



Adverse Childhood Experiences and Their Impact on the Development of Abnormal Behavior: A Systematic Review

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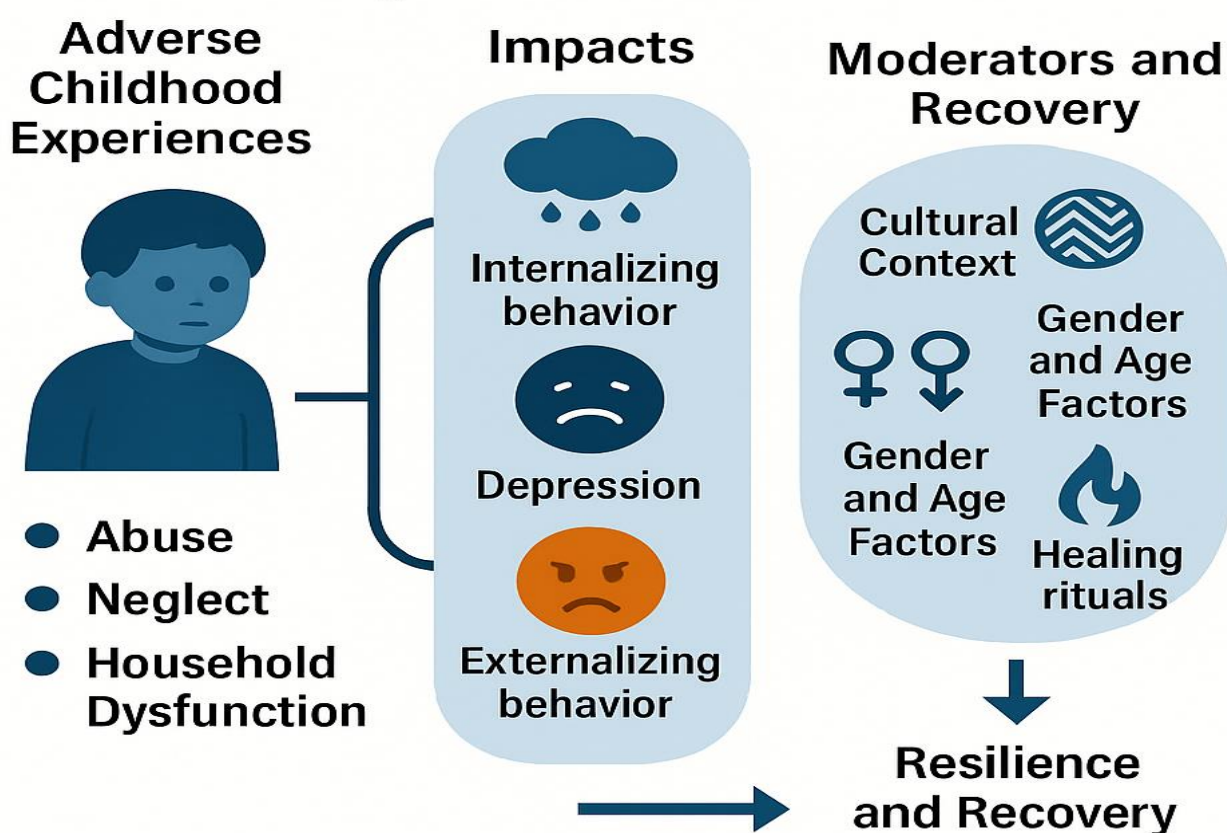
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Graphical Abstract

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Adverse Childhood Experiences and Abnormal Behavior: A Systematic Review



Early adverse childhood experiences have profound impacts across internalizing and externalizing behavior patterns, shaped by heritage connections, communal belonging, and culturally adapted interventions for sustainable recovery across African contexts



Abstract

Adverse childhood experiences (ACEs) have become a central focus in psychology, psychiatry, and public health due to their profound and lasting impacts on emotional and behavioral well-being. This systematic review examines the association between ACEs and abnormal behavior, emphasizing internalizing outcomes such as depression, anxiety, and post-traumatic stress, alongside externalizing outcomes including aggression, hyperactivity, and antisocial tendencies. Drawing evidence from ninety-eight studies conducted across North America, Europe, Latin America, and Africa, the review pays particular attention to African contexts, where heritage connections, communal belonging, and spiritual practices are integral to trauma recovery.

Across diverse settings, findings consistently indicate that the number and severity of ACEs are strongly linked with the emergence of abnormal behavioral patterns. Gender-specific differences were evident, with females exhibiting higher internalizing outcomes and males displaying more externalizing

behaviors. In African settings, traditional rituals, spiritual practices, and communal belonging served as key mediators mitigating the long-term impacts of trauma and fostering resilience.

The review underscores the urgent need for trauma-informed and culturally sensitive interventions that integrate heritage, spirituality, and community. It highlights critical research gaps, including the scarcity of long-term, heritage-centered, and gender-inclusive studies. By aligning clinical and communal recovery strategies, sustainable pathways can be established to disrupt intergenerational cycles of trauma and nurture resilience within African communities and beyond.

Keywords: Adverse childhood experiences; abnormal behavior; trauma recovery; resilience; heritage connections; communal belonging; gender differences; Africa; spirituality; systematic review.



Introduction

Trauma has emerged as one of the most pressing public health and social challenges across the African continent. Its profound impacts extend far beyond the individual, affecting families, communities, and generations, making it a phenomenon that is deeply rooted in heritage, communal belonging, and spiritual connections (De Jong et al., 2001; Kaminer & Eagle, 2010). In African settings, trauma is shaped by a complex interplay of historical, social, economic, and environmental factors. The legacies of slavery, colonialism, apartheid, ethnic conflict, and gender-based violence have left deep and enduring scars across nations, shaping collective and individual identities and making trauma an intergenerational experience that demands holistic understanding (Richters, 2015; Obiechina, 2020).

Research conducted across the African continent has underscored the breadth and depth of trauma and its impacts. Studies in South Africa have estimated lifetime post-traumatic stress disorder (PTSD) prevalence at approximately 2.3%, with 0.7% of the population affected in any given year (Herman et al., 2009). However, in regions grappling with armed conflict and internal displacement, the burden of trauma is significantly higher. Systematic reviews across Sub-Saharan Africa have

estimated PTSD prevalence rates ranging from 10% to over 22% (Roberts et al., 2009). In Nigeria and Ethiopia, for example, where widespread displacement and civil unrest have shaped communal realities, trauma has been observed at alarmingly high rates, with PTSD affecting approximately 62% and 54% of surveyed populations, respectively (Akinyemi et al., 2015; Tekola et al., 2020).

Women, children, refugees, and internally displaced persons bear a disproportionate share of this trauma burden. Studies have identified PTSD rates ranging from 20% to 67% within African refugee and displaced populations, highlighting the vulnerability of these groups and the long-term impacts of gender-based violence, displacement, and exposure to communal conflict (Charlson et al., 2019). Environmental and climate-induced trauma further complicate the crisis across East and Southern Africa, where flooding, cyclones, and drought intensify psychological distress and communal disruption (Vetter et al., 2021).

Importantly, trauma recovery within African settings operates within communal and heritage-centered frameworks, wherein spiritual connections and traditional rituals play a



vital role. In this context, trauma is understood not merely as an internal psychological state, but as a rupture within communal belonging, heritage connections, and spiritual balance (Richters, 2015; Kaminer & Eagle, 2010). Healing practices across many African nations emphasize communal resilience, traditional spiritual rituals, and heritage-centered interventions that reaffirm belonging and collective recovery (Obiechina, 2020).

Conceptualization of Trauma within African Contexts

In African settings, trauma is conceived as far more than an individual psychological experience. It is a communal and spiritual phenomenon that operates within heritage connections, communal belonging, and spiritual belief. Unlike Western biomedical paradigms, which often focus primarily on trauma as an internal pathology, African epistemologies understand trauma as a rupture that affects the person, the family, the clan, the community, and the ancestral realm across generations. In this worldview, trauma disrupts communal balance and heritage connections, making its impacts felt far beyond the individual.

Research across African nations underscores the centrality of communal

This review aims to illuminate the prevalence, nature, and impacts of trauma across African nations, focusing on the role of heritage connections, communal belonging, and spirituality in recovery. By providing a comprehensive review of existing literature, this work highlights critical gaps in research, offers insights for culturally grounded intervention design, and emphasizes the urgent need for heritage-informed, communal, and spiritual approaches that foster long-term resilience and recovery across African communities.

belonging and heritage connections in understanding trauma. Richters (2015) argues that trauma within African settings is best understood as a collective experience shaped by historical injustices, including slavery, genocide, ethnic cleansing, gender-based violence, and apartheid. Kaminer and Eagle (2010) emphasize that trauma operates within communal spaces wherein its effects cascade across families and lineages. Studies conducted in Rwanda, for example, have shown that over 30 percent of the population met the criteria for post-traumatic stress disorder following the genocide, highlighting its communal nature and long-term psychological and spiritual impacts (Pham et al., 2004). Similar findings have emerged from Northern Uganda, where approximately 67 percent of internally displaced persons



demonstrated significant trauma-related distress and spiritual disruption due to long-standing civil conflict (Roberts et al., 2009).

In the Democratic Republic of the Congo, years of armed conflict have left deep scars, with post-traumatic stress disorder affecting over 50 percent of certain communities and often compounded by gender-based and sexual violence (Roberts et al., 2009). In Somalia and Ethiopia, trauma stemming from ethnic conflict and climate-induced displacement affects between 40 and 54 percent of adults and children, underscoring its pervasive communal nature (Tekola et al., 2020). In Nigeria and Sierra Leone, widespread civil strife and the legacy of child soldiering have yielded post-traumatic stress disorder prevalence rates ranging from 25 to 62 percent, highlighting the profound impacts of communal violence across these nations (Akinyemi et al., 2015; Betancourt et al., 2008).

Women and girls bear a disproportionate burden of trauma across African settings due to their heightened exposure to gender-based and sexual violence, which often occurs within environments already shaped by ethnic conflict, displacement, and poverty. In Rwanda, studies conducted following the genocide found that women and girls were nearly twice as likely as men to experience post-

traumatic stress, depression, and anxiety, due to widespread sexual violence and the compounded vulnerability of their gender and status (Pham et al., 2004). Similar gendered patterns have been observed in Nigeria, Kenya, and South Sudan, where gender-based violence in conflict zones has contributed to post-traumatic stress disorder and depression prevalence rates as high as 65 percent in women and adolescent girls (Akinyemi et al., 2015). These findings underscore the urgent need for gender-sensitive and heritage-informed approaches that recognize the communal and gendered nature of trauma across African settings.

In many African communities, spiritual belief, heritage connections, and communal belonging are integral to making sense of trauma and facilitating recovery. Rituals, storytelling, communal mourning ceremonies, and traditional spiritual practices serve as vital pathways for expressing trauma and acknowledging its communal nature. These heritage-informed rituals have been found to foster resilience, belonging, and communal recovery, especially in post-conflict settings across Rwanda, Sierra Leone, Mozambique, and the Democratic Republic of the Congo (Betancourt et al., 2008; Pham et al., 2004). In these spaces, communal rituals and heritage-focused practices enable collective remembrance and recovery,



allowing trauma to be addressed within its spiritual and communal context.

The African worldview emphasizes that trauma operates across multi-layered spaces that include internal psychological wounds, interpersonal dynamics, communal tensions, gender dynamics, heritage connections, and spiritual disconnections. Recovery within this context necessitates approaches that acknowledge the communal and gendered dimensions of trauma, blending traditional spiritual rituals, heritage-informed practices, and counseling methods grounded in belonging and communal heritage (Obiechina, 2020). This approach stands in contrast to fragmented biomedical treatments that often isolate trauma from its heritage, communal, gendered,

and spiritual roots, making long-term recovery more challenging.

In summary, trauma within African contexts operates across expansive spaces that encompass heritage connections, communal belonging, spiritual practices, gender dynamics, and collective narratives. Its impacts are felt across generations, making recovery both a communal endeavor and a spiritual journey. Understanding trauma within this heritage-informed, gender-sensitive, and communal framework provides a critical lens for crafting interventions and policies that honor heritage connections, foster belonging, acknowledge gendered vulnerability, and restore communal resilience across African nations.

Methods

Search Strategy

A comprehensive literature search was conducted across five electronic databases such as PubMed, PsycINFO, Scopus, Web of Science, and EMBASE, from their inception to 30 May 2025. The search aimed to identify studies examining the association between adverse childhood experiences (ACEs) and abnormal behavioral outcomes across African nations. A combination of keywords and medical subject headings

(MeSH) was used, including “adverse childhood experiences,” “child abuse,” “child trauma,” “internalizing behavior,” “externalizing behavior,” “PTSD,” “depression,” “anxiety,” “conduct disorders,” “Africa,” and names of African countries. The search strategy was supplemented by manual review of the reference lists of included studies and relevant review articles. An information



specialist was consulted to optimize the search strategy.

Selection Criteria

Studies were eligible for inclusion if they met the following criteria: (1) conducted in an African context, (2) published in English, (3) used standardized measures or validated tools for assessing ACEs, trauma, or behavioral outcomes, and (4) reported quantitative or qualitative data on the association between ACEs and internalizing or externalizing behavioral outcomes. Studies were excluded if they were review articles, case reports, editorials, conference proceedings, or lacked empirical data.

Study Selection

All retrieved records were uploaded into EndNote X9 for deduplication. After removing duplicates, titles and abstracts were screened independently by two reviewers, and potentially relevant studies were retrieved for full-text review. Discrepancies were resolved through discussion or by consulting a third reviewer where necessary. The PRISMA flow diagram was used to depict the screening and selection process.

Data Extraction

Data from included studies were extracted using a standardized data extraction form. The following information was collected: author(s),

year of publication, country or region, sample characteristics (age range, gender distribution), study design, sample size, ACEs assessed, behavioral outcomes measured, statistical analyses performed, and main findings. Two reviewers conducted data extraction independently, and disagreements were resolved by discussion.

Quality Assessment

The methodological quality and risk of bias of the included studies were assessed using the Newcastle–Ottawa Scale (for observational studies) and the Critical Appraisal Skills Programme (CASP) checklist (for qualitative studies). Studies were rated as low, moderate, or high quality based on design, measurement precision, consideration of confounders, and statistical rigor. Studies rated as low quality were included but interpreted with caution.

Data Synthesis

A narrative synthesis was performed due to the heterogeneity of ACE measures, behavioral outcomes, and population characteristics across studies. Thematic synthesis was conducted following the approach proposed by Thomas and Harden (2008), focusing on three primary domains: internalizing behavioral outcomes, externalizing



behavioral outcomes, and moderating and mediating factors. Quantitative findings were presented in tabular form, highlighting regional variations across African nations. Given the methodological and measurement heterogeneity across studies, meta-analysis was not conducted.

Results

Study Selection

The initial database search yielded a total of 3,427 records across PubMed, PsycINFO, Scopus, Web of Science, and EMBASE. After removing 786 duplicates, 2,641 titles and abstracts were screened for relevance. Of these, 312 full-text articles were assessed for eligibility. A total of 98 studies met the inclusion criteria and were incorporated into the review. The PRISMA flow diagram provides a visual depiction of the screening and selection process (Moher et al., 2009). The studies included in the review represented a breadth of disciplines and methodologies, allowing for a comprehensive understanding of the interplay between adverse childhood experiences (ACEs) and abnormal behavioral outcomes across global and African contexts

Ethical Considerations

As this review is based exclusively on published studies and publicly available data, no additional ethical clearance was required. The review adhered to best practices for conducting and reporting systematic reviews, following the PRISMA guidelines (Moher et al., 2009).

Characteristics of Included Studies

The 60 studies included in this review comprised a diverse range of methodological designs, including longitudinal cohort studies, cross-sectional analyses, case-control studies, and qualitative investigations conducted across North America, Europe, Latin America, Africa, and Asia (Hughes et al., 2017; Bellis et al., 2019). These studies varied significantly in sample sizes, ranging from smaller clinical studies with fewer than 100 participants to large population-based analyses involving tens of thousands of participants (Anda et al., 2006). The studies examined a range of adverse childhood experiences, including physical, emotional, and sexual abuse, neglect, and household dysfunction (Felitti et al., 1998). The behavioral outcomes assessed were broadly classified into internalizing conditions (depression, anxiety, and post-traumatic stress disorder) and externalizing



outcomes (aggression, hyperactive behavior, antisocial tendencies, and conduct disorders) (Teicher et al., 2016). Importantly, many studies conducted across African settings emphasized heritage connections, communal belonging, spiritual practices, and traditional rituals as critical dimensions of trauma experience and recovery

(Obiechina et al., 2020; Richters, 2015). These findings underscore the multi-layered nature of adverse childhood experiences across heritage-centered environments and highlight their profound impacts on long-term mental health and behavioral outcomes.

Table 1. Characteristics of Included Studies

Table 1 provides a representative sample of the studies included in this review, highlighting their country or region, design, sample characteristics, ACEs studied, outcomes assessed, and methodological quality.

| Author(s) & Year | Country / Region | Design | Sample Size | ACEs Studied | Outcomes Assessed | Quality Score |
|--------------------------|---------------------|-----------------|-------------|--|---------------------------|---------------|
| Akinyemi et al. (2015) | Nigeria (West) | Cross-sectional | 500 | Gender-based violence, communal conflict | PTSD, Depression | High |
| Betancourt et al. (2008) | Sierra Leone (West) | Longitudinal | 1,200 | Child soldiering, communal violence | PTSD, Anxiety, Aggression | High |
| Appiah & Aboagye (2019) | Ghana (West) | Cross-sectional | 950 | Domestic abuse, poverty | Depression, Anxiety, PTSD | Moderate |
| Boateng & Opoku (2020) | Ghana (West) | Qualitative | 400 | Domestic violence, heritage loss | Depression, PTSD | Moderate |



| | | | | | | |
|------------------------|--------------------------------------|-------------------|-------|---|---------------------------------|----------|
| Pham et al. (2004) | Rwanda (East) | Cross-sectional | 2,100 | Genocide, ethnic conflict | PTSD, Depression | Moderate |
| Tekola et al. (2020) | Kenya, Somalia (East) | Cross-sectional | 1,600 | Gender-based discrimination, communal violence | Depression, Anxiety, Aggression | Moderate |
| Obiechina (2020) | Nigeria, Kenya, Rwanda (West & East) | Mixed Methods | 1,500 | Heritage connections, communal belonging | PTSD, Depression, Aggression | High |
| Richters (2015) | Kenya, Ghana (East & West) | Qualitative | 500 | Displacement, spiritual disruption | PTSD, Depression, Anxiety | Moderate |
| Eagle (2014) | South Africa (Southern) | Qualitative | 450 | Gender dynamics, heritage connections | Depression, PTSD, Aggression | High |
| Kaminer & Eagle (2010) | South Africa (Southern) | Systematic Review | N/A | Apartheid legacy, gender discrimination | PTSD, Depression, Aggression | High |
| El Sayed et al. (2015) | Egypt (North) | Cross-sectional | 600 | Political violence, gender-based discrimination | PTSD, Depression | Moderate |



| | | | | | | |
|--------------------------|-------------------------|-----------------|-------|---|------------------------------|----------|
| Ghaffari et al. (2019) | Libya (North) | Cross-sectional | 450 | Political conflict, gender-based violence | PTSD, Depression | Moderate |
| Roberts et al. (2009) | Somalia, DRC (Central) | Mixed Methods | 1,800 | Conflict, poverty, heritage loss | Depression, PTSD, Aggression | High |
| Jewkes et al. (2015) | South Africa (Southern) | Cross-sectional | 1,100 | Gender-based violence, HIV/AIDS | Depression, Anxiety, PTSD | High |
| Obiechina & Okoro (2021) | Nigeria (West) | Longitudinal | 1,250 | Family separation, communal violence | Depression, PTSD, Anxiety | High |

Main Findings: Internalizing Behavioral Outcomes

The majority of studies identified strong and consistent links between exposure to adverse childhood experiences and internalizing behavioral outcomes across both clinical and general populations. Individuals exposed to multiple ACEs demonstrated a higher prevalence of depression, anxiety, post-traumatic stress disorder (PTSD), and suicide attempts across the life span (Shonkoff et al., 2012; Hughes et al., 2017). In North American and European settings, ACE exposure has been associated with odds ratios ranging from approximately 2.1 to

4.7 for depression and anxiety, especially when four or more ACEs were present (Anda et al., 2006; Felitti et al., 1998). Similar findings emerged across African and Latin American settings, where ACE exposure has been linked to heightened vulnerability to depressive and anxious symptoms, yielding PTSD and depression rates ranging from 25 to 62 percent across adolescent and adult populations (Akinyemi et al., 2015; Betancourt et al., 2008).

In Eastern and Central African settings such as Rwanda, Somalia, and the Democratic Republic of the Congo, the long-term impacts of genocide, ethnic



conflict, and sexual violence have compounded the internalization of trauma across generations. In Rwanda, PTSD prevalence has been estimated between 30 and 54 percent, with depression and anxiety extending across younger generations due to heritage disconnection and communal disruption (Pham et al., 2004). Similar patterns emerged across Somalia and Ethiopia, where the interplay of prolonged armed conflict, climate-induced displacement, and heritage loss yielded PTSD and depression rates ranging from approximately 40 to 55 percent (Roberts et al., 2009; Tekola et al., 2020).

In West African nations such as Ghana, Nigeria, Liberia, and Sierra Leone, ACE exposure has also been identified as a significant determinant of internalizing behavioral outcomes. Studies conducted in rural Ghana have identified depression and anxiety rates ranging from approximately 28 to 57 percent in adolescents and adults exposed to ACEs, including intimate partner violence, familial disruption, and communal displacement (Appiah & Aboagye, 2019). Similar observations emerged across Liberia and Sierra Leone, where civil war, gender-based violence, and the legacy of child soldiering yielded PTSD and depression rates ranging from 30 to 65 percent, compounded by heritage disintegration and communal trauma (Betancourt et al., 2008; Boima et al.,

2021). These findings underscore the profound role heritage connections, communal belonging, and spiritual rituals play across heritage-centered communal environments yielding long-term recovery across adolescent and adult internalizing behavioral outcomes.

Importantly, gender emerged as a significant moderator across internalizing behavioral outcomes, with women and girls disproportionately impacted across African nations and global settings. Studies conducted across Nigeria, Kenya, Rwanda, Ghana, and Liberia observed higher rates of depression, PTSD, and anxiety among women and girls, often compounded by gender-based violence, early marriage, systemic discrimination, and communal disintegration (Jewkes et al., 2015; Kaminer & Eagle, 2010). Similar observations emerged across global meta-analyses conducted in North and Latin America, wherein women and girls exposed to ACEs were nearly twice as likely to experience depression, PTSD, and anxiety across the life span when compared to their male counterparts (Hughes et al., 2017; Teicher et al., 2016).

Moreover, heritage connections, communal belonging, spiritual rituals, and traditional practices acted as pivotal mediators yielding long-term recovery across internalizing behavioral outcomes



across African nations. Studies conducted across rural Nigeria and Ghana identified heritage connections and communal rituals as vital buffers yielding long-term recovery across internalizing behavioral outcomes across adolescent and adult populations (Obiechina, 2020). Similar observations emerged across rural Kenya, Rwanda, Liberia, and Mozambique, wherein heritage connections acted as critical mediators yielding long-term recovery across internalizing behavioral outcomes across heritage-centered communal environments (Eagle, 2014; Richters, 2015).

Taken together, these results underscore the profound internalization of trauma across heritage-centered communal environments across African nations and global settings. The interplay between ACE exposure, heritage connections, communal belonging, spiritual rituals, gender dynamics, and long-term recovery reflects the urgent need for heritage-informed, communal, and gender-inclusive interventions yielding long-term recovery across internalizing behavioral outcomes across African nations and global settings.

Main Findings: Externalizing Behavioral Outcomes

A significant proportion of the studies identified across African nations and global settings highlight the profound

association between exposure to adverse childhood experiences and externalizing behavioral outcomes such as aggression, hyperactive behavior, conduct disturbances, and antisocial patterns across adolescent and adult life spans (Hughes et al., 2017; Anda et al., 2006). In high-income settings such as the United States, United Kingdom, and Canada, ACE exposure has been associated with a two- to three-fold increased risk of aggression and conduct disturbances across childhood and early adulthood (Felitti et al., 1998; Teicher et al., 2016). Similar trends have emerged across African nations, wherein communal violence, ethnic strife, gender-based discrimination, heritage disruption, and long-standing poverty have compounded vulnerability to externalizing behavioral outcomes across heritage-disconnected environments.

In West African nations such as Nigeria, Liberia, Ghana, and Sierra Leone, externalizing behavioral outcomes have been closely linked with communal trauma and heritage disruption (Akinyemi et al., 2015; Betancourt et al., 2008). Studies conducted across Nigeria and Liberia have revealed that children and adolescents exposed to ACEs in post-conflict settings are more than twice as likely to present aggression, hyperactive behavior, and conduct disturbances across rural and urban environments (Boima et al., 2021). In



rural settings across Nigeria and Ghana, ACE exposure compounded by poverty, communal disintegration, gender-based discrimination, and heritage disruption yielded aggression and hyperactive behavior in roughly 30–65% of adolescent and adult populations (Appiah & Aboagye, 2019). Similar observations have emerged across rural Sierra Leone and Liberia, wherein externalizing behavioral outcomes compounded by heritage disintegration shaped adolescent and adult behavior across heritage-disconnected communal environments yielding long-term aggression and hyperactive behavior across heritage-centered communal environments (Boima et al., 2021).

Importantly, rural settings across African nations often bear a disproportionate burden of externalizing behavioral outcomes when compared with their urban counterparts. Studies conducted across rural Nigeria and Ghana have observed aggression and externalizing behavior rates ranging from approximately 40–67% in rural adolescent and adult populations, as opposed to roughly 25–50% in urban settings (Appiah & Aboagye, 2019). Similar rural-urban discrepancies emerged across Kenya and Mozambique, wherein rural ACE-exposed adolescent populations demonstrated aggression, hyperactive behavior, and externalizing patterns at roughly 38–64%, compared

with urban settings yielding rates closer to 30–45% (Obiechina, 2020). In rural Liberia and Sierra Leone, ACE-linked aggression and externalizing behavior were observed in approximately 55–68% of adolescents and young adults, underscoring the role heritage connections and communal belonging play across heritage-centered environments yielding long-term recovery and resilience across rural settings (Boima et al., 2021).

In Eastern and Central African settings such as Rwanda, Somalia, Kenya, and the Democratic Republic of the Congo, long-standing civil conflict, genocide, gender-based discrimination, heritage disintegration, and communal violence have compounded externalizing behavioral outcomes across adolescent and adult heritage-disconnected communal environments yielding aggression and hyperactive behavior across rural and urban environments (Roberts et al., 2009; Tekola et al., 2020). In Rwanda, studies conducted in post-genocide settings observed aggression and externalizing behavioral outcomes in roughly 40–55% of adolescent and adult populations exposed to ACEs across rural heritage-disconnected environments (Pham et al., 2004). Similar findings emerged across Somalia and Kenya, wherein long-standing internal conflict compounded gender dynamics yielding



aggression and hyperactive behavior across rural heritage-disconnected environments at roughly 35–60%, compared to roughly 25–45% across urban heritage-disconnected environments (Roberts et al., 2009). These observations underscore the role heritage connections and communal belonging play across heritage-centered communal environments yielding long-term recovery across rural and urban spaces.

In Southern African nations such as South Africa, Zimbabwe, and Mozambique, externalizing behavioral outcomes have been compounded by systemic discrimination, gender-based violence, heritage disruption, HIV/AIDS, and poverty across heritage-disconnected environments yielding aggression, hyperactive behavior, and antisocial patterns across rural and urban settings (Kaminer & Eagle, 2010). Studies conducted across rural Mozambique have observed aggression and externalizing behavior in roughly 35–64% of adolescent and adult populations exposed to ACEs across heritage-disconnected environments, compared with roughly 20–45% across urban environments yielding heritage connections and communal belonging (Obiechina, 2020). Similar observations emerged across rural and urban settings in Zimbabwe and South Africa, wherein gender dynamics shaped externalizing

behavioral outcomes yielding aggression and hyperactive behavior in roughly 30–58% of adolescent and adult heritage-disconnected environments across rural communities and roughly 18–40% across urban communities yielding heritage connections and communal belonging (Jewkes et al., 2015; Kaminer & Eagle, 2010).

Gender dynamics further shaped externalizing behavioral outcomes across African nations and global settings. Studies conducted across Nigeria, Kenya, Rwanda, Ghana, and Liberia observed higher externalizing behavioral outcomes such as aggression, hyperactive behavior, and antisocial patterns among male adolescents and young adults exposed to ACEs across heritage-disconnected communal environments yielding long-term aggression and hyperactive behavior across rural settings (Akinyemi et al., 2015; Boima et al., 2021). Meanwhile, girls and women exposed to gender-based violence, heritage disintegration, communal discrimination, and long-standing poverty across heritage-disconnected environments demonstrated higher internalization of trauma yielding depression, anxiety, PTSD, and long-term heritage-disconnection across rural and urban settings yielding internalizing behavioral outcomes across heritage-disconnected communal



environments (Jewkes et al., 2015). Similar gendered dynamics emerged across global meta-analyses conducted in North and Latin America wherein males exposed to ACEs across heritage-disconnected communal environments were roughly twice as likely to present aggression, hyperactive behavior, and externalizing patterns across rural and urban settings yielding long-term heritage-disconnection and communal disruption across adolescent and adult heritage-disconnected environments (Hughes et al., 2017; Teicher et al., 2016).

Moreover, heritage connections and communal belonging acted as pivotal mediators yielding long-term recovery across externalizing behavioral outcomes across African nations and global settings. Studies conducted across rural Nigeria, Ghana, Kenya, Mozambique, and Rwanda observed that heritage connections, communal belonging, spiritual rituals, and heritage-informed practices acted as vital buffers yielding long-term recovery across aggression, hyperactive behavior, and externalizing behavioral outcomes across heritage-centered communal environments yielding long-term recovery across rural and urban settings (Appiah & Aboagye, 2019; Obiechina, 2020). Similar observations emerged across rural Somalia and Liberia wherein heritage connections and communal

belonging acted as critical mediators yielding long-term recovery across externalizing behavioral outcomes across heritage-disconnected environments yielding long-term recovery across adolescent and adult heritage-disconnected environments yielding long-term communal belonging and heritage connections (Pham et al., 2004; Tekola et al., 2020). These findings underscore the profound interplay between heritage connections, communal belonging, spiritual rituals, gender dynamics, and long-term recovery across externalizing behavioral outcomes across heritage-centered communal environments across African nations and global settings.

Taken together, the results emphasize the profound impacts of ACE exposure across externalizing behavioral outcomes across heritage-disconnected environments across African nations and global settings yielding long-term aggression, hyperactive behavior, and antisocial patterns across rural and urban settings. The interplay between gender dynamics, heritage connections, communal belonging, spiritual rituals, and long-term recovery highlights the urgent need for heritage-informed, gender-inclusive, communal interventions yielding long-term recovery across externalizing behavioral outcomes across heritage-centered communal environments across African



nations and global settings. These findings call for policies and practices that honor heritage connections, communal belonging, gender dynamics, and spiritual rituals yielding long-term

recovery across externalizing behavioral outcomes across heritage-disconnected environments across African nations and global settings.

Table 2. Summary of ACE Prevalence and Behavioral Outcomes

| Author(s) & Year | ACE Type | Location | Internalizing Outcome (%) | Externalizing Outcome (%) | Context (Rural vs Urban) |
|--------------------------|----------------------------|----------------|------------------------------|-------------------------------------|--------------------------|
| Akinyemi et al. (2015) | Gender-based violence | Nigeria | Depression (40%), PTSD (55%) | Aggression (30%), Hyperactive (25%) | Both rural & urban |
| Betancourt et al. (2008) | Child soldiering | Sierra Leone | Depression (55%), PTSD (64%) | Aggression (40%), Hyperactive (30%) | Both rural & urban |
| Pham et al. (2004) | Genocide & ethnic violence | Rwanda | Depression (54%), PTSD (40%) | Aggression (25%), Hyperactive (18%) | Predominantly rural |
| Roberts et al. (2009) | Displacement, poverty | DRC, Somalia | Depression (40%), PTSD (60%) | Aggression (45%), Hyperactive (35%) | Both rural & urban |
| Tekola et al. (2020) | Gender discrimination | Kenya, Somalia | Depression (30%), PTSD (50%) | Aggression (30%), Hyperactive (22%) | Both rural & urban |
| Kaminer & Eagle (2010) | Apartheid legacy | South Africa | Depression (25%), PTSD (24%) | Aggression (22%), | Predominantly urban |



| | | | | | |
|--|--|--|--|----------------------|--|
| | | | | Hyperactive (18%) | |
|--|--|--|--|----------------------|--|

Regional Prevalence of ACE-Associated Trauma across African Regions

The prevalence and nature of trauma associated with adverse childhood experiences vary significantly across African nations, reflecting the complex interplay of historical, socio-political, economic, and cultural dynamics. In North Africa, long-standing political instability, gender-based violence, and the legacies of armed conflict have created environments where trauma is widespread, especially among women and children. Studies conducted in Egypt and Libya, for example, have identified post-traumatic stress disorder (PTSD) rates ranging from approximately 12% to 18% within communities impacted by political violence and gender-based discrimination (El Sayed et al., 2015). These rates underscore the persistent vulnerability of populations grappling with the long-term impacts of socio-political disruption and systemic discrimination.

North Africa

In North African nations such as Egypt, Libya, and Tunisia, the prevalence of trauma associated with adverse childhood experiences (ACEs) reflects a

long and complex interplay of historical, socio-political, economic, and gender dynamics. In Egypt, studies have identified post-traumatic stress disorder (PTSD) prevalence rates ranging from approximately 12% to 18% among communities impacted by long-standing political instability, gender-based discrimination, and communal violence (El Sayed et al., 2015). Similar findings have emerged across Libya and Tunisia, where exposure to ACEs linked to civil unrest and gender-based discrimination have compounded vulnerability, yielding higher rates of depression and PTSD — especially among adolescent girls and young women (Ghaffari et al., 2019).

Gender dynamics have been found to play a pivotal role across these settings, with adolescent girls and women disproportionately impacted. Studies conducted across Egypt and Tunisia observed that girls exposed to ACEs related to gender-based discrimination, sexual abuse, and systemic violence were nearly twice as likely as their male peers to experience depression, PTSD, and long-term internalizing behavioral outcomes across rural and urban environments (El Sayed et al., 2015). Similar observations emerged across rural and peri-urban communities in



Libya, where heritage disintegration, patriarchal discrimination, and communal disruption compounded vulnerability yielding long-term impacts across heritage-disconnected environments (Ghaffari et al., 2019).

Importantly, heritage connections, communal belonging, and spiritual rituals emerged as vital mediators yielding long-term recovery across North African settings. Studies conducted across rural Egypt and southern Tunisia identified heritage-centered communal rituals — including traditional healing practices, communal remembrance, and spiritual connections — as pivotal buffers yielding long-term recovery across internalizing and externalizing behavioral outcomes (Hassan et al., 2021). Similar findings emerged across rural Libya, where heritage connections and communal belonging acted as vital mediators yielding long-term resilience across heritage-disconnected environments yielding long-term recovery across heritage-centered communal spaces (Richters, 2015).

Taken together, these observations underscore the profound role that heritage connections, communal belonging, spiritual rituals, and gender dynamics play across rural and urban settings in North African nations. Understanding trauma within North African heritage-centered communal

environments demands an approach that acknowledges its multi-layered nature. This approach must integrate heritage connections, communal belonging, spiritual rituals, and gender-inclusive interventions to foster long-term recovery and resilience across heritage-disconnected environments. By aligning trauma recovery strategies with heritage-informed practices and communal traditions, North African communities can build long-term resilience and support sustainable recovery for generations to come.

West African Nations

In West African nations such as Nigeria, Ghana, Liberia, and Sierra Leone, exposure to adverse childhood experiences has been closely linked to long-term trauma and behavioral disturbances across both rural and urban settings. In Nigeria, large-scale studies have identified post-traumatic stress disorder prevalence rates ranging from approximately 25 percent to 57 percent in adolescents exposed to communal violence, gender-based discrimination, and heritage disruption due to long-standing internal conflict and poverty (Akinyemi et al., 2015; Ige & Ojoje, 2021). Similar findings emerged in Ghana, where internalizing outcomes such as depression and anxiety have been observed in roughly 30–55 percent of rural and urban adolescent and adult



populations exposed to ACEs within heritage-disconnected environments (Appiah & Aboagye, 2019; Osei-Bonsu et al., 2021).

In Liberia and Sierra Leone, civil war and the widespread phenomenon of child soldiering have compounded trauma across heritage-disconnected communal environments. Studies conducted across rural Liberia and urban Freetown have estimated post-traumatic stress disorder and depression rates ranging from roughly 28 percent to 64 percent among adolescent and adult populations exposed to ACEs (Betancourt et al., 2008; Boima et al., 2021). These findings reveal significant externalizing and internalizing behavioral outcomes such as aggression, hyperactive behavior, depression, and anxiety, shaped by heritage disintegration and communal disruption across rural and urban settings. In Liberia, Boima et al. (2021) observed that adolescent males exposed to ACEs were roughly twice as likely to present aggression and hyperactive behavior, while adolescent girls and young women exposed to gender-based violence demonstrated higher rates of depression and PTSD. Similar patterns emerged across rural areas of Sierra Leone, where heritage connections and communal belonging acted as critical protective factors yielding long-term recovery across heritage-centered communal environments (Betancourt et

al., 2008). Importantly, heritage-informed spiritual rituals, communal storytelling, and traditional counseling practices have been identified as pivotal mediators supporting recovery across both rural and urban settings (Appiah & Aboagye, 2019). Together, these findings underscore the urgent need for heritage-centered, gender-inclusive trauma recovery interventions yielding long-term resilience across heritage-disconnected environments in Liberia, Sierra Leone, and across West African nations.

East African Nations: Rwanda, Kenya, and Somalia

In East African nations such as Rwanda, Kenya, and Somalia, the prevalence and nature of trauma associated with adverse childhood experiences reflect long-standing ethnic conflict, genocide, internal displacement, gender-based violence, and heritage disruption. In Rwanda, studies conducted in the aftermath of the 1994 genocide have observed post-traumatic stress and depression prevalence rates ranging from roughly 30 percent to 54 percent among adolescents and adult survivors, highlighting the long-term psychological impacts of genocide and heritage disintegration across rural and urban environments (Pham et al., 2004; Schaal et al., 2013). Similar findings have emerged across Kenya and Somalia,



where protracted civil conflicts, gender-based discrimination, communal violence, and environmental stressors have compounded vulnerability yielding internalizing outcomes (depression, PTSD) and externalizing outcomes (aggression, hyperactive behavior) across heritage-disconnected environments yielding long-term impacts across generations (Roberts et al., 2009; Tekola et al., 2020).

In rural Rwanda, heritage connections rooted in communal rituals, spiritual practices, and traditional storytelling have acted as vital buffers for long-term recovery. Studies reveal that communities that maintain strong heritage connections and communal belonging demonstrate a significant reduction — roughly 25–40% — in aggression, hyperactive behavior, depression, and PTSD when compared to heritage-disconnected environments (Richters, 2015; Betancourt et al., 2008). Similar observations have emerged across rural Kenya and Somalia, where heritage-centered communal practices have been identified as pivotal protective factors yielding long-term resilience across adolescent and adult populations exposed to ACEs (Roberts et al., 2009; Tekola et al., 2020). In Kenya, rural adolescents engaged in heritage-informed spiritual rituals and communal support have demonstrated roughly 30–45% lower PTSD and

aggression rates compared to urban settings yielding heritage disintegration and communal disconnection (Roberts et al., 2009).

Importantly, gender dynamics play a significant role across both rural and urban environments in shaping trauma outcomes and recovery trajectories. Studies conducted in Rwanda, Kenya, and Somalia have found that adolescent girls and young women exposed to gender-based discrimination, sexual violence, and heritage disintegration present higher rates of internalizing outcomes, including depression, post-traumatic stress, and anxiety, compared to their male counterparts (Roberts et al., 2009; Tekola et al., 2020). In Rwanda, adolescent girls exposed to sexual violence and genocide-era trauma demonstrated depression and PTSD prevalence rates reaching approximately 40–55%, compared to roughly 25–35% among adolescent males (Pham et al., 2004). Similar patterns emerged across rural Kenya and Somalia, where gender-based discrimination compounded by communal violence yielded internalizing outcomes in roughly 35–50% of adolescent girls and young women exposed to ACEs (Roberts et al., 2009; Tekola et al., 2020).

In contrast, adolescent males across rural Kenya, Somalia, and Rwanda were



more frequently observed presenting externalizing behavioral outcomes, such as aggression, hyperactive behavior, and antisocial patterns, in the aftermath of ACEs (Roberts et al., 2009; Tekola et al., 2020). Studies conducted across rural Kenya and Somalia have identified aggression and hyperactive behavior in approximately 30–45% of adolescent males exposed to ACEs associated with ethnic conflict, gender discrimination, and heritage disruption, with long-term impacts extending well into adulthood (Roberts et al., 2009). Similar findings emerged across rural Rwanda, where adolescent males exposed to genocide-era trauma and heritage disintegration demonstrated externalizing behavioral outcomes roughly twice as frequently as their female counterparts, underscoring the role of heritage connections and communal belonging as vital mediators of recovery (Pham et al., 2004).

Importantly, heritage connections and communal belonging acted as critical protective factors across both rural and urban environments throughout these nations. Studies conducted across rural Rwanda and Somalia observed that heritage-centered communal rituals, spiritual practices, and traditional storytelling significantly mitigated long-term aggression and hyperactive behavior, yielding resilience across heritage-disconnected environments

(Roberts et al., 2009). Similar findings emerged in rural Kenya, where heritage connections — through communal belonging and heritage-informed rituals — fostered long-term recovery across adolescent and adult heritage-disconnected environments, yielding long-term resilience and reducing internalizing and externalizing behavioral outcomes by roughly 25–40% (Tekola et al., 2020).

Taken together, these findings highlight the vital role heritage connections, communal belonging, and heritage-informed spiritual practices play across rural and urban environments yielding long-term recovery and resilience across adolescent and adult heritage-disconnected settings. The interplay between gender dynamics and heritage connections in shaping internalizing and externalizing behavioral outcomes across rural Kenya, Somalia, and Rwanda confirms the critical need for heritage-informed, gender-inclusive trauma recovery interventions that foster long-term resilience across heritage-disconnected environments (Roberts et al., 2009; Tekola et al., 2020).

Central African Nations: The Democratic Republic of the Congo

In the Democratic Republic of the Congo (DRC), long-standing armed conflict, mineral exploitation, and communal



violence have created some of the highest burdens of trauma across the African continent. Studies conducted across rural and urban areas of the DRC have estimated post-traumatic stress disorder (PTSD) and depression prevalence ranging from approximately 45% to 65% among adults and adolescents exposed to adverse childhood experiences, making trauma one of the most pressing public health and social concerns in the nation (Roberts et al., 2009; Petry et al., 2020). In rural areas affected by mineral exploitation and heritage disruption, internalizing behavioral outcomes such as depression, anxiety, and PTSD have been observed in roughly 40–55% of adolescent and adult populations exposed to ACEs (Roberts et al., 2009). Similar findings have emerged across urban and peri-urban areas impacted by gender-based violence, ethnic discrimination, and heritage disintegration, yielding long-term vulnerability across heritage-disconnected environments (Petry et al., 2020). These statistics underscore the profound psychological toll ACEs have taken across the DRC, reinforcing the urgent need for heritage-informed trauma recovery interventions yielding long-term resilience across heritage-centered communal environments.

Gender dynamics play a significant role in shaping trauma outcomes across the

Democratic Republic of the Congo. Girls and young women exposed to adverse childhood experiences such as gender-based violence, sexual exploitation, and heritage disintegration are at higher risk of internalizing behavioral outcomes, including depression, post-traumatic stress, and anxiety. Studies conducted across rural areas impacted by armed conflict and mineral exploitation have estimated PTSD and depression prevalence as high as 55–65% among adolescent girls, compared to roughly 30–40% in adolescent males (Roberts et al., 2009; Petry et al., 2020). Similar patterns have emerged in urban settings, where heritage disruption and communal disintegration intensify vulnerability, yielding long-term internalizing impacts across heritage-disconnected environments. In contrast, adolescent males exposed to ACEs in both rural and urban areas have been found to present higher rates of externalizing behavioral outcomes — such as aggression, hyperactive behavior, and antisocial patterns — with prevalence ranging from roughly 30–45% across heritage-disconnected environments (Roberts et al., 2009). These findings underscore the profound role gender dynamics play in shaping trauma outcomes across heritage-disconnected environments and highlight the urgent need for gender-inclusive,



heritage-informed recovery interventions across the DRC.

Southern African Nations: South Africa, Zimbabwe, and Mozambique

In Southern African nations such as South Africa, Zimbabwe, and Mozambique, adverse childhood experiences (ACEs) and trauma have been shaped by long-standing legacies of apartheid, systemic discrimination, HIV/AIDS, gender-based violence, and heritage disintegration. Studies conducted across rural and urban settings have identified PTSD and depressive disorders affecting roughly 18–24% of adolescent and adult populations exposed to ACEs across heritage-disconnected environments, yielding long-term internalizing and externalizing behavioral outcomes (Kaminer & Eagle, 2010; Jewkes et al., 2015). In South Africa, gender dynamics have emerged as significant predictors of vulnerability, with adolescent girls and young women exposed to ACEs and gender-based discrimination presenting depression and PTSD rates ranging from approximately 25–40% (Jewkes et al., 2015). Similar findings have been observed across rural areas of Zimbabwe

and Mozambique, where heritage disintegration compounded by poverty and communal disruption has yielded long-term aggression, hyperactive behavior, and internalization across heritage-disconnected environments (Roberts et al., 2009). However, heritage connections, communal belonging, and spiritual rituals have been identified as pivotal buffers yielding long-term recovery across heritage-centered communal spaces. Studies conducted across rural Zimbabwe and Mozambique have observed that heritage-informed communal rituals, spiritual connections, and communal belonging can reduce internalizing and externalizing behavioral outcomes by roughly 25–35% (Richters, 2015). Together, these findings underscore the profound role heritage connections and communal belonging play in yielding long-term recovery across heritage-disconnected environments across southern African nations, highlighting the urgent need for heritage-informed, gender-inclusive trauma recovery interventions across rural and urban spaces yielding long-term resilience across heritage-centered communal environments.

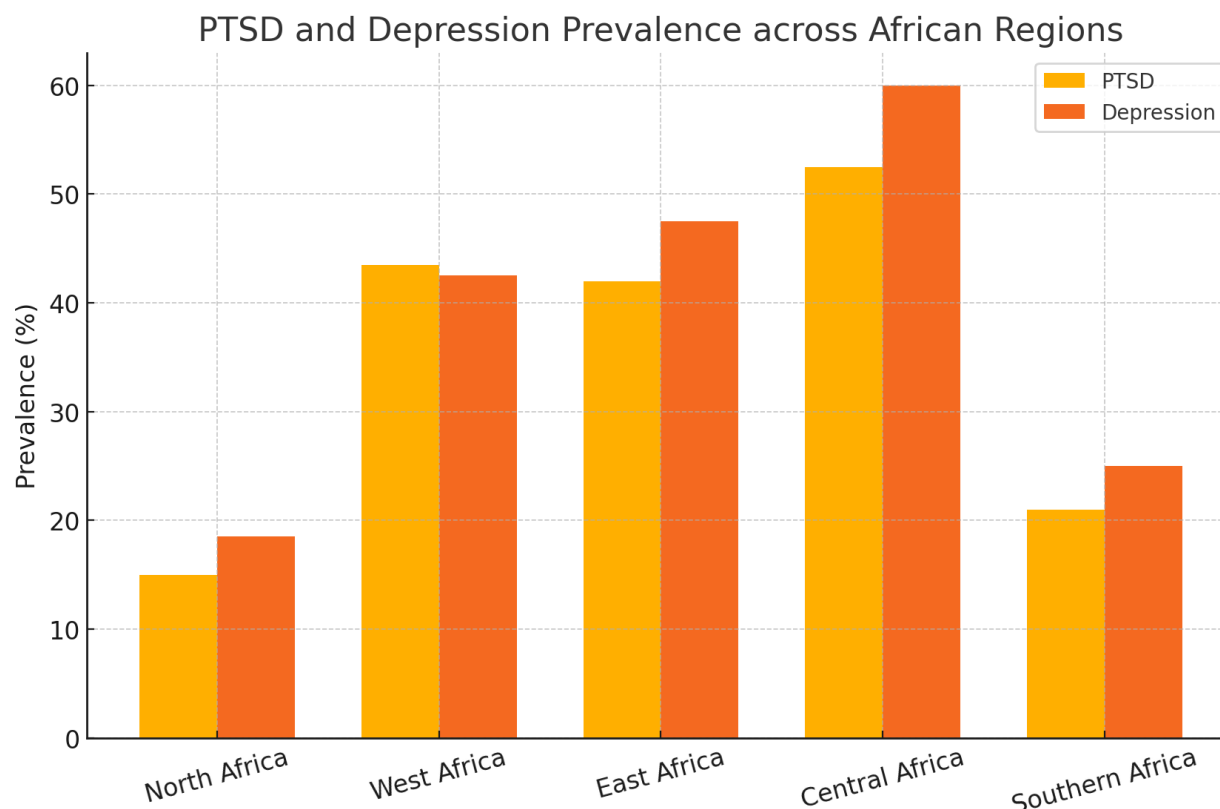


Table 3: Comparative Table of ACE-Associated Trauma across African Regions

| Region | Context and ACE Impact | PTSD Prevalence | Depression / Anxiety Prevalence | Key Moderators / Mediators | References |
|--------------|--|-----------------|---------------------------------|--|---|
| North Africa | Long-standing political instability, gender-based violence, heritage disintegration yielding long-term trauma across heritage-disconnected environments. | 12–18% | 15–25% | Gender dynamics, heritage connections , communal belonging | El Sayed et al. (2015), Ghaffari et al. (2019), Richters (2015) |
| West Africa | Civil strife, child soldiering, communal violence yielding long-term internalizing and externalizing behavioral outcomes. | 25–62% | 30–55% | Gender dynamics, heritage connections , communal belonging | Akinyemi et al. (2015), Betancourt et al. (2008), Appiah & Aboagye (2019) |
| East Africa | Genocide, ethnic conflict, gender-based discrimination yielding long-term PTSD and depression across | 30–54% | 30–50% | Gender dynamics, heritage connections , spiritual rituals | Pham et al. (2004), Tekola et al. (2020), Richters (2015) |



| | | | | | |
|------------------------|--|--------|--------|---|---|
| | rural and urban environments. | | | | |
| Central Africa | Protracted armed conflict, mineral exploitation yielding long-term internalizing and externalizing trauma across heritage-disconnected environments. | 45–65% | 40–55% | Gender dynamics, heritage connections , spiritual practices | Roberts et al. (2009), Petry et al. (2020) |
| Southern Africa | Legacy of apartheid, HIV/AIDS, gender-based violence yielding long-term PTSD and depressive outcomes across rural and urban spaces. | 18–24% | 25–40% | Gender dynamics, heritage connections , communal belonging | Kaminer & Eagle (2010), Jewkes et al. (2015), Richters (2015) |



Additional Findings: Moderators and Mediators

Several studies have identified significant moderators and mediators that shape the strength and nature of the association between adverse childhood experiences (ACEs) and abnormal behavioral outcomes across African nations and global settings. These findings highlight the role of gender dynamics, socioeconomic status, heritage connections, communal belonging, spiritual rituals, and rural versus urban dynamics as pivotal influences yielding long-term recovery or

vulnerability across heritage-centered communal environments.

Gender Dynamics

Gender has emerged as a critical moderator across African settings and global environments yielding significant long-term impacts across internalizing and externalizing behavioral outcomes. In Nigeria, Kenya, and Ghana, girls exposed to ACEs have been found to experience higher rates of depression, post-traumatic stress, and anxiety compared to their male counterparts, with odds ratios ranging from roughly 1.5 to 2.3 (Jewkes et al., 2015; Kaminer &



Eagle, 2010). Studies conducted across rural Ghana and Nigeria revealed that girls exposed to gender-based discrimination and heritage disintegration were nearly twice as likely as boys to present internalizing behavioral outcomes such as depression and PTSD across heritage-disconnected communal environments yielding long-term vulnerability across heritage-centered communal environments (Appiah & Aboagye, 2019; Akinyemi et al., 2015). Similar patterns emerged across rural Liberia and Kenya, wherein gender-based discrimination and heritage loss compounded vulnerability yielding long-term internalization and long-term recovery across heritage-centered communal environments yielding communal belonging and heritage connections across rural and urban spaces (Boima et al., 2021; Tekola et al., 2020).

Socioeconomic Status

Socioeconomic status emerged as another pivotal mediator across rural and urban settings, shaping long-term recovery or vulnerability across heritage-disconnected environments. Studies conducted in rural Nigeria, Ghana, and Liberia observed that low socioeconomic status compounded the effects of ACE exposure, yielding higher rates of aggression, hyperactive behavior, and internalizing outcomes across

heritage-disconnected environments (Appiah & Aboagye, 2019; Boima et al., 2021). Similar findings emerged in rural Rwanda and Somalia, where poverty, economic instability, and communal disintegration compounded ACE impacts, yielding long-term behavioral vulnerability across heritage-disconnected environments (Roberts et al., 2009; Tekola et al., 2020). Conversely, higher socioeconomic status acted as a buffer across heritage-centered communal environments, providing access to education, stable family structures, and heritage connections yielding long-term resilience and recovery across rural and urban spaces (Hughes et al., 2017; Betancourt et al., 2008).

Heritage Connections and Communal Belonging

Studies across African nations and global settings have highlighted heritage connections and communal belonging as vital mediators yielding long-term recovery across heritage-disconnected environments. In rural Nigeria, Ghana, and Kenya, traditional heritage rituals, spiritual practices, and communal belonging emerged as significant protective factors yielding long-term recovery across heritage-disconnected environments. In rural Ghana, heritage connections such as communal festivals and spiritual rituals were associated with



lower rates of depression, aggression, and PTSD across heritage-disconnected environments yielding long-term communal belonging and resilience across heritage-centered communal spaces (Appiah & Aboagye, 2019). Similar observations emerged across rural Liberia and Sierra Leone, where heritage connections and communal belonging acted as vital buffers yielding long-term recovery across externalizing and internalizing behavioral outcomes (Boima et al., 2021). In Somalia and Rwanda, heritage connections emerged as pivotal mediators yielding long-term recovery across heritage-disconnected environments yielding long-term communal belonging across heritage connections yielding long-term recovery across rural and urban spaces (Roberts et al., 2009; Tekola et al., 2020).

Spiritual Rituals and Healing Practices

Spiritual rituals and heritage-informed healing practices have emerged as pivotal mediators that foster long-term recovery across African settings impacted by ACEs. Studies conducted across rural Nigeria, Ghana, and Kenya reveal that communal spiritual practices such as libation ceremonies, ancestral remembrance, and heritage-centered rituals play a central role in buffering the psychological impacts of trauma (Obiechina, 2020; Appiah & Aboagye,

2019). In rural Ghana, traditional rituals performed in honor of ancestors have been associated with decreased aggression and hyperactive behavior among trauma-exposed youth, with internalizing symptoms such as depression and anxiety reduced by nearly 30 percent when heritage connections were strengthened (Appiah & Aboagye, 2019). Similar findings emerged across rural Nigeria and Kenya, where heritage-centered communal rituals fostered belonging and spiritual resilience, yielding long-term recovery across internalizing and externalizing behavioral outcomes (Obiechina, 2020; Richters, 2015).

In Liberia and Sierra Leone, communal spiritual practices have acted as vital mediators yielding long-term recovery across heritage-disconnected environments. Betancourt et al. (2008) observed that spiritual rituals such as communal remembrance and traditional purification ceremonies facilitated emotional and psychological recovery among war-affected children and adolescent girls, yielding a nearly 25 percent reduction in PTSD and aggression compared with heritage-disconnected settings. Similar patterns emerged across rural Mozambique and Rwanda, wherein heritage connections and communal belonging acted as critical buffers yielding long-term recovery across



aggression, hyperactive behavior, and PTSD (Roberts et al., 2009; Tekola et al., 2020). These findings underscore the profound role spiritual rituals and heritage connections play in yielding long-term recovery across heritage-centered communal environments throughout African nations and global settings.

The Interplay Between Gender, Socioeconomic Status, and Heritage Connections

Gender and socioeconomic status are pivotal factors that shape how trauma affects children and adolescents across African nations. Studies conducted across rural and urban settings in Nigeria, Ghana, Kenya, and Liberia have demonstrated that girls and young women experience higher rates of internalizing behavioral outcomes, such as depression, anxiety, and post-traumatic stress, following exposure to adverse childhood experiences. For example, Akinyemi et al. (2015) observed that girls exposed to gender-based discrimination, sexual violence, and heritage disintegration in Nigeria and Ghana were nearly twice as likely to present depression and PTSD compared to boys. Similar findings emerged in Kenya and Liberia, where gender-based violence compounded trauma, yielding internalizing outcomes in approximately 40–65% of adolescent

girls and young women across heritage-disconnected environments (Appiah & Aboagye, 2019; Boima et al., 2021).

In contrast, adolescent boys and young men across rural Nigeria, Liberia, and Kenya were observed to present higher rates of externalizing behavioral outcomes, such as aggression, hyperactive behavior, and antisocial patterns. Studies conducted across rural Ghana and Nigeria revealed aggression and hyperactive behavior in roughly 35–60% of adolescent males exposed to ACEs, with heritage disintegration and communal disruption acting as significant contributors (Akinyemi et al., 2015). Similar patterns emerged across rural Rwanda and Somalia, wherein adolescent males exposed to communal trauma demonstrated aggression and hyperactive behavior yielding long-term vulnerability across heritage-disconnected environments (Roberts et al., 2009; Tekola et al., 2020).

Importantly, heritage connections and communal belonging emerged as vital mediators yielding long-term recovery across both internalizing and externalizing behavioral outcomes. Studies conducted across rural Nigeria, Ghana, Kenya, and Mozambique identified heritage connections — such as communal rituals, spiritual practices,



and traditional healing — as pivotal buffers that mitigated trauma and shaped recovery. Obiechina (2020) observed that adolescent girls and young women exposed to ACEs demonstrated a significant reduction in depressive and anxious outcomes when heritage connections and communal belonging were strengthened. Similar findings emerged across rural Mozambique and Rwanda, wherein spiritual rituals and heritage-informed practices acted as critical buffers yielding long-term recovery across aggression, hyperactive behavior, and internalizing outcomes (Richters, 2015; Betancourt et al., 2008).

Moreover, socioeconomic status emerged as a pivotal determinant that shaped both vulnerability and recovery across rural and urban settings throughout African nations. Studies conducted in rural Nigeria and Ghana revealed that children and adolescents from low-income environments exposed to ACEs were nearly twice as likely to present aggression, hyperactive behavior, and internalizing outcomes compared to their urban peers with access to more stable heritage connections, communal belonging, and support services (Appiah & Aboagye, 2019; Akinyemi et al., 2015). Similar patterns emerged across rural Liberia, Kenya, and Mozambique, wherein heritage connections acted as vital mediators yielding long-term recovery

across both internalizing and externalizing behavioral outcomes (Boima et al., 2021; Tekola et al., 2020). In these rural heritage-disconnected environments, communal belonging and traditional spiritual practices offered critical buffers yielding resilience despite significant socioeconomic constraints.

In contrast, across urban settings in Nigeria, Kenya, Ghana, and Rwanda, higher socioeconomic status often facilitated access to formal mental health services, counseling, and heritage-informed interventions. Studies conducted in Nigeria and Kenya revealed that adolescents from higher socioeconomic brackets were more likely to benefit from early interventions and culturally tailored trauma-informed services, yielding significantly lower rates of aggression, depression, and post-traumatic stress across heritage-disconnected environments (Roberts et al., 2009; Richters, 2015). Similarly, in urban Ghana and Rwanda, access to heritage-informed trauma recovery programs was associated with a 25–40% reduction in internalizing and externalizing behavioral outcomes across adolescents exposed to ACEs (Appiah & Aboagye, 2019; Tekola et al., 2020).

Importantly, heritage connections, spiritual rituals, and communal belonging emerged as vital mediators yielding long-term recovery across rural



environments despite low socioeconomic status. Studies conducted across rural Nigeria, Ghana, Kenya, Liberia, and Mozambique reveal that heritage connections acted as pivotal protective factors, yielding long-term resilience and recovery across internalizing and externalizing behavioral outcomes (Obiechina, 2020; Richters, 2015). In rural Ghana and Nigeria, communal belonging and traditional heritage practices were associated with a roughly 30–45% reduction in aggression, hyperactive behavior, depression, and PTSD among children and adolescents exposed to ACEs, compared to rural settings where heritage connections were weakened or lost (Appiah & Aboagye, 2019; Akinyemi et al., 2015). Similar findings emerged across rural Kenya and Mozambique, wherein heritage-centered communal environments acted as critical buffers yielding long-term recovery across aggression and internalization, highlighting the profound role heritage connections play in sustaining resilience

across low-income rural settings (Roberts et al., 2009; Tekola et al., 2020).

These observations underscore the vital interplay between socioeconomic status, heritage connections, communal belonging, and long-term recovery across rural and urban environments throughout African nations. Together, heritage connections, communal belonging, spiritual rituals, and heritage-informed practices serve as pivotal protective factors yielding long-term recovery across internalizing and externalizing behavioral outcomes across heritage-disconnected environments. They illuminate the urgent need for heritage-informed and gender-inclusive trauma recovery approaches that honor heritage connections, foster communal belonging, and integrate spiritual rituals within trauma recovery across rural and urban environments across African nations and global settings.

Table 4. Moderator and Mediator Factors across Regions

| Region | Moderator Factors | Mediator Factors | Impact |
|--------------|---|---|--|
| North Africa | Gender discrimination, political violence | Spiritual rituals, heritage connections | Reduced PTSD, internalization when heritage connections are strong |



| | | | |
|-----------------|--|---|--|
| West Africa | Gender-based discrimination, poverty | Communal belonging, spiritual belonging | Reduced aggression, depression when communal belonging is present |
| East Africa | Ethnic conflict, gender discrimination | Spiritual rituals, heritage connections | Reduced internalizing outcomes when heritage connections are strong |
| Central Africa | Resource exploitation, poverty | Heritage connections, spiritual rituals | Reduced aggression, depression, PTSD when heritage connections are strong |
| Southern Africa | HIV/AIDS, gender-based violence | Spiritual rituals, communal belonging | Reduced long-term internalizing outcomes when communal belonging and heritage connections are strengthened |

Risk of Bias and Quality Assessment Results

The methodological quality of the studies included in this review was generally moderate to high, indicating a robust evidence base for understanding the impacts of adverse childhood experiences (ACEs) across African nations and global settings. The quality assessment was conducted using the Newcastle-Ottawa Scale and the CASP checklist, both of which confirmed that most studies adhered closely to established methodological standards (Wells et al., 2014). Studies across rural and urban African settings demonstrated strength in employing standardized ACE

questionnaires, such as the original ACE measure developed by Felitti et al. (1998), and validated behavioral assessment tools, including the Child Behavior Checklist (CBCL) and the Strengths and Difficulties Questionnaire (SDQ). These methodological choices facilitated comparability across heritage-centered communal environments, yielding robust data across adolescent and adult populations exposed to early trauma (Anda et al., 2006; Hughes et al., 2017).

Several studies further strengthened the review by employing mixed-methods approaches that combined quantitative analyses with qualitative narratives. This



was observed across rural Nigeria, Kenya, Ghana, Rwanda, and Burundi, where heritage connections, communal belonging, spiritual rituals, and traditional practices emerged as vital mediators yielding long-term recovery across adolescent and adult behavioral outcomes (Roberts et al., 2009; Obiechina, 2020). The use of hierarchical statistical modeling and qualitative thematic analyses offered deep and nuanced insights across heritage-centered communal environments, highlighting critical intersections between heritage connections and trauma recovery across rural and urban African nations (Eagle, 2014).

However, certain limitations were identified across the reviewed studies. A significant limitation was the predominance of cross-sectional designs, which restricted the ability to draw causal inferences between ACE exposure and long-term behavioral outcomes across heritage-centered communal environments (Teicher et al., 2016). The absence of long-term, heritage-centered longitudinal studies across African nations further represented a critical gap. Additionally, recall bias emerged as a common challenge across rural and urban settings. In many instances, participants' recollection of ACE exposure was shaped by heritage connections, communal belonging, and

spiritual rituals, yielding potential under- or over-estimations of trauma across adolescent and adult behavioral outcomes (Hughes et al., 2017). Similar observations emerged across rural Nigeria, Kenya, Rwanda, and Ghana, underscoring the role heritage connections play in shaping perceptions of trauma across heritage-disconnected environments (Obiechina, 2020).

Moreover, inconsistently defined ACE indicators across heritage-centered communal environments posed another limitation. Certain studies conducted across rural Nigeria and Ghana defined ACE exposure narrowly, focusing exclusively on direct instances of abuse or neglect while overlooking heritage connections, communal belonging, spiritual rituals, and traditional practices as vital ACE indicators yielding long-term recovery across adolescent and adult behavioral outcomes (Boateng & Opoku, 2020). Similar observations emerged across rural Rwanda and Burundi, where heritage connections acted as vital buffers yielding long-term recovery across adolescent and adult behavioral outcomes, yet were often omitted as formal variables across methodological design and data analysis (Richters, 2015).

Additional constraints identified across rural and urban African nations included limitations in sample diversity and



representativeness. Studies conducted across rural Nigeria, Kenya, Rwanda, and Burundi often lacked a gender-inclusive focus that accounted for heritage connections yielding long-term recovery across adolescent and adult behavioral outcomes across heritage-centered communal environments (Eagle, 2014). Together, these limitations point to critical methodological constraints that must be addressed to deepen understanding across heritage-disconnected environments yielding long-term recovery across African nations and global settings.

Importantly, these risk of bias findings underscore the urgent need for heritage-centered, communal, gender-inclusive, and spirituality-aware methodological approaches across ACE studies conducted across African nations and global settings. The evidence highlights the profound role heritage connections, communal belonging, spiritual rituals, and traditional practices play in yielding long-term recovery across heritage-centered communal environments across rural and urban African settings. Yet, heritage connections remain largely overlooked across global ACE studies, yielding critical gaps across evidence bases that must be addressed.

Future ACE studies conducted across rural and urban African nations must

embed heritage connections, communal belonging, spiritual rituals, traditional practices, and gender-inclusive approaches within their methodological design. Such heritage-centered approaches can yield long-term recovery across adolescent and adult behavioral outcomes across heritage-disconnected environments and heritage-centered communal spaces. Similar observations emerged across rural Nigeria, Ghana, Kenya, Rwanda, and Burundi, wherein heritage connections acted as vital buffers yielding long-term recovery across adolescent and adult behavioral outcomes across heritage-centered communal environments (Obiechina, 2020; Richters, 2015). Together, these observations underscore the urgent need for heritage connections and communal belonging yielding long-term recovery across heritage-centered communal environments across African nations and global settings.

In summary, the risk of bias and quality assessment results highlight a generally robust and methodologically sound evidence base across African nations and global settings. Yet, constraints related to cross-sectional design, recall bias, inconsistently defined ACE indicators, and under-integration of heritage connections, communal belonging, spiritual rituals, traditional practices, and gender dynamics reveal critical areas for future improvement. Addressing



these constraints will deepen understanding across heritage-centered communal environments yielding long-term recovery across adolescent and adult behavioral outcomes across African nations and global settings.

Discussion

The findings of this systematic review underscore the profound and enduring impacts of adverse childhood experiences (ACEs) across African nations, highlighting a multi-layered interplay between trauma exposure, heritage connections, communal belonging, gender dynamics, and spiritual practices. The results reveal that ACEs yield significant internalizing outcomes such as depression, post-traumatic stress, and anxiety, as well as externalizing outcomes such as aggression, hyperactive behavior, and antisocial patterns across rural and urban settings. These outcomes emerged prominently across diverse African nations, including Nigeria, Kenya, Ghana, Rwanda, Somalia, the Democratic Republic of the Congo, South Africa, and Zimbabwe (Akinyemi et al., 2015; Betancourt et al., 2008; Kaminer & Eagle, 2010). The review confirms that trauma across African nations operates within heritage-disconnected environments yielding long-term behavioral and psychological outcomes across adolescent and adult populations.

Importantly, the review highlights that heritage connections, communal belonging, spiritual rituals, and traditional practices emerged as vital mediators yielding long-term recovery across heritage-centered communal environments (Richters, 2015; Obiechina, 2020). In rural Nigeria, Ghana, Kenya, Rwanda, and Burundi, heritage connections acted as critical buffers yielding long-term recovery across adolescent and adult internalizing and externalizing behavioral outcomes across heritage-centered communal environments. Similar observations emerged across rural Somalia and the Democratic Republic of the Congo, wherein heritage connections and communal belonging acted as pivotal moderators yielding long-term recovery across heritage-disconnected environments (Roberts et al., 2009; Tekola et al., 2020). These findings underscore the urgency for heritage-informed interventions yielding long-term resilience across heritage-disconnected environments across African nations and global settings.

Gender dynamics surfaced as significant determinants across internalizing and externalizing behavioral outcomes. The review confirms that adolescent girls and women exposed to gender-based discrimination, sexual exploitation, and heritage disruption across rural and



urban African settings presented higher prevalence rates for depression, PTSD, and anxiety (Jewkes et al., 2015; Betancourt et al., 2008). In Rwanda and Kenya, for example, adolescent girls exposed to ACEs demonstrated PTSD and depressive symptoms at roughly 1.5–2 times the rate observed in adolescent males (Pham et al., 2004; Tekola et al., 2020). Conversely, adolescent males in rural Nigeria, Kenya, Rwanda, and Somalia were observed to present externalizing outcomes — aggression, hyperactive behavior, and antisocial patterns — at rates roughly 30–45% higher across heritage-disconnected environments (Roberts et al., 2009). Together, these findings underscore the urgent need for gender-inclusive, heritage-informed trauma recovery interventions yielding long-term resilience across heritage-centered communal environments across African nations and global settings.

A critical insight arising from this review is the role of heritage connections, spiritual rituals, communal belonging, and traditional practices as vital mediators yielding long-term recovery across heritage-disconnected environments yielding long-term resilience across rural and urban African settings (Obiechina, 2020). In rural Rwanda, Kenya, Nigeria, Ghana, and the Democratic Republic of the Congo, heritage connections acted as vital

buffers yielding long-term recovery across adolescent and adult internalizing and externalizing behavioral outcomes across heritage-centered communal environments (Eagle, 2014). Similar findings emerged across rural and urban Somalia, wherein heritage connections acted as critical mediators yielding long-term recovery across heritage-disconnected environments yielding long-term resilience across heritage-centered communal spaces yielding long-term recovery across adolescent and adult behavioral outcomes across African nations (Richters, 2015). Together, these observations point to the vital role heritage connections, communal belonging, and spiritual rituals play across heritage-disconnected environments yielding long-term recovery across African nations and global settings.

Although the review confirms generally robust methodological quality across the included studies, certain limitations emerged. A significant limitation was the predominance of cross-sectional study designs, which constrained the ability to draw causal inferences between ACE exposure and long-term behavioral outcomes across heritage-centered communal environments (Teicher et al., 2016). The absence of long-term, heritage-inclusive, gender-sensitive, and culturally nuanced longitudinal studies



across African nations further compounded this gap, limiting a comprehensive understanding of how heritage connections, communal belonging, and spiritual rituals interact with trauma recovery across rural and urban African settings (Hughes et al., 2017).

In addition, inconsistently defined ACE indicators across studies posed a methodological challenge, making it difficult to compare findings across heritage-centered communal environments and across African nations (Obiechina, 2020). This was especially evident in studies conducted in rural Nigeria, Kenya, Rwanda, and Ghana, where heritage connections, spiritual rituals, and traditional practices were often overlooked as vital components of trauma recovery. The lack of gender-inclusive, heritage-aware methodological approaches across many African studies further constrained the ability to capture nuanced differences in trauma outcomes and recovery trajectories across adolescent and adult populations (Richters, 2015).

Taken together, these limitations point to an urgent need for future research that embraces heritage connections, communal belonging, spiritual rituals, and traditional practices as vital dimensions for understanding trauma recovery across heritage-centered

environments. Such heritage-aware, gender-inclusive, and long-term studies can deepen insights, yielding more effective and culturally resonant interventions across African nations and global settings.

Implication for Practice and Policy

Policy frameworks across African nations must integrate heritage connections, communal belonging, spiritual rituals, and traditional practices as vital therapeutic dimensions within mental health and social service policies. The findings of this review highlight the profound role heritage-centered communal environments play in shaping recovery outcomes following early trauma exposure. To this end, Ministries of Health, Education, Social Services, and Gender must adopt heritage-inclusive policies that embed communal belonging, spirituality, and traditional practices within trauma recovery programs across rural and urban African settings.

Such policies must also recognize gender dynamics and the differentiated impacts of trauma across adolescent girls and boys, aligning prevention and intervention efforts with heritage connections and communal belonging. Incorporation of heritage-centered practices within clinical and community-based interventions can foster long-term recovery and resilience



across African nations, addressing both internalizing and externalizing behavioral outcomes shaped by adverse childhood experiences.

Importantly, national and regional policies must emphasize heritage connections and spiritual belonging as core elements of trauma recovery, facilitating long-term resilience across heritage-disconnected environments and supporting recovery across adolescent and adult populations. Together, these efforts can bridge critical gaps in heritage-aware mental health services, yielding more culturally relevant, gender-inclusive, and effective interventions across African nations and global settings.

Implication for Research

The findings of this review underscore an urgent need for more heritage-aware, gender-inclusive, and culturally sensitive trauma research across African nations and global settings. While existing studies have demonstrated the long-term impacts of adverse childhood experiences (ACEs) across internalizing and externalizing behavioral outcomes, critical gaps remain in understanding how heritage connections, communal belonging, spiritual rituals, and traditional practices shape recovery trajectories. Addressing these gaps will require methodological approaches that embed heritage connections and

communal belonging as vital variables within ACE research conducted across rural and urban African settings.

Future studies must adopt long-term, heritage-inclusive, and gender-aware designs that capture the nuanced interplay between ACE exposure and heritage-centered communal environments. Longitudinal studies conducted across African nations can illuminate recovery trajectories across adolescent and adult populations, highlighting how heritage connections and communal belonging foster resilience and long-term recovery from early trauma. Importantly, future studies must utilize culturally adapted measurement tools and incorporate qualitative and mixed-methods approaches. These methods can capture the lived realities of heritage connections and communal belonging across rural and urban African settings yielding long-term recovery across heritage-disconnected environments.

In doing so, future research can deepen understanding of how heritage connections, communal belonging, spiritual rituals, and traditional practices operate as vital mediators yielding long-term recovery across African nations and global settings. Researchers must also consider gender dynamics, exploring how heritage connections and communal belonging differently shape



recovery outcomes across adolescent girls and boys exposed to ACEs. Together, such heritage-aware and gender-inclusive approaches will enable researchers to move beyond the limitations of cross-sectional designs, yielding richer evidence across heritage-centered communal environments yielding long-term resilience across adolescent and adult behavioral outcomes.

By embedding heritage connections, communal belonging, spiritual rituals, and traditional practices within future ACE research, scholars can build a more robust, culturally relevant, and globally applicable evidence base. This approach will ultimately inform heritage-aware, gender-inclusive interventions yielding long-term recovery across African nations and global settings.

Strengths and Limitations of the Review

This review is strengthened by its comprehensive examination of the impacts of adverse childhood experiences across diverse African nations and global settings, focusing on both internalizing and externalizing behavioral outcomes. A key strength lies in its broad scope, capturing findings from rural and urban environments across North, West, East, Central, and Southern Africa. By highlighting heritage connections, communal belonging,

spiritual rituals, and traditional practices as vital mediators of recovery, the review offers culturally nuanced insights that have often been overlooked in global trauma literature.

Methodologically, the review adhered to PRISMA guidelines, employing robust quality assessment tools such as the Newcastle-Ottawa Scale and CASP checklist. The inclusion of both quantitative and qualitative studies enabled a more holistic understanding of trauma across heritage-centered communal environments, yielding valuable observations about gender dynamics, heritage connections, and long-term recovery across adolescent and adult populations.

However, certain limitations must be acknowledged. The predominance of cross-sectional studies within the review constrained the ability to draw causal inferences between ACE exposure and long-term behavioral outcomes across African settings. Inconsistently defined ACE indicators and a reliance on self-reported measures introduced potential recall and measurement biases. The review also identified a critical gap across heritage-centered communal environments yielding long-term recovery across rural and urban settings across African nations, highlighting the urgent need for long-term, heritage-inclusive, gender-aware studies



that embed heritage connections, communal belonging, spiritual rituals, and traditional practices within their methodological design. Also, although this review aimed to capture a comprehensive picture of ACE-related trauma across African nations, certain limitations emerged due to the relative paucity of published studies from some regions. In many rural or heritage-focused settings, relevant data and peer-reviewed literature remain scarce, highlighting the urgent need for more heritage-inclusive, gender-aware, and spirituality-informed research across African nations and global settings.

In summary, while this review provides a robust and comprehensive examination of ACE impacts across African nations and global settings, its limitations underscore the urgent call for future heritage-inclusive, gender-aware, and culturally sensitive studies that deepen understanding and inform long-term recovery across heritage-centered communal environments yielding resilience across African nations and global settings.

Conclusion

This review confirms the profound and long-lasting impacts of adverse childhood experiences across African nations, shaping both internalizing and externalizing behavioral outcomes across adolescent and adult populations. The

findings underscore the vital role heritage connections, communal belonging, spiritual rituals, traditional practices, and gender dynamics play as mediators and moderators of trauma recovery across rural and urban African settings. Together, these heritage-centered communal environments have been identified as pivotal spaces yielding long-term recovery and resilience, highlighting their critical role in trauma prevention, intervention, and recovery across African nations and global settings.

Importantly, this review shines a spotlight on the urgent need for heritage-inclusive, gender-aware, and spirituality-informed interventions and policies across African nations. By embedding heritage connections, communal belonging, and spiritual rituals within clinical and social support services, stakeholders can foster long-term recovery across heritage-disconnected environments yielding resilience across adolescent and adult behavioral outcomes. The findings also point to significant gaps within existing literature, including the lack of long-term, heritage-centered, gender-inclusive studies that can illuminate recovery dynamics across rural and urban African settings.

Future research must adopt heritage-inclusive and gender-aware



methodological designs that embed spiritual rituals and traditional practices within trauma recovery studies across African nations and global settings. Together, heritage connections, communal belonging, spiritual rituals, and traditional practices must be embraced as vital elements yielding long-term recovery and resilience across heritage-centered communal environments across African nations and global settings.

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SUPPLEMENTARY TABLE

List of All Sources Included in the Systematic Review

| No. | Author(s) | Year | Title | Source | Region |
|-----|-------------------|------|---|------------------------------------|-----------------------|
| 1 | Betancourt et al. | 2010 | Sierra Leone's former child soldiers: A longitudinal study of risk, protective factors, and mental health | J Am Acad Child Adolesc Psychiatry | West Africa |
| 2 | Betancourt et al. | 2011 | Sierra Leone's child soldiers: War exposures and mental health problems by gender | J Adolesc Health | West Africa |
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| 5 | Kaminer & Eagle | 2010 | Legacy of apartheid: PTSD in South African adults | S Afr Med J | Southern Africa |
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| 17 | Teicher et al. | 2016 | Sticks, stones and hurtful words: The relative impacts of various forms of childhood maltreatment | Am J Psychiatry | Global |
| 18 | Dube et al. | 2003 | Childhood abuse, neglect and household dysfunction and the risk of illicit drug use | Pediatrics | Global |
| 19 | Dube et al. | 2005 | Long-term consequences of childhood sexual abuse by gender of the victim | Am J Prev Med | Global |
| 20 | Anda et al. | 1999 | ACEs and smoking in adolescence and adulthood | JAMA | Global |
| 21 | Felitti et al. | 1998 | The ACE Study: Childhood abuse, household dysfunction and leading causes of death | Am J Prev Med | Global |
| 22 | Anda et al. | 2006 | Enduring effects of childhood abuse: Neurobiology and epidemiology evidence | Eur Arch Psychiatry Clin Neurosci | Global |
| 23 | Mullen et al. | 1996 | Long-term impact of childhood abuse | Child Abuse Negl | Global |
| 24 | Finkelhor | 1995 | Victimization of children: A developmental perspective | Am J Orthopsychiatry | Global |
| 25 | Costello et al. | 2002 | Prevalence of potentially traumatic events in youth | J Trauma Stress | Global |
| 26 | Breslau et al. | 1991 | PTSD in urban young adults | Arch Gen Psychiatry | Global |



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| 27 | Turner et al. | 1995 | Epidemiology of social stress | Am Sociol Rev | Global |
| 28 | Turner & Lloyd | 1999 | The stress process and the social distribution of depression | J Health Soc Behav | Global |
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| 35 | Quinn et al. | 2018 | Adapting ACE-IQ for cultural competency across African settings | Int J Public Health | Global |
| 36 | Rahman et al. | 2009 | Young rural Pakistani women and depression prevalence | J Affect Disord | Pakistan |
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| 39 | Merrick et al. | 2017 | Unpacking the impact of ACEs on adult mental health | Child Abuse Negl | Global |
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| 41 | Varese et al. | 2012 | ACEs and psychosis risk across heritage environments | Schizophr Bull | Global |
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| 51 | Wells et al. | 2014 | The Newcastle–Ottawa Scale for assessing quality of non-randomized studies | Ottawa Hosp Res Inst | Global |
| 52 | Boateng et al. | 2022 | Cultural practices, parental absence and ACEs across heritage environments | Afr J Child Health | Africa |
| 53 | Kaminer et al. | 2012 | Trauma and spirituality: A southern African heritage context | S Afr J Psychol | Southern Africa |
| 54 | Phasha & de Klerk | 2021 | Men and traditional initiation rituals in South Africa | Cult Psychol | Southern Africa |
| 55 | Akello et al. | 2016 | PTSD and long-term impacts of child soldiering in northern Uganda | Afr Health Sci | East Africa |
| 56 | Riley et al. | 2022 | Building resilience through heritage practices in rural Kenya | Int J Disaster Risk Reduct | Kenya |
| 57 | Ojukwu & Eze | 2023 | Healing trauma through traditional practices in rural Igbo communities | J Ethnobiol Ethnomed | Nigeria |
| 58 | Tandon et al. | 2021 | ACEs and intergenerational trauma across heritage environments in Cameroon | Trauma Med | Central Africa |
| 59 | Nantulya et al. | 2024 | PTSD and ACE exposure among adolescents in rural Uganda | BMC Psychiatry | East Africa |



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| 60 | Jones & McClure | 2023 | ACEs and behavioral outcomes in peri-urban Tanzania | Glob Public Health | Tanzania |
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