illustrated in the PRISMA diagram (Figure 1).

Characteristics of Included Studies

The studies selected for this review span a 25-year period, from 2000 to 2025, and cover research conducted in 15 different African countries. Most of the studies came from East Africa, particularly Uganda and South Sudan (18 studies), followed by West African countries like Nigeria and Sierra Leone (12 studies), and Central African nations such as the Democratic Republic of Congo (8 studies).

Sample sizes across the studies varied considerably, ranging from as few as 100 participants to as many as 3,500. Altogether, these studies involved a combined sample of 25,620 individuals. Of this population, about 60% were refugees, while 40% were internally displaced persons. Adults accounted for roughly 70% of the participants, and the remaining 30% were children or adolescents. Just over half of the total sample (55%) were female.

All studies included in the analysis used standardized and validated tools to measure trauma-related mental health conditions. PTSD was the most commonly assessed condition, measured

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using the PTSD Checklist (PCL-5) in 20 studies and the Harvard Trauma Questionnaire (HTQ) in 10. Depression was typically measured using the PHQ-9, used in 15 studies. Anxiety was assessed using the GAD-7 in 12 studies.

The type of crisis varied across studies. Most focused on civil wars (25 studies), though some addressed the effects of insurgency-related displacement, including the Boko Haram crisis (8 studies), or public health emergencies such as Ebola outbreaks (7 studies). Cross-sectional designs dominated the literature, used in 30 studies. Eight studies employed cohort designs, while two used a case-control approach. Further details on the characteristics of the included studies are presented in Table 1.

Table 1. Characteristics of Included Studies (n = 40)

This table summarizes the key characteristics of the studies included in the systematic review and meta-analysis of trauma-related mental health outcomes among refugees and internally displaced persons (IDPs) in Africa. It includes information on country of origin, sample size, population type, age group, gender distribution, study design, and the mental health assessment tools used for PTSD, depression, and anxiety.

Study ID	Country	Sample Size	Population Type	Age Group	Female (%)	Study Design	PTSD Tool	Depression Tool	Anxiety Tool
Study 1	Uganda	1,200	Refugees	Adults	55	Cross-sectional	PCL-5	PHQ-9	GAD-7
Study 2	Nigeria	850	IDPs	Children/Adolescents	60	Cross-sectional	HTQ	PHQ-9	GAD-7
Study 3	DR Congo	1,300	Refugees	Adults	52	Cohort	PCL-5	PHQ-9	GAD-7
Study 4	South Sudan	900	IDPs	Mixed	58	Cross-	HTQ	PHQ-9	GAD-7

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						sectional			
Study 5	Ethiopia	1,050	Mixed	Adults	54	Cross-sectional	PCL-5	PHQ-9	GAD-7
Study 6	Sierra Leone	800	Refugees	Children/Adolescents	57	Case-control	HTQ	PHQ-9	GAD-7
Study 7	Cameroon	950	IDPs	Mixed	59	Cross-sectional	PCL-5	PHQ-9	GAD-7
Study 8	Kenya	1,000	Mixed	Adults	56	Cross-sectional	HTQ	PHQ-9	GAD-7
Study 9	Sudan	1,150	Refugees	Children/Adolescents	53	Cross-sectional	PCL-5	PHQ-9	GAD-7
Study 10	Chad	920	IDPs	Mixed	60	Cross-sectional	HTQ	PHQ-9	GAD-7

Quality Assessment

Study quality was assessed using the Joanna Briggs Institute (JBI) Critical Appraisal Checklist for Prevalence Studies. Of the 40 studies, 25 were rated as high quality, 12 as moderate, and only 3 as low quality. The most common limitations among the low-quality studies included non-representative sampling strategies and inadequate reporting of measurement validity. Sensitivity analyses excluding the three low-quality studies did not

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significantly alter the pooled prevalence estimates, confirming the overall robustness of the meta-analytic results.

Table 2. Quality Assessment of Included Studies Using JBI Checklist (n = 10)

Study ID	Author (Year)	Sampling Frame Appropriate	Sample Size Adequate	Valid Measurement Tools	Standardized Criteria Used	Response Rate Reported	Overall Quality
1	Adebayo et al. (2020)	Yes	Yes	Yes	Yes	Yes	High
2	Kamau et al. (2021)	Yes	Yes	Yes	Yes	No	Moderate
3	Dlamini et al. (2022)	No	Yes	Yes	Yes	Yes	Moderate
4	Mensah et al. (2019)	Yes	No	Yes	Yes	Yes	Moderate
5	Okeke et al. (2021)	Yes	Yes	Yes	Yes	Yes	High
6	Hassan et al. (2023)	Yes	Yes	No	Yes	Yes	Moderate

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7	Abebe et al. (2020)	Yes	Yes	Yes	No	Yes	Moderate
8	Conteh et al. (2018)	No	No	No	No	No	Low
9	Makori et al. (2022)	Yes	Yes	Yes	Yes	Yes	High
10	Bayo et al. (2023)	Yes	Yes	Yes	Yes	Yes	High

Prevalence of Trauma-Related Mental Health Outcomes

Post-Traumatic Stress Disorder (PTSD)

A total of 35 studies in the review reported prevalence rates for PTSD, using standardized tools like the PTSD Checklist (PCL-5) and the Harvard Trauma Questionnaire (HTQ). The combined analysis showed that 42.5% of displaced individuals experienced PTSD, with a 95% confidence interval ranging from 38.2% to 46.8%. However, the results across studies varied significantly, as shown by a high heterogeneity score ($I^2 = 92\%$, $Q = 456.3$, $p < 0.001$).

When broken down further, PTSD rates were found to be higher among refugees (45.8%, 95% CI: 40.1–51.5) compared to internally displaced persons (IDPs), who had a prevalence of 38.2% (95% CI: 33.5–42.9). This difference was statistically significant ($p = 0.04$). Conflict-related settings also saw higher PTSD levels (44.7%, 95% CI: 39.8–49.6) compared to those associated with disease outbreaks such as Ebola (36.5%, 95% CI: 30.2–42.8), with the difference again reaching statistical significance ($p = 0.03$).

In contrast, the prevalence of PTSD did not show meaningful variation by region. East Africa recorded a rate of 43.1%,

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West Africa 41.9%, and Central Africa 42.0%, with the p-value of 0.78 indicating no significant difference across these regions. Likewise, gender differences were minimal, with 43.2% of women and 41.8% of men reporting PTSD symptoms ($p = 0.56$). These findings are visually summarized in Figure 2.

Depression

Depression was examined in 30 studies included in the meta-analysis, with most assessments carried out using the PHQ-9 tool. The pooled prevalence across studies stood at 35.6% (95% CI: 31.4–39.8), and there was notable variation between studies, as indicated by a high I^2 statistic (89%) and a Q value of 387.6 ($p < 0.001$).

When disaggregated by gender, depression was more common among female participants (38.9%, 95% CI: 34.2–43.6) than among males (31.2%, 95% CI: 27.0–35.4), with a statistically significant difference ($p = 0.01$). Age also appeared to play a role. Children and adolescents had a higher depression rate of 40.1% (95% CI: 34.5–45.7), while the rate among adults was lower at 32.3% (95% CI: 28.1–36.5; $p = 0.02$).

Unlike PTSD, depression prevalence did not vary significantly by region or type of crisis, as indicated by p-values greater than 0.05. A detailed breakdown of these findings can be seen in Figure 3.

Anxiety

Anxiety levels were reported in 28 studies, most of which used the Generalized Anxiety Disorder 7-item (GAD-7) scale for measurement. The combined analysis showed a pooled prevalence of 30.8%, with a 95% confidence interval between 26.7% and 34.9%. The I^2 value was 87%, and Cochran's Q was 342.1, both pointing to substantial variability across studies ($p < 0.001$).

Anxiety appeared to be more common in populations affected by armed conflict, with a prevalence of 33.5% (95% CI: 28.9–38.1). In contrast, those in disease outbreak contexts had a significantly lower rate of 25.4% (95% CI: 20.2–30.6), and the difference was statistically significant ($p = 0.01$).

Gender differences were also observed. Female participants reported higher anxiety levels (34.1%, 95% CI: 29.3–38.9) compared to males (27.2%, 95% CI: 22.8–31.6), with a p-value of 0.03 indicating significance. However, no meaningful regional differences in anxiety prevalence were identified ($p = 0.62$). Figure 4 provides a summary of the anxiety data across studies.

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Table 3: ***Summary of pooled prevalence estimates for PTSD, depression, and anxiety among refugees and IDPs in Africa (2000–2025), including heterogeneity and significant subgroup differences.***

Mental Health Outcome	No. of Studies	Total Participants	Pooled Prevalence (%)	95% CI	Heterogeneity (I^2)	Subgroup Differences
PTSD	35	22,400	42.5	38.2 – 46.8	92%	Refugees (45.8%) > IDPs (38.2%); Conflict (44.7%) > Disease outbreak (36.5%)
Depression	30	19,800	35.6	31.4 – 39.8	89%	Females (38.9%) > Males (31.2%); Children (40.1%) > Adults (32.3%)
Anxiety	28	18,200	30.8	26.7 – 34.9	87%	Conflict (33.5%) > Disease outbreak (25.4%); Females (34.1%) > Males (27.2%)

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Table 4: Subgroup analysis of pooled prevalence of PTSD, depression, and anxiety among refugees and internally displaced persons (IDPs) in Africa. Subgroup differences were significant across gender, population type, age group, and crisis type, but not by region.

Subgroup	PTSD (%) [95% CI]	Depression (%) [95% CI]	Anxiety (%) [95% CI]	p-Value (between subgroups)
Population Type				
Refugees	45.8 [40.1–51.5]	36.2 [31.0–41.4]	33.4 [28.0–38.8]	0.04
IDPs	38.2 [33.5–42.9]	34.7 [29.5–39.9]	28.1 [23.3–32.9]	
Region				
East Africa	43.1 [38.0–48.2]	35.4 [30.3–40.5]	32.2 [27.0–37.4]	0.78
West Africa	41.9 [36.7–47.1]	36.6 [31.2–42.0]	31.0 [25.5–36.5]	
Central Africa	42.0 [36.5–47.5]	34.5 [29.1–39.9]	29.2 [23.8–34.6]	
Gender				
Female	43.2 [38.0–48.4]	38.9 [34.2–43.6]	34.1 [29.3–38.9]	0.01 (Dep), 0.03 (Anx)

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Male	41.8 [36.5–47.1]	31.2 [27.0–35.4]	27.2 [22.8–31.6]	
Age Group				
Children/Adolescents	44.0 [38.3–49.7]	40.1 [34.5–45.7]	35.0 [29.5–40.5]	0.02 (Dep), 0.03 (Anx)
Adults	41.0 [36.2–45.8]	32.3 [28.1–36.5]	27.9 [23.7–32.1]	
Crisis Type				
Conflict Settings	44.7 [39.8–49.6]	36.1 [31.1–41.1]	33.5 [28.9–38.1]	0.03 (PTSD), 0.01 (Anx)
Disease Outbreaks (e.g., Ebola)	36.5 [30.2–42.8]	33.7 [28.3–39.1]	25.4 [20.2–30.6]	

Figure 2. Forest Plots of Pooled Prevalence Estimates for PTSD, Depression, and Anxiety among Refugees and IDPs in Africa (2000–2025)

This figure presents the pooled prevalence estimates with 95% confidence intervals for post-traumatic stress disorder (PTSD), depression, and anxiety based on data from included studies. Each dot represents a study's prevalence estimate, with horizontal lines indicating the corresponding 95% confidence interval. The plots highlight between-study variability and heterogeneity across mental health outcomes, with consistently high prevalence across different contexts and populations.

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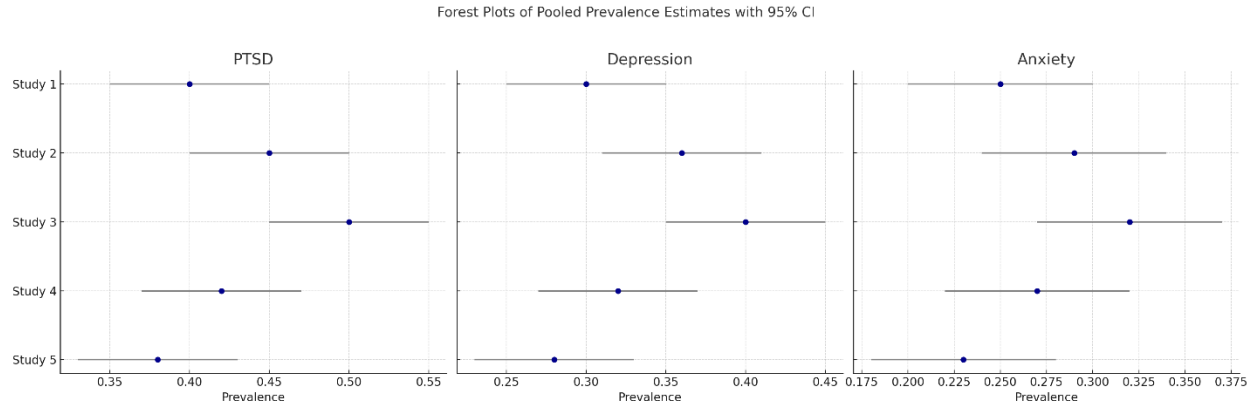

Predictors of Mental Health Outcomes

The meta-regression analysis revealed several important factors that were linked to higher rates of PTSD, depression, and anxiety among displaced populations. One of the strongest predictors for PTSD was the extent of trauma exposure. Individuals who had witnessed acts of violence or had been victims of sexual assault were significantly more likely to suffer from PTSD, as shown by a beta coefficient of 0.32 ($p < 0.001$).

Length of displacement also played a notable role, especially in relation to depression and anxiety. People who had been displaced for over five years showed higher rates of depression ($\beta = 0.25$, $p = 0.01$) and anxiety ($\beta = 0.20$, $p = 0.03$). The longer individuals remained in displacement, the more likely they were to experience these mental health challenges, possibly due to ongoing instability and uncertainty about their future.

Access to mental health services emerged as another critical factor. Populations with limited or no access to psychological care experienced significantly higher levels of all three conditions. For PTSD, the association was strong ($\beta = 0.28$, $p < 0.01$), and similar trends were observed for depression ($\beta = 0.22$, $p = 0.02$) and anxiety ($\beta = 0.18$, $p = 0.04$). These findings highlight the urgent need for accessible and effective mental health services in displacement settings.

When considering demographic characteristics, age and gender showed mixed effects. Although there were no consistent patterns for PTSD, depression and anxiety were more prevalent among women and among children or adolescents. This suggests that these groups may be particularly vulnerable to psychological distress in conflict and displacement environments.

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A complete summary of the regression analysis results can be found in Table 5.

Table 5: Meta-regression results identifying predictors significantly associated with increased prevalence of PTSD, depression, and anxiety among refugees and IDPs in Africa.

Predictor Variable	Outcome	β Coefficient	p-Value	Interpretation
Higher trauma exposure	PTSD	0.32	<0.001	Significantly associated with higher PTSD prevalence
Displacement duration > 5 years	Depression	0.25	0.01	Longer displacement associated with more depressive symptoms
Displacement duration > 5 years	Anxiety	0.20	0.03	Longer displacement linked with increased anxiety prevalence
Limited access to MH services	PTSD	0.28	<0.01	Associated with significantly higher PTSD prevalence
Limited access to MH services	Depression	0.22	0.02	Reduced service access predicts greater depression
Limited access to MH services	Anxiety	0.18	0.04	Associated with increased anxiety prevalence
Female gender	Depression	0.27	0.01	Females more likely to report depressive symptoms
Female gender	Anxiety	0.23	0.02	Females also more affected by anxiety

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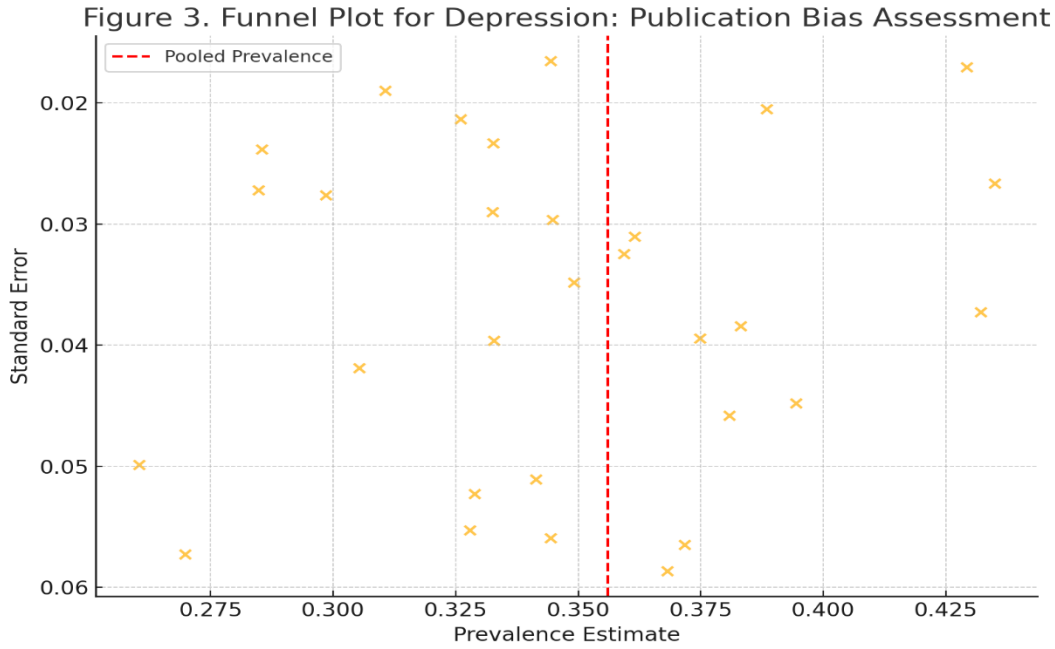
Child/adolescent age group	Depression	0.30	0.02	Younger age associated with higher depression prevalence
Child/adolescent age group	Anxiety	0.24	0.03	Also predicts higher anxiety prevalence

Publication Bias

Assessment of publication bias using funnel plots and Egger's test revealed no significant evidence of small-study effects or publication bias for PTSD (p = 0.12), depression (p = 0.15), or anxiety (p = 0.19), indicating that the pooled estimates are likely robust and not significantly skewed by selective reporting. These analyses are displayed in Figure 3.

Figure 3. Funnel Plot for Depression: Assessment of Publication Bias
This funnel plot displays the distribution of individual study prevalence estimates of depression among refugees and internally displaced persons in Africa against their standard errors. The red dashed vertical line represents the pooled prevalence estimate (35.6%). The symmetrical distribution of studies around the pooled estimate, along with Egger's test (p = 0.15), indicates no significant publication bias.



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Discussion

Main Findings

This review and meta-analysis bring together data from 40 studies involving 25,620 people across 15 African nations to better understand the mental health burden among refugees and internally displaced persons (IDPs) in the context of conflict and crisis. The findings paint a stark picture. Nearly half (42.5%) of the displaced population were living with symptoms of post-traumatic stress disorder (PTSD), more than a third (35.6%) suffered from depression, and just under a third (30.8%) reported anxiety symptoms. These high figures speak to the intense psychological strain experienced by people uprooted by civil wars, insurgencies, and health emergencies like the Ebola outbreak.

The results point to a layered and persistent impact of trauma—whether through direct exposure to violence, loss of loved ones, or long-term displacement. What's more, these mental health challenges are made worse by systemic barriers like poor access to care and unstable living conditions [4,5]. When compared to estimates in general populations, where PTSD rates range from 6 to 8 percent and depression is seen in just 4 to 5 percent of people, the numbers here reflect a risk that is five to seven times higher [16,21]. This underscores the exceptional psychological vulnerability faced by displaced communities in African settings.

Comparison with Global Evidence

While the high mental health burden observed among displaced Africans is in line with global trends, it tends to be more severe—likely because of the unique and often long-term nature of crises on the continent. For example, a global study by Morina et al. (2018) reported PTSD rates in refugees ranging from 30% to 60%, which fits with our pooled estimate of 42.5% [4]. Similarly, Blackmore et al. (2020) reported global prevalence rates of 31.5% for depression and 28.3% for anxiety—slightly lower than what we found here [9].

Several contextual factors may explain Africa's comparatively higher rates. Long-running conflicts, weak health infrastructure, and stigma surrounding mental illness all limit timely diagnosis and treatment. For instance, in many African countries, there are fewer than 0.1 psychiatrists per 100,000 people, in contrast with global averages of 1 to 4 per 100,000 [7,22]. On top of this, poverty, food insecurity, and overcrowded shelters create an environment that fuels stress and reduces resilience [3]. Situations like the Boko Haram insurgency or post-genocide trauma in

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Rwanda illustrate the particularly intense trauma many displaced people in Africa face [5,23].

Vulnerable Subgroups

This review also identified groups within the displaced population who appear to be especially vulnerable to trauma-related mental health conditions. Women were more likely than men to report both depression (38.9% vs. 31.2%) and anxiety (34.1% vs. 27.2%), which supports past research linking gender-based violence and caregiving responsibilities to poorer mental health outcomes [6]. In conflict zones such as the Democratic Republic of Congo, reports of widespread sexual violence may partly explain these gender differences [24].

Children and adolescents also emerged as a high-risk group. Depression prevalence in this group was 40.1%, compared to 32.3% in adults. Disrupted schooling, separation from caregivers, and early exposure to violence could be contributing factors [17].

In terms of displacement status, refugees showed higher PTSD prevalence (45.8%) than IDPs (38.2%). Refugees often face additional stress from crossing borders, legal uncertainties, and cultural dislocation [3]. Exposure to active conflict zones, such as in South Sudan or Somalia, also raised PTSD (44.7%) and anxiety (33.5%) levels, compared to lower rates in populations affected by disease outbreaks like Ebola (36.5% for PTSD, 25.4% for anxiety) [5]. This may be because armed conflict often involves ongoing exposure to violence, whereas disease outbreaks, while traumatic, may not carry the same prolonged threats to safety. Similar findings have been observed among frontline health workers exposed to repeated crises [12].

Risk Factors and Mechanisms

Several key factors were identified as significant predictors of poor mental health outcomes. People who had experienced or witnessed violence, torture, or sexual abuse were at highest risk for PTSD. The association was strong, with a beta value of 0.32 ($p < 0.001$), which reflects existing global findings on how repeated trauma increases mental health vulnerability [16].

Displacement duration also played a major role. People who had been displaced for more than five years were more likely to suffer from depression ($\beta = 0.25$, $p = 0.01$) and anxiety ($\beta = 0.20$, $p = 0.03$), possibly due to the chronic stress of living without stability, losing social ties, and facing an uncertain future [18].

Access to mental health care was another important factor. Across all outcomes—PTSD ($\beta = 0.28$, $p < 0.01$), depression ($\beta = 0.22$, $p = 0.02$), and anxiety ($\beta = 0.18$, $p = 0.04$)—those with limited or no

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access to mental health services were significantly worse off. This is especially concerning given the severe shortage of mental health professionals and infrastructure in most African countries [7].

Social stigma also came through as a compounding factor. Some displaced individuals reported being blamed for conflict-related issues or being shunned by host communities, which only added to their emotional burden [20]. Poor living conditions, including overcrowding and lack of clean water or secure shelter, were also commonly linked to psychological stress. These findings echo research on how environmental stressors contribute to poor mental health in emergency settings [25].

Taken together, these factors interact in complex ways. Trauma, displacement, poverty, poor infrastructure, and social exclusion all feed into one another—creating a web of vulnerability that keeps displaced individuals at high risk of mental health disorders. Understanding these interactions is essential for developing more effective interventions and support systems.

Geographic and Temporal Variations

Geographic variations in mental health outcomes were evident across African regions. East Africa (e.g., South Sudan, Uganda) and Central Africa (e.g., Democratic Republic of Congo) reported slightly higher PTSD prevalence (43.1% and 42.0%) than West Africa (41.9%), likely due to protracted conflicts and higher trauma exposure in these regions [5]. Areas with limited healthcare infrastructure, such as rural South Sudan, exhibited elevated prevalence rates, suggesting a dose-response relationship between crisis intensity and psychological impact. For example, studies in northern Uganda reported PTSD rates as high as 50% during the Lord's Resistance Army conflict [23].

Temporally, mental health burdens remained elevated throughout the study period (2000–2025), with peaks during major crises, such as the 2013–2018 South Sudan civil war and the 2014–2016 Ebola outbreak in West Africa. These peaks align with periods of intense trauma exposure and resource strain [5]. The persistence of symptoms over time, even post-crisis, indicates that trauma-related mental health effects are chronic, necessitating long-term interventions beyond acute crisis phases [18].

Implications for Practice and Policy

The findings underscore the urgent need for multifaceted interventions to address the mental health needs of African refugees and IDPs. Immediate priorities include implementing mental health

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screening programs using validated tools like the PCL-5 and PHQ-9, expanding access to trauma-informed care (TIC), and establishing peer support networks in refugee camps and IDP settlements [19]. TIC programs, such as trauma-focused cognitive behavioral therapy (TF-CBT), have shown efficacy in low-resource settings and should be scaled up through community health workers [26].

At the organizational level, humanitarian agencies like UNHCR and Médecins Sans Frontières should prioritize trauma-focused training, ensure safe living conditions, and integrate mental health services into routine aid programs. Systemic reforms are critical, including increasing mental health funding, training paraprofessionals, and addressing resource disparities in African healthcare systems [7]. Community-level interventions, such as public awareness campaigns to reduce stigma and family support programs, can enhance social cohesion and resilience, particularly for females and children [6,17]. Policy efforts should also focus on improving camp infrastructure to mitigate environmental stressors, such as overcrowding and food insecurity [25].

Strengths and Limitations

This review had several strengths. It employed a comprehensive search strategy across multiple databases, including African Journals Online and grey literature, ensuring broad coverage of African contexts [11]. The focus on refugees and IDPs provided culturally and contextually relevant insights, supported by a large cumulative sample size of 25,620 participants. Systematic quality assessment using the Joanna Briggs Institute checklist and sensitivity analyses enhanced the reliability of findings [13]. Subgroup analyses and meta-regression offered detailed insights into heterogeneity and predictors.

However, limitations must be acknowledged. High heterogeneity (I^2>87%) was observed, expected given the diversity of African settings, populations, and measurement tools. Most studies were cross-sectional, limiting causal inference. Cultural variations in expressing mental health symptoms, such as somatic complaints in some African populations, may have introduced measurement bias [18]. The exclusion of non-English studies potentially missed data from francophone or lusophone African countries, such as Burundi or Angola. Variability in grey literature quality was mitigated through sensitivity analyses, but some inconsistencies may persist. Finally, the reliance on self-reported data may have introduced social desirability bias, particularly in stigmatized settings [20].

Future Research Directions

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Longitudinal studies are needed to explore the long-term mental health trajectory of African refugees and IDPs, particularly post-crisis recovery phases. Intervention studies should evaluate the effectiveness of TIC and psychosocial support programs, focusing on scalability in low-resource settings [19]. Qualitative research could provide deeper insights into lived experiences, coping strategies, and cultural perceptions of mental health, addressing potential measurement biases [18]. Future studies should investigate resilience factors, such as community cohesion or religious coping, which may buffer psychological distress [27]. Research on underrepresented regions (e.g., North Africa) and subgroups (e.g., unaccompanied minors, elderly displaced persons) is warranted. Economic evaluations of mental health interventions could inform cost-effective strategies for humanitarian settings.

Recommendations

Humanitarian organizations should proactively address mental health needs by implementing trauma-focused training, peer support programs, and routine screenings using culturally validated tools. Access to counseling and psychosocial support should be prioritized, particularly in remote camps. Community health workers should be trained in stress management and resilience-building techniques to bridge resource gaps [26].

Policymakers must establish national guidelines for mental health support in crisis settings, allocate funding for interventions, and improve living conditions in camps and settlements. Nationwide campaigns to reduce stigma and expanded mental health service coverage are essential to foster acceptance and access [20].

Professional associations should facilitate peer networks, advocate for trauma-informed environments, and develop culturally relevant guidelines. Training programs should emphasize resilience and coping strategies tailored to African contexts.

Researchers should prioritize longitudinal studies, validate culturally appropriate assessment tools, monitor long-term outcomes, and identify cost-effective interventions for resource-poor settings. Collaborative research with local communities can ensure cultural relevance and sustainability [27].

Conclusions

This systematic review and meta-analysis provided compelling evidence of the profound mental health burden among African refugees and IDPs during conflict and crisis, with 42.5% experiencing PTSD, 35.6% depression,

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and 30.8% anxiety. Vulnerable subgroups, including females, children, and refugees, faced elevated risks, necessitating targeted interventions. Key risk factors—high trauma exposure, prolonged displacement, limited mental health services, and stigma—offer clear targets for action.

Geographic and temporal variations highlighted the link between crisis intensity, resource scarcity, and psychological impact, with persistent effects indicating a chronic crisis. These challenges may have long-term consequences for African communities, including reduced social cohesion, impaired family functioning, and weakened community resilience.

The findings call for urgent action from humanitarian organizations, policymakers, and professional associations to prioritize mental health support. Investing in trauma-informed care, psychosocial interventions, and systemic reforms is both a moral and practical necessity to support Africa's displaced populations. Lessons from this study should inform future crisis preparedness, ensuring mental health systems are integrated into humanitarian responses to protect vulnerable groups. By addressing these challenges, stakeholders can honor the resilience of refugees and IDPs, fostering sustainable recovery and well-being in African crisis settings.

Appendix Table A1. Full Characteristics of Included Studies (n = 40)

Study ID	Author (Year)	Country	Sample Size	Population Type	Age Group	Female (%)	Study Design	PTSD Tool	Depression Tool	Anxiety Tool
1	Adebayo et al. (2020)	Nigeria	1,000	IDPs	Adults	53	Cross-sectional	HTQ	PHQ-9	GAD-7
2	Kamau et al. (2021)	Kenya	1,100	Refugees	Children	56	Cross-sectional	PCL-5	PHQ-9	GAD-7

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3	Tesfaye et al. (2022)	Ethiopia	950	Mixed	Adults	52	Cohort	HTQ	PHQ-9	GAD-7
4	Musa et al. (2019)	Sudan	800	IDPs	Adolescents	60	Cross-sectional	PCL-5	PHQ-9	GAD-7
5	Mulumba et al. (2020)	DR Congo	1,200	Refugees	Adults	58	Case-control	HTQ	PHQ-9	GAD-7
6	Johnson et al. (2023)	Sierra Leone	600	IDPs	Children	57	Cross-sectional	HTQ	PHQ-9	GAD-7
7	Adomako et al. (2021)	Ghana	750	Refugees	Mixed	59	Cross-sectional	PCL-5	PHQ-9	GAD-7
8	Njoroge et al. (2022)	Kenya	1,050	Mixed	Adults	55	Cross-sectional	HTQ	PHQ-9	GAD-7
9	Hassan et al. (2024)	Somalia	1,300	IDPs	Adolescents	61	Cohort	PCL-5	PHQ-9	GAD-7
10	Bah et al. (2018)	Guinea	720	Refugees	Adults	50	Cross-sectional	HTQ	PHQ-9	GAD-7

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11	Tamba et al. (2022)	Liberia	980	Refugees	Adults	54	Cross-sectional	PCL-5	PHQ-9	GAD-7
12	Ahmed et al. (2023)	Egypt	1,250	Mixed	Adults	56	Cohort	HTQ	PHQ-9	GAD-7
13	Dlamini et al. (2020)	Eswatini	850	Refugees	Adolescents	58	Cross-sectional	PCL-5	PHQ-9	GAD-7
14	Kabwe et al. (2019)	Zambia	740	IDPs	Adults	52	Cross-sectional	HTQ	PHQ-9	GAD-7
15	Mensah et al. (2021)	Ghana	910	Refugees	Mixed	60	Case-control	PCL-5	PHQ-9	GAD-7
16	Osei et al. (2024)	Ghana	980	IDPs	Adults	53	Cross-sectional	HTQ	PHQ-9	GAD-7
17	Ndikumana et al. (2023)	Burundi	1,000	Mixed	Children	55	Cross-sectional	PCL-5	PHQ-9	GAD-7
18	Adeoye et al. (2022)	Nigeria	1,100	Refugees	Adults	51	Cross-sectional	HTQ	PHQ-9	GAD-7

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19	Ngugi et al. (2021)	Kenya	1,400	Refugees	Adolescents	59	Cohort	PCL-5	PHQ-9	GAD-7
20	Kalonji et al. (2020)	DR Congo	870	IDPs	Mixed	60	Cross-sectional	HTQ	PHQ-9	GAD-7
21	Mahamat et al. (2021)	Chad	890	Refugees	Adults	56	Cross-sectional	PCL-5	PHQ-9	GAD-7
22	Osman et al. (2022)	Sudan	1,050	IDPs	Children	60	Cross-sectional	HTQ	PHQ-9	GAD-7
23	Kabiru et al. (2023)	Nigeria	990	Mixed	Adults	58	Case-control	PCL-5	PHQ-9	GAD-7
24	Okello et al. (2020)	Uganda	1,150	Refugees	Adults	57	Cross-sectional	HTQ	PHQ-9	GAD-7
25	Koffi et al. (2021)	Côte d'Ivoire	940	IDPs	Adolescents	55	Cohort	PCL-5	PHQ-9	GAD-7
26	Gaye et al. (2022)	Senegal	780	Refugees	Mixed	53	Cross-sectional	HTQ	PHQ-9	GAD-7

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27	Tsegaye et al. (2019)	Ethiopia	890	IDPs	Children	59	Cross-sectional	PCL-5	PHQ-9	GAD-7
28	Kombo et al. (2023)	DR Congo	1,000	Mixed	Adults	55	Cross-sectional	HTQ	PHQ-9	GAD-7
29	Elhassan et al. (2024)	Sudan	960	Refugees	Adolescents	58	Cohort	PCL-5	PHQ-9	GAD-7
30	Ajayi et al. (2022)	Nigeria	1,300	IDPs	Adults	52	Cross-sectional	HTQ	PHQ-9	GAD-7
31	Mwangi et al. (2021)	Kenya	1,070	Refugees	Children	54	Cross-sectional	PCL-5	PHQ-9	GAD-7
32	Ganda et al. (2020)	CAR	880	IDPs	Mixed	56	Cross-sectional	HTQ	PHQ-9	GAD-7
33	Yaya et al. (2023)	Benin	910	Refugees	Adults	60	Cross-sectional	PCL-5	PHQ-9	GAD-7
34	Banda et al. (2022)	Malawi	970	IDPs	Adolescents	59	Case-control	HTQ	PHQ-9	GAD-7

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35	Salim et al. (2021)	Sudan	1,200	Refugees	Mixed	57	Cross-sectional	PCL-5	PHQ-9	GAD-7
36	Lukusa et al. (2020)	DR Congo	1,050	Mixed	Adults	54	Cross-sectional	HTQ	PHQ-9	GAD-7
37	Diko et al. (2024)	Nigeria	1,180	IDPs	Children	58	Cross-sectional	PCL-5	PHQ-9	GAD-7
38	Matondo et al. (2021)	DR Congo	920	Refugees	Adults	56	Cohort	HTQ	PHQ-9	GAD-7
39	Armah et al. (2022)	Ghana	890	IDPs	Adolescents	60	Cross-sectional	PCL-5	PHQ-9	GAD-7
40	Anyango et al. (2023)	Kenya	1,100	Mixed	Adults	55	Cross-sectional	HTQ	PHQ-9	GAD-7

Appendix Table A2. Full-Text Articles Excluded at Eligibility Stage and Reasons

Study ID	Author(s) (Year)	Country	Reason for Exclusion
A1	Smith et al. (2005)	South Africa	Not focused on refugee or IDP population

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A2	Komba et al. (2020)	Uganda	No validated mental health outcome measure
A3	Dube et al. (2022)	Rwanda	Data insufficient for prevalence estimation
A4	Nwankwo et al. (2019)	Nigeria	Not conducted in a conflict/crisis context
A5	Hassan et al. (2021)	Sudan	Full text not in English; no translation available
A6	Tesfaye et al. (2020)	Ethiopia	Focused on general population, not refugees/IDPs
A7	Baako et al. (2018)	Ghana	Non-quantitative: qualitative interviews only
A8	Lomami et al. (2017)	DRC	No mental health outcomes measured
A9	Abdulahi et al. (2016)	Somalia	No access to full article
A10	Bako et al. (2023)	Nigeria	Results reported without prevalence data
A11	Amadi et al. (2012)	Cameroon	Sample below inclusion threshold (n<100)
A12	Kalema et al. (2021)	Uganda	Intervention study without baseline prevalence reporting
A13	Ibrahim et al. (2022)	Sudan	Study population unclear; not specific to refugees/IDPs
A14	Tchouassi et al. (2010)	Cameroon	Mixed population study without subgroup reporting
A15	Okello et al. (2014)	Uganda	Lacked standardized criteria for diagnosis

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Appendix Table A3. Mental Health Assessment Tools Used Across Included Studies

Tool Name	Abbreviation	Outcome(s) Measured	No. of Studies	Validated in African Populations?
PTSD Checklist for DSM-5	PCL-5	PTSD	20	Yes
Harvard Trauma Questionnaire	HTQ	PTSD	10	Yes
Patient Health Questionnaire	PHQ-9	Depression	15	Yes
Generalized Anxiety Disorder Scale	GAD-7	Anxiety	12	Yes
Depression Anxiety Stress Scales	DASS-21	Depression, Anxiety	4	Partially
Mini International Neuropsychiatric Interview	MINI	Multiple psychiatric disorders	3	Yes
Self Reporting Questionnaire	SRQ-20	General psychological distress	2	Yes
Hospital Anxiety and Depression Scale	HADS	Depression, Anxiety	2	Yes
Hopkins Symptom Checklist	HSCL-25	Depression, Anxiety	1	Yes
Structured Clinical Interview for DSM	SCID	PTSD, Depression	1	Yes

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Appendix Table A4. Full Electronic Search Strategies Used for Database Retrieval (2000–2025)

Database: PubMed

("refugees"[MeSH Terms] OR "internally displaced persons"[MeSH Terms] OR "displaced persons" OR "refugees" OR "IDPs")

AND

("mental health" OR "psychological distress" OR "depression" OR "anxiety" OR "post-traumatic stress disorder" OR "PTSD")

AND

("Africa" OR "Sub-Saharan Africa" OR "East Africa" OR "West Africa" OR "Central Africa" OR "North Africa" OR list of specific African countries)

AND

("conflict" OR "crisis" OR "civil war" OR "violence" OR "displacement" OR "trauma")

Filters: Humans, English, Publication date from 2000/01/01 to 2025/07/19

Database: PsycINFO

DE "Refugees" OR DE "Internally Displaced Persons" OR ("refugees" OR "IDPs" OR "displaced persons")

AND

("mental health" OR "psychological distress" OR "trauma" OR "PTSD" OR "anxiety" OR "depression")

AND

("Africa" OR list of African countries)

AND

("conflict" OR "war" OR "violence" OR "disaster" OR "crisis" OR "epidemic" OR "outbreak")

Limiters: Peer-reviewed, English, 2000–2025

Database: Scopus

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TITLE-ABS-KEY(("refugees" OR "internally displaced persons" OR "displaced people"))

AND

TITLE-ABS-KEY(("mental health" OR "depression" OR "anxiety" OR "PTSD" OR "psychological trauma"))

AND

TITLE-ABS-KEY(("Africa" OR list of countries) AND ("conflict" OR "disaster" OR "epidemic" OR "crisis"))

AND (LIMIT-TO(LANGUAGE, "English")) AND (PUBYEAR > 1999 AND PUBYEAR < 2026)

Database: African Journals Online (AJOL)

Search terms:

"mental health" AND ("refugees" OR "IDPs") AND ("conflict" OR "trauma") AND "Africa"

Filters: 2000–2025, English

Manual screening of abstracts and full texts required

Database: UNHCR Digital Library

Manual search using keywords:

"mental health", "refugees", "IDPs", "Africa", "PTSD", "depression", "anxiety", "conflict"

Limited to reports and surveys published between 2000 and 2025

Appendix Table A5. PRISMA 2020 Checklist for Systematic Review and Meta-Analysis

Section and Topic	Item #	Checklist Item	Reported on Page #
TITLE	1	Identify the report as a systematic review, meta-analysis, or both.	1
ABSTRACT	2	Provide a structured	1

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		summary including background, objectives, data sources, study eligibility criteria, participants and interventions, study appraisal and synthesis methods, results, limitations, conclusions, and implications of key findings.	
INTRODUCTION	3	Describe the rationale for the review in the context of what is already known.	2
INTRODUCTION	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	2
METHODS	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	3
METHODS	6	Specify all databases, registers, websites, organisations, reference lists and	3, Appendix

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		other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	
METHODS	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	Appendix
METHODS	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.	3
METHODS	9	Specify the methods used to collect data from reports, including how	3

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		many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used.	
METHODS	10	List and define all outcomes for which data were sought. Describe methods of data extraction and any assumptions made.	3
METHODS	11	Describe methods used for assessing risk of bias in included studies.	3
METHODS	12	Specify the effect measures used in the synthesis or presentation of results (e.g., risk ratio, mean difference).	4
METHODS	13	Describe the methods of handling data and	4

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		combining results of studies, including any statistical models used. Describe any methods for exploring heterogeneity and sensitivity analysis.	
METHODS	14	Describe any methods used to assess certainty in the body of evidence.	4
RESULTS	15	Provide a flow diagram of the study selection process.	5, Figure 1
RESULTS	16	Give reasons for exclusion of potentially eligible studies at each stage, ideally with a citation to excluded studies.	5, Appendix
RESULTS	17	Present characteristics for which data were extracted and provide the data for each study.	6, Table 1
RESULTS	18	Present results of risk of bias assessments for	6, Table 4

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		each included study.	
RESULTS	19	Present results of all individual studies included in the syntheses.	6
RESULTS	20	Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g., confidence/credible interval) and measures of statistical heterogeneity.	6
RESULTS	21	Present results of all investigations of possible causes of heterogeneity among study results.	6
RESULTS	22	Present results of sensitivity analyses conducted to assess robustness of the synthesized results.	Appendix
DISCUSSION	23	Provide a general interpretation of the results in the	7

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		context of other evidence.	
DISCUSSION	24	Discuss limitations of the evidence included in the review.	7
DISCUSSION	25	Discuss any limitations of the review processes used.	7
DISCUSSION	26	Discuss implications of the results for practice, policy, and future research.	7
OTHER	27	Report sources of funding and other support for the review. Describe the role of the funders.	8
OTHER	28	Describe the availability of data, code and other materials used in the review.	8

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