International Journal of Multidisciplinary Research and Growth Evaluation.

Women and Children: The Most Vulnerable IDP Populations in Sudan

Yazeed A Hamoud
PhD Candidate: University for Peace, Somali Programme, Somalia

* Corresponding Author: **Yazeed A Hamoud**

Article Info

ISSN (online): 2582-7138
Volume: 06
Issue: 02
March-April 2025
Received: 26-01-2025
Accepted: 24-02-2025
Page No: 571-580

Abstract
Objective: This research study examines the various challenges faced by internally displaced persons (IDPs) in Sudan, focusing on women and children because they are the groups that are disproportionately affected by conflict and displacement.
Methods: Using a mixed-methods design, this study combines qualitative interviews involving 100 displaced individuals and key informants with quantitative analyses of secondary data from humanitarian agencies and United Nations (UN) reports. Key informants include healthcare providers, educators, and local non- governmental organization (NGO) representatives. The investigation identifies significant challenges in educational opportunities, healthcare access, and protection from violence. The qualitative data provided in-depth, narrative evidence of individual and communal struggles.
Results: The quantitative analysis revealed that less than 30% of displaced women had regular access to reproductive health services. In addition, formal education enrollment for displaced children dropped below 50%. Gender-based violence cases were alarming since 40% of women reported incidents of physical or sexual abuse since their displacement.
Conclusion: The study discusses the implications of these systematic barriers and offers evidence for the urgent need for targeted interventions, policy reforms, and enhanced humanitarian responses to mitigate the adverse impacts of prolonged conflict. Besides, it offers recommendations, such as increasing access to healthcare services, implementing alternative educational models, and strengthening protection measures to support women and children. This article improves our understanding of the challenges faced by Sudanese IDPs and highlights the significance of developing tailored humanitarian responses and long-term post-conflict recovery strategies.

DOI: https://doi.org/10.54660/.IJMRGE.2025.6.2.571-580

Keywords: Internally displaced persons (IDPs), women and children, healthcare access, Sudan conflict, education, protection from violence, humanitarian crisis, and gender-based violence

Introduction

Sudan has experienced conflict for many years. According to Liyew (2025) [21], Sudan has been in conflict because of ethnic diversity mismanagement and colonial legacies that promoted tensions, particularly between the predominantly Arab-dominated north and the African south. He further emphasized that the current conflict began on April 15, 2023, primarily between the Sudanese Armed Forces (SAF) and the Rapid Support Forces (RSF). The conflict has led to widespread destruction of infrastructure and displacement of human populations, including entire communities forced to run away from their homes, causing a significant increase in the number of internally displaced persons (IDPs) (Ghebremeskel, 2023) [11]. The displacement has strained resources and overwhelmed the local infrastructure network. The conflict has weakened Sudan's institutional framework and the security of the Horn of Africa (Liyew, 2024) [20]. Besides, it has eroded critical social services, like healthcare, education, and public safety, due to underfunding, mismanagement, and diversion of resources toward military activities. The breakdown of social and governmental structures makes supporting and rebuilding communities impacted by the conflict

challenging. The humanitarian crisis in Sudan is evident based on the living conditions of IDPs. Many IDPs live in overcrowded camps or urban settlements that often lack basic amenities (Hassan *et al*, 2025) [14]. Their living conditions are characterized by inadequate shelter, poor sanitation, and limited access to clean water. IDPs find it challenging to access critical services like healthcare facilities, educational opportunities, and public protection, leaving them vulnerable to further harm. Inadequate or lack of access to reliable public services contributes to their long-term suffering, including physical and mental health problems (Ali *et al*, 2024) [1]. The challenges IDP populations face are complex and dynamic. While some benefit from continuous humanitarian aid, others are isolated and under-resourced. As of December 31, 2023, there were about 9.05 million IDPs in Sudan, making up approximately 13% of the international IDP population (Khalil *et al*, 2024) [1]. Urban IDPs may have access to better services but still face challenges such as discrimination, exploitation, and integration issues in cities. The IDP crisis and dynamics make adopting tailored strategies in humanitarian planning and policy interventions necessary.

Among IDPs, women and children are the most vulnerable due to their increased risk of gender-based violence, exploitation, disrupted educational opportunities, and inadequate child and maternal healthcare services. Women within IDP populations are exposed to increased risk of gender-based violence, like physical and sexual abuse (Hassan, 2024) [13]. Their inadequate or lack of protection in conflict zones often leaves them exposed to exploitation by various armed groups and opportunistic perpetrators. Additionally, displacement disrupts children's schooling and prevents them from continuing their education (Mayai, 2025) [24]. The challenges adversely impact children's cognitive development, reduce their future employment opportunities, and enhance their likelihood of exploitation. The education gap fosters cycles of marginalization and poverty among the younger population. Besides, limited access to maternal health services puts pregnant women at risk of complications (Miskeen, 2024). Inadequate nutrition and medical care put children at increased risk of preventable diseases. The population's lack of specialized healthcare further increases their vulnerabilities and negatively impacts their long-term health outcomes. Women and children's lack of social support and limited capacity for self-advocacy and economic means to recover from internal displacement leaves them dependent on external aid and exposes them to opportunistic perpetrators.

Research Objectives

1. **Assess healthcare deficits:** To evaluate the extent of healthcare inadequacies, including the availability of medical facilities, essential medicines, and maternal health services among IDP populations.
2. **Examine educational disruptions:** To analyze the impact of conflict on educational opportunities, particularly the interruptions in schooling and the quality of informal education available to displaced children.
3. **Investigate exposure to violence:** To document the prevalence and forms of gender- based violence and child exploitation within IDP communities, identifying factors that contribute to these abuses.
4. **Analyze intersectoral interplay:** To examine how deficiencies in healthcare, education, and public protection services interact and reinforce each other, increasing the overall vulnerability of women and children.
5. **Develop actionable recommendations:** To propose evidence-based policy reforms and humanitarian interventions to mitigate these vulnerabilities, focusing on sustainable, multi-sectoral strategies.

The problem statements

The protracted conflict in Sudan has caused one of the most severe humanitarian crises in recent decades. It has forced millions of individuals to abandon their homes and livelihoods. The widespread displacement has overwhelmed local communities and humanitarian organizations due to their limited resources. Besides, the conflict prevents the government from delivering essential services like healthcare, education, and public safety. These systematic inadequacies directly impact the most vulnerable populations, displaced women and children. Limited access to maternal and child health services increases their morbidity and mortality rates. Women's lack of access to reproductive health services makes them vulnerable to complications. Displacement interrupts children's schooling and prevents them from attending the formal education system.

Disrupting children's education undermines their social and cognitive development, including future access to work and job opportunities. Living in a chaotic and insecure environment exposes women and children to various forms of violence, such as physical, sexual, and emotional abuse. Women often suffer from gender-based violence, while children are at increased risk of exploitation and trafficking. Their limited access to healthcare, education, and protection services limits their ability to recover from displacement and exposes them to cycles of poverty and marginalization. This research study seeks to understand the specific challenges that worsen the vulnerabilities of women and children among Sudan's IDP populations and to propose targeted, evidence-based interventions that can address the adverse effects of healthcare deficits, educational disruptions, and protection failures.

Literature Review

Previous research studies have examined the severe hardships caused by conflict-induced displacements (Jefer *et al*, 2022; Bohnet *et al*, 2021) [3]. Studies show how the loss of livelihoods and breakdown of infrastructure and public services, such as healthcare, education, and security, negatively impact the living conditions of affected populations (Daodu *et al*, 2024; Ekezie *et al*, 2022) [5, 7]. Prolonged conflict leads individuals to lose their sources of income (Weldegiargis *et al*, 2023; Le *et al*, 2022) [33, 19]. Besides, it damages infrastructure (Luo *et al*, 2022), leaving IDPs with inadequate shelter, sanitation, and access to critical resources. Displacement disrupts daily life and adversely affects individuals' socio-economic conditions (Tesfaw, 2022) [32]. While existing literature provides valuable insights into the general displacement conditions, they often treat IDPs as a single, homogenous group (Elmukashfi *et al*, 2025; Elyas *et al*, 2024) [9, 10]. The studies usually overlook their subgroup-specific challenges, particularly those based on age and gender or affecting women and children. The combined dimensions of age and gender can lead to unique challenges beyond the sum of individual factors.

Recent studies emphasize that women and children are disproportionately affected by displacement (Hazer & Gredeback, 2023; Bendavid *et al*, 2021) [15, 2]. Displaced women often face an increased risk of gender-based violence, including physical and sexual abuse (Tadesse *et al*, 2024) [31]. Besides, they have inadequate access to reproductive healthcare, thus exposing them to a higher risk of

complications (Sawadogo *et al*, 2023) [30]. Limited access to maternal and child health services exposes women and children to higher morbidity and mortality rates (Mohamed *et al*, 2021) [23]. Weakened social structures, erosion of legal protections, and economic dependency in conflict settings promote these vulnerabilities among women. Research on children highlights how displacement disrupts their formal schooling and education (Ogunode *et al*, 2022) [25]. Losing formal education limits children's social and cognitive development and undermines their learning opportunities and future economic prospects (Burgin *et al*, 2022). The psychological stress and trauma associated with displacement promote these vulnerabilities and expose children to cycles of poverty. Despite these research findings, comprehensive studies that integrate gender and age aspects within the specific context of Sudan remain limited.

While several studies describe the general vulnerabilities of IDPs, few have provided a detailed examination of how systematic inadequacies in healthcare, education, and protection intersect to worsen these vulnerabilities for women and children, specifically in Sudan (Elamin *et al*, 2024; Gunawan *et al*, 2024; Saleh *et al*, 2024; Sapre & Singh, 2024; Khogali & Homeida, 2023) [8, 12, 29, 18]. Existing research often fails to differentiate between the experiences of various subgroups within the IDP population (Pham *et al*, 2023) [27]. Therefore, the unique challenges that internally displaced women and children face, such as limited healthcare services, disrupted education, and exposure to violence, require further investigation. While global trends offer essential insights, there is a critical need for research that quantifies and contextualizes the vulnerabilities within the socio-political and cultural context of Sudan's conflict environment. Context-specific studies can identify tailored, evidence-based intervention strategies that are more effective in addressing these vulnerabilities (Samuel *et al*, 2024) [28]. This gap in the literature underscores the importance of this study, which aims to provide a detailed analysis of how these systemic inadequacies expose displaced women and children in Sudan to vulnerabilities.

Previous literature in this study area used either qualitative or quantitative methods.

Qualitative research provides a comprehensive examination of individual experiences, but it may lack the generalizability of quantitative research (Oranga & Matere, 2023) [26]. Quantitative studies offer statistical evidence of trends and patterns but may overlook the contextual subtleties that qualitative studies can reveal (Zyoud *et al*, 2024) [34]. Using a single methodological approach can limit the scope and depth of the study findings. Qualitative methodology may not examine the breadth of data needed to generalize findings, while the quantitative method might ignore contextual subtleties. This research study differentiates itself by combining qualitative and quantitative methods. An integrated mixed-methods approach ensures an in-depth analysis of the various research issues, providing comprehensive statistical evidence and detailed narrative insights (Dawadi *et al*, 2021) [6]. This study's methodological triangulation promotes the validity of the findings by allowing for cross-verification between different data sources. This innovative methodological approach will bridge existing gaps in the literature regarding the challenges faced by displaced women and children in Sudan.

Research Hypothesis

This study is grounded in the hypothesis that systematic inadequacies in healthcare, education, and protection services significantly contribute to the increased vulnerability of women and children among Sudan's internally displaced populations.

Method

Research Design

This study used a mixed-methods design combining qualitative and quantitative methods to comprehensively understand the challenges displaced women and children face in conflict- affected Sudan. The integrated research design ensures that qualitative and quantitative data are collected concurrently, analyzed separately, and combined to compare and contrast findings, facilitating an in-depth understanding of the research problem. The data offer complementary insights into the research problem by examining the subjective experiences and statistical trends, thus enhancing the validity and reliability of the conclusion. Qualitative data collection involved semi-structured interviews with diverse participants, such as displaced women, adolescent girls and boys, healthcare workers, and education sector representatives. It documented their in-depth narratives, experiences, and perceptions regarding access to healthcare, education, and protection from violence. Purposive sampling was employed to select participants directly affected by the conflict, ensuring they had first-hand experience and insights into healthcare access, educational disruptions, and protection from violence. Quantitative data collection involved compiling secondary data from humanitarian agencies, UN reports, and local NGOs. It quantified key issues such as the percentage of women with access to reproductive health services, school enrollment rates for displaced children, and incidences of gender-based violence. Combining narrative insights with numerical evidence promotes an in-depth understanding of the vulnerabilities experienced by women and children. Cross-validation between qualitative and quantitative data enhanced the credibility and depth of the research findings.

Data Collection

Qualitative data collection involved using semi-structured interviews with guided questions and open-ended responses to address primary topics and ensure flexibility when examining emerging themes related to the participants' experiences with healthcare, access to education, and exposure to violence. Besides, the participants shared insights on social dynamics, including community support systems, the role of local NGOs, and their coping strategies in the face of adversity. One hundred in-depth interviews were conducted in safe and accessible settings for all the participants. They included designated community centers within IDP camps and local facilities in urban settlements. The interviews were conducted in the participants' preferred languages. Besides, translators were available when necessary to ensure clarity and accuracy in communication. Each interview lasted between 45 and 60 minutes. The interview sessions were audio-recorded after obtaining the participants' consent to ensure accurate transcription and data analysis. Regarding ethical considerations, all the participants provided informed consent before participating in the interviews. They were assured that their responses would be kept confidential and only used for research purposes. Sensitive topics like personal experiences with violence and trauma were handled with empathy and discretion. Pseudonyms and secure data storage measures were used to protect participants' identities. Participation was voluntary since participants had a right to withdraw from the study at any point without facing any consequences. Qualitative data collection provided in-depth insights into the

experiences of displaced women and children in conflict-affected Sudan.

The study's quantitative data was collected using secondary data from reports published by international humanitarian agencies, UN bodies, and local NGOs documenting the displaced individuals' demographics, healthcare access, educational enrollment, and incidences of violence. Statistics on healthcare services, violence cases, and IDP demographics were accessed from international humanitarian agencies like the International Organization for Migration (IOM) and Médecins Sans Frontières (MSF). Data from the United Nations High Commissioner for Refugees (UNHCR) and UN Women provided valuable and detailed insights into gender-specific challenges and displacement figures, including those related to healthcare access and educational enrollment. Moreover, local NGOs provided reports and surveys that described community-level observations, educational participation rates, and service availability among displaced populations. The secondary data was obtained from the organizations' published reports, online databases, and official statistical bulletins. They included data on population demographics, healthcare service usage, enrollment rates in formal and informal education, and documented cases of gender-based violence. The collected data covered several years to ensure a comprehensive analysis of trends and help understand how conflict impacts service access and social vulnerabilities. Secondary data were critically evaluated for reliability and validity. Cross- referencing data sources ensured the consistency of the data. Obtaining detailed secondary data from reputable sources ensures that the quantitative data collection method offers vital numerical evidence that complements the insights obtained from qualitative interviews.

Participants

The participants included displaced women, adolescent girls and boys, local healthcare workers, and education sector representatives. Women were selected to participate in this study to help examine gender-specific challenges, such as access to reproductive healthcare and exposure to gender-based violence in both refugee camps and urban centers. The study included adolescent girls and boys to assess the impact of displacement on children's education and social development. Their experiences highlight the interruption of schooling and the psychological effects of conflict. Local healthcare workers engaged in this study to identify systemic healthcare challenges facing displaced women and children. Their observations helped document the gaps in medical services. In addition, education sector representatives provided important information on the status of educational infrastructure and the efforts (or lack thereof) to maintain schooling for displaced children. Their perspectives helped in understanding how displacement promotes educational disruptions. Purposive sampling was used to select the participants to ensure that the study only included those individuals most affected by the conflict and displacement. It helped identify those who could give detailed and essential insights into the challenges of accessing healthcare, education, and public protection services. The inclusion criteria involved direct experience of displacement due to conflict, residency in either IDP camps or urban settlements within conflict zones, and belonging to a vulnerable group, such as women, adolescent girls and boys, or those working in local healthcare and education sectors. The participants ensured a representative sample of the vulnerable populations affected by the ongoing conflict in Sudan.

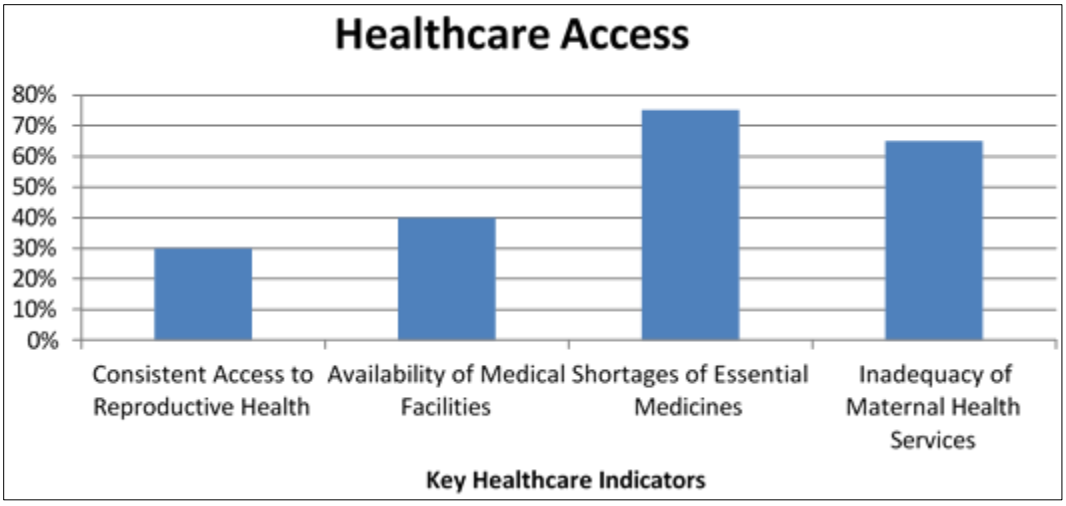
Analysis Methods

The qualitative data were thematically analyzed to document recurring themes related to vulnerability, while quantitative data were passed through descriptive and inferential statistical analysis to identify trends and correlations between access to services and reported violence cases. Qualitative data from interviews were transcribed and coded systematically using thematic analysis. The process involved reading through the transcripts several times to identify and categorize recurring phrases, patterns, and ideas related to vulnerability, healthcare access, education, and exposure to violence. Conversely, descriptive statistics were used to analyze the secondary data and summarize the key metrics. It involved calculating frequencies, percentages, and mean values to identify service access, educational enrollment, and incidents of gender- based violence among displaced women and children in Sudan. Inferential statistical methods, such as correlation analysis and regression modeling, were used to examine the relationships and test the study hypothesis. The techniques assessed how deficiencies in healthcare and education correlated with increased incidences of violence. Besides, the study analyzed longitudinal data to identify trends in the data. The analysis documented various changes in service accessibility and incidences of violence, including the displaced populations' vulnerabilities. Using triangulation to compare the qualitative insights and quantitative data helped validate the study findings and understand how systemic inadequacies in healthcare access, education, and protection create vulnerabilities for women and children. For instance, participants' narratives describing challenges in accessing medical services supported statistical trends showing low healthcare access. This mixed-methods data analysis process ensured a comprehensive examination of qualitative and quantitative data and enhanced the study's validity.

Results

The study's findings underscore several critical challenges faced by displaced women and children in conflict-affected regions of Sudan. There are limited permanent medical facilities in the IDP camps and urban settlements. The temporary clinics and mobile health units serving the large displaced populations are inadequate to meet their needs. The remote location of many IDP camps and traveling over unsafe or poorly maintained roads make it challenging to access existing healthcare facilities. The ongoing conflict frequently disrupts supply chains, creating a shortage of essential medicines, including life-saving drugs and routine treatments. Quantitative analysis showed that less than 30% of displaced women had consistent access to reproductive healthcare services, like prenatal and postnatal care. Only 40% of camps and urban settlements have medical facilities, 75% of surveyed locations lacked essential medicines, and 65% of women lacked adequate maternal health services, such as emergency obstetric care and skilled birth attendants. Longitudinal data indicate that the challenges in accessing healthcare services have persisted for a long time, particularly during escalations in conflict and displacement.

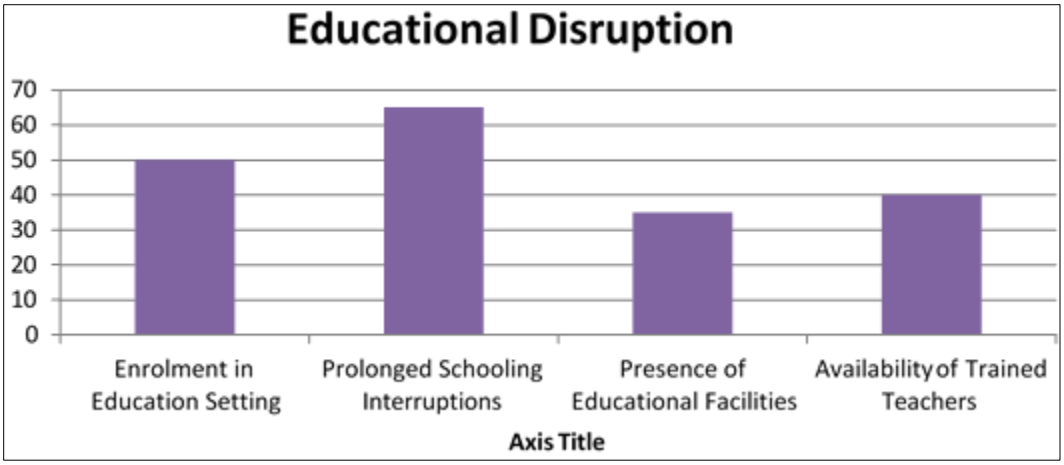
Limited access to healthcare has affected women's and children's well-being, increasing their morbidity and mortality. Insufficient medical care promotes long-term health disparities.



Source: Appendix A (Table 1)

Fig 1: Key healthcare indicators among displaced women and children in Sudan

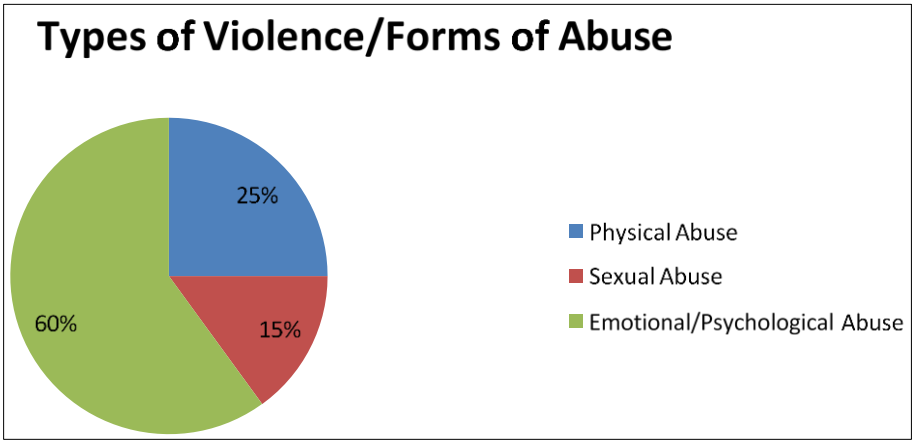
Many displaced children experienced prolonged interruptions in schooling, negatively affecting their cognitive and social development. Research data indicate that enrollment rates in formal and informal education settings dropped below 50%, underscoring the magnitude of the disruption. The low enrolment is because the conflict interrupted the schooling of about 65% of children in the IDP camps. Structural educational barriers included insufficient infrastructure and a lack of trained teachers. Only 35% of IDP camps have established learning centers. Many IDP camps lack proper school buildings. They often have makeshift classrooms that create an unconducive learning environment. The scarcity of educational materials, such as textbooks and learning aids, further enhances the challenges displaced children face. Besides, the shortage of trained teachers in conflict-affected areas prevents the delivery of quality education. Less than 40% of IDP camps have trained teachers. However, the available teachers have limited training and professional development opportunities, thus making it challenging to promote educational programs. The absence of formal schools has led the local NGOs and community groups to establish informal educational centers. However, these centers struggle with limited funding, resources, and trained personnel. Some local NGOs and community groups have tried to establish digital and remote learning in displaced settings but face challenges such as lack of electricity, internet access, and digital devices. The disruptions in education have negatively impacted children's learning outcomes.



Source: Appendix A (Table 2)

Fig 2: Educational enrollment and infrastructure indicators among displaced women and children in Sudan

The study documented high incidences of gender-based violence, including physical and sexual abuse. Quantitative analysis established that about 40% of displaced women experienced violence, ranging from physical abuse (25%) to sexual abuse (15%). The largest proportion of abuse is categorized as others, such as emotional and psychological abuse (60%). Pregnant women and single mothers are the most vulnerable groups to abuse. Physical violence or abuse often occurs in cramped living conditions with limited privacy and safety. Lack of adequate legal protections and breakdown of community structures have contributed to the increased cases of sexual violence, like assault and harassment. Disrupted family structures and lack of protective oversight put displaced children at increased risk of exploitation. Child trafficking cases have increased based on the growing number of children forced into sexual exploitation, labor, or recruited by armed groups. Continuous exposure to violence and exploitation affects children's psychological well-being and leads them to develop trauma, impaired social development, and anxiety. In addition, there is a correlation between areas with limited access to healthcare and education and violence. Protection from violence is essential to improve the lives of displaced women and children in conflict-affected Sudan.



Source: Appendix A (Table 3)

Fig 3: Forms of abuse (reported incidences) among displaced women and children in Sudan

Discussion

The analysis established that the intersection of gender and age significantly increases the vulnerabilities of displaced populations in Sudan. Systemic inequalities already put displaced women and children at a disadvantage, making their limited access to health, education, and protection exacerbate their vulnerabilities. Women's limited access to reproductive health services makes it necessary to provide them with gender-sensitive interventions. Additionally, children face developmental issues and exploitation risks that can negatively impact their health and well-being. Limited access to medical facilities, shortages of essential medicines, and inadequate maternal health services expose women and children to poor health outcomes. This systematic gap is evidenced by the data that shows that less than 30% of displaced women have consistent access to reproductive healthcare. Poor health outcomes are linked with higher maternal and infant mortality rates, chronic health conditions, and reduced quality of life.

Furthermore, prolonged interruptions in schooling severely limit children's educational attainment, based on their enrollment rate of below 50%. The disruption undermines their academic progress and social and cognitive development. Since education is a key determinant of future employment and socio-economic mobility, the lack of educational opportunities promotes poverty cycles and limits displaced populations from rebuilding their lives and ensuring long-term societal recovery. Besides, the data indicating that about 40% of displaced women have experienced physical and sexual violence underscores the rise of insecurity within IDP communities in Sudan. The breakdown of law and order and the lack of legal and social protection in conflict zones increase the risk of violence against vulnerable populations.

The study findings are consistent with previous research on displacement resulting from conflict since they document the disproportionate impact of war on vulnerable populations such as women and children. They highlight the challenges displaced groups face in conflict settings. This research study promotes the existing literature by providing a detailed analysis of conflict- induced challenges specific to women and children in Sudan's internally displaced populations. It offers a comprehensive account of intersecting vulnerabilities in daily life, including unique challenges and the urgent need for interventions specific to impacted groups. In addition, this study has limitations and future research directions. Conducting research in conflict zones presents significant logistical challenges, including safety concerns and access to reliable data. Reliance on self-reported experiences may introduce biases, which is a notable limitation of this study. Future research should focus on longitudinal designs to track the impact of targeted interventions within a specific period. Such studies would help understand the long-term effectiveness of policy changes and humanitarian efforts to mitigate vulnerabilities. The discussion makes integrating healthcare, education, and public protection strategies essential.

Multi-sectoral interventions could provide more sustainable solutions to the challenges faced by displaced women and children.

Acknowledgement

The author gratefully acknowledges the support of local NGOs and humanitarian agencies for facilitating data collection and the insights provided by participants in the IDP communities. Special thanks are also extended to the faculty of the University for Peace, Somali Programme, for their mentorship and guidance throughout this research

Conclusion

The research demonstrates that displaced women and children in Sudan face significant challenges that limit their access to critical services such as healthcare, education, and protection. The analysis revealed that there are severe deficiencies in healthcare services due to inadequate medical facilities and reproductive healthcare. In addition, there are substantial disruptions in education and high incidences of gender-based violence. Systemic inadequacies in humanitarian response and local infrastructure worsen these challenges and increase the vulnerabilities of the impacted populations. The convergent analysis of qualitative narratives and quantitative data underscores that these challenges are not isolated but are interconnected, affecting the overall well-being of the affected communities. Addressing these issues requires an integrated approach that combines immediate humanitarian aid with long-term policy reforms. Organizations offering humanitarian aid should prioritize delivering essential healthcare services like mobile clinics and emergency reproductive health care to address the shortages of medical facilities and necessary medicines. Besides, establishing safe shelters, legal support systems, and community policing could reduce the risk of abuse and exploitation of displaced women and children. Policy reforms should focus on increasing investment in healthcare and education infrastructure and supporting programs sensitive to the unique needs of women and children in conflict settings. Local authorities, international organizations, community leaders, and NGOs should partner to develop detailed

strategies that combine immediate relief with long-term development objectives. This study's findings provide a foundation for conducting further research on conflict induced displacement and offer recommendations to improve the lives of the most vulnerable populations in conflict affected Sudan.

Appendices

Appendix A: Statistical Tables

Healthcare Access

Table 1: Key Healthcare Indicators among Displaced Women

Indicator	Value/Percentage
Consistent access to reproductive health	<30%
Availability of medical facilities	Limited; 40% of camps have basic clinics.
Shortages of essential medicines	Reported in 75% of surveyed locations
Adequacy of maternal health services	Inadequate: 65% of women reported challenges.

Note: Percentages are based on quantitative analysis of secondary data and survey responses from humanitarian reports.

Educational Disruption

Table 2: Educational Enrollment and Infrastructure Indicators

Indicator	Value/Percentage
Enrollment in informal education settings	<50%
Prolonged schooling interruptions	Reported in 65% of displaced children
Presence of educational facilities	Only 35% of IDP sites have established learning centers.
Availability of trained teachers	Less than 40% of available centers

Protection from violence

Table 3: Incidence of Violence and Exploitation among Displaced Populations

Indicator	Value/Percentage
Displaced women experiencing violence	About 40%
Types of violence (reported incidences): ▪ Physical abuse ▪ Sexual abuse ▪ Other forms (emotional abuse, etc.)	 25% 15% 60%
Exposure of children to exploitation	Alarming trend; qualitative narratives suggest widespread risk (no precise % available)

Appendix B: Interview protocol, interview questions, consent form, and questionnaire

1) Interview Protocol

a) Greetings and Introduction:

"Hello, my name is [Interviewer's Name]. Thank you for agreeing to participate in this interview. I am a PhD candidate at the University for Peace, Somali Programme, and this study aims to understand the challenges faced by displaced women and children in
Sudan."

b) Purpose of the Interview:

"The purpose of this interview is to gather your experiences and insights regarding access to healthcare, education, and protection from violence as an internally displaced person.
Your personal experiences will help inform policy recommendations and targeted interventions to improve conditions in IDP communities."

c) Confidentiality Assurance:

"Please note that your responses will be kept confidential. Your identity will be anonymized in any reports or publications from this study. No personal identifiers will be recorded."

d) Voluntary Participation:

"Participation in this interview is completely voluntary. You are free to skip any question or stop the interview at any time without any consequences."

e) Consent to Record:

"With your permission, I would like to record this interview to ensure accurate documentation of your responses. The recording will be securely stored and only accessed by the research team."

f) Estimated Duration:

"The interview is expected to last approximately 45-60 minutes."

2) Interview Questions

Section 1: Background and Context

- Can you please tell me a bit about yourself and your current living situation?
- How long have you been displaced, and what has been your experience since displacement?

Section 2: Healthcare Access

- Can you describe your experiences with accessing healthcare services in your current location?
- What challenges have you faced in obtaining maternal or reproductive healthcare?
- Have you experienced any difficulties in receiving regular or emergency medical care?

Section 3: Educational Disruption

- For participants with children: How has displacement affected your children's education?
- What are the primary obstacles to accessing formal or informal education in your area?
- Can you share any examples of how the lack of educational opportunities has impacted your family?

Section 4: Protection from Violence

- Have you or someone you know experienced violence or exploitation since displacement?
- Can you describe the types of violence (physical, sexual, emotional) you have encountered or witnessed?
- What protection mechanisms are currently in place, and how effective do you find them?

Section 5: Suggestions for Improvement

- In your view, what measures could be implemented to improve access to healthcare and education for displaced populations?
- What kind of support or interventions do you think would be most beneficial in enhancing safety and protection for women and children in your community?

Closing

- "Thank you for sharing your experiences. Is there anything else you would like to add or any other challenges you feel are important to mention?"
- "Do you have any questions or concerns about this interview or the study in general?"

3) Consent Form

Study Title:

Women and Children: The Most Vulnerable IDP Populations in Sudan

Researcher:

[Your Name], UPEACE: PhD Candidate, University for Peace, Somali Programme

Purpose of the Study:

This study aims to explore the challenges faced by displaced women and children in accessing healthcare, education, and protection from violence. Your participation will provide valuable insights to inform policy recommendations and humanitarian interventions.

Procedures:

If you agree to participate, you will be asked to take part in an in-depth interview lasting approximately 45-60 minutes. The interview will cover topics related to your personal experiences with healthcare, education, and protection services. The interview will be audio- recorded with your permission to ensure accurate data collection.

Voluntary Participation:

Your participation is entirely voluntary. You may choose not to answer any questions that make you uncomfortable, and you may withdraw from the interview at any time without any negative consequences.

Confidentiality:

All information provided during the interview will be kept strictly confidential. Your identity will be anonymized in all research reports and publications. The audio recordings and transcripts will be securely stored and only accessible to the research team.

Potential Risks:

Discussing personal experiences, especially those related to violence or trauma, might cause discomfort. Should you feel distressed, you can pause or stop the interview. Additionally, referrals to counseling services can be provided if needed.

Benefits:

While there may be no direct benefit to you, your participation will contribute to a better understanding of the challenges displaced populations face in Sudan and could help shape future humanitarian interventions and policy reforms.

Consent to Record:

Do you consent to have this interview audio-recorded?

[_] Yes [_] No

Consent Statement:

By signing below, you confirm that you have read and understood the information provided above, have had the opportunity to ask questions, and voluntarily agree to participate in this study. You also acknowledge that you have received a copy of this consent form.

Participant's Signature: _ Date: ___ Researcher's Signature: _____ Date:

4. Questionnaire: Vulnerabilities of Displaced Populations in Sudan

Section A: Demographic Information

1. **Respondent ID: ____**
2. **Age:**
   - Under 15
   - 15-24
   - 25-34
   - 35-44
   - 45 and above
3. **Gender**:
   - Female
   - Male
   - Other (please specify):
4. **Location Type:**
   - IDP Camp
   - Urban Settlement
5. **Marital Status:**
   - Single Married
   - Divorced/Widowed

Section B: Healthcare Access

6. **In your current location, do you have access to any healthcare facility?**
   - Yes
   - No
7. **If yes, what type of facility do you primarily use? (Select all that apply)**
   - Permanent clinic/hospital
   - Mobile health unit
   - NGO-operated health center
   - Other (please specify):
8. **Do you have consistent access to reproductive and maternal healthcare services?**
   - Yes
   - No
   - Not applicable (if under 15)
9. **Have you experienced any issues with obtaining essential medicines?**
   - Yes
   - No

If yes, please briefly describe: _____

Section C: Educational Disruption

10. **For respondents who are children or have children in your care:**

Are you (or your child) currently enrolled in any educational program?

- Yes
- No
- Not applicable

11. **If not enrolled, what is the primary reason?** (Select all that apply)
    - Lack of educational facilities
    - No trained teachers
    - Family displacement/mobility
    - Financial constraints
    - Safety concerns
    - Other (please specify): ___
12. **How long has the disruption in your (or your child's) education been?**
    - Less than 6 months
    - 6 months – 1 year
    - 1-2 years

- More than 2 years

Section D: Protection from Violence

13. **Have you or someone you know experienced any form of violence since displacement?**
    - Yes
    - No
14. **If yes, please indicate the types of violence experienced.** (Select all that apply)
    - Physical abuse
    - Sexual abuse
    - Emotional/psychological abuse
    - Exploitation or trafficking
    - Other (please specify): ___
15. **In your opinion, how effective are the current protection mechanisms (e.g., security, community watch, legal support) in your area?**
    - Very effective
    - Somewhat effective
    - Not effective
    - Not sure

Section E: Open-ended questions

16. **Please describe any challenges you face when accessing healthcare services:**

17. **If you are (or have children who are) affected by educational disruptions, please explain the impact on daily life and future opportunities:**

18. **What additional measures do you believe are needed to improve protection from violence for women and children in your community?**

19. **Any other comments or suggestions regarding the services and support provided in your current location:**

References

1. Ali AMA, Adam OAM, Salem SEM, Hamad SHI, Ahmed NEM, Ali HMA, *et al* Prevalence of physical and mental health problems among internally displaced persons in White Nile state, Sudan 2023: A cross-sectional study. BMC Public Health. 2024;24(1):3448:1–15. doi:10.1186/s12889-024-20972-1.
2. Bendavid E, Boerma T, Akseer N, Langer A, Malembaka EB, Okiro EA, *et al* The effects of armed conflict on the health of women and children. Lancet. 2021;397(10273):522–32. doi:10.1016/S0140-6736(21)00131-8.
3. Bohnet H, Cottier F, Hug S. Conflict versus disaster-induced displacement: Similar or distinct implications for security? Civ Wars. 2021;23(4):493–519. doi:10.1080/13698249.2021.1963586.
4. Bürgin D, Anagnostopoulos D, Vitiello B, Sukale T, Schmid M, Fegert JM. Impact of war and forced displacement on children's mental health—multilevel, needs-oriented, and trauma-informed approaches. Eur Child Adolesc Psychiatry. 2022;31(6):845–53. doi:10.1007/s00787-022-01974-z.
5. Daodu FF, Shabu T, Kile TI, Enefu J. Humanitarian crises in internally displaced persons (IDPs) camps in Benue State, Nigeria: A comprehensive analysis. Int J Res Innov Soc Sci. 2024;8(5):2282–98. doi:10.47772/IJRISS.2024.805166.
6. Dawadi S, Shrestha S, Giri RA. Mixed-methods research: A discussion on its types, challenges, and criticisms. J Pract Stud Educ. 2021;2(2):25–36. doi:10.46809/jpse.v2i2.20.
7. Ekezie W, Siebert P, Timmons S, Murray RL, Bains M. Exploring the influence of health management processes on health outcomes among internally displaced persons (IDPs). J Migr Health. 2022;6:100124:1–9. doi:10.1016/j.jmh.2022.100124.
8. Elamin A, Abdullah S, ElAbbadi A, Abdellah A, Hakim A, Wagiallah N, *et al* Sudan: From a forgotten war to an abandoned healthcare system. BMJ Glob Health. 2024;9(10):e016406:1–7. doi:10.1136/bmjgh-2024-016406.
9. Elmukashfi ShamsEldin Elobied H, Ahmed BM, Ahmed BA, Salih ARH, Ahmed MM, Mahgoub MA, *et al* Healthcare accessibility, utilization, and quality of life among internally displaced people during the Sudan war: A cross-sectional study. Confl Health. 2025;19(1):11:1–12. doi:10.1186/s13031-025-00655-3.
10. Elyas HM, Hamid HTA, Arbab AH, Moukhtar OA, Abdelaziz MO. Prevalence of non-communicable diseases and access to healthcare among internally displaced people during the armed conflict, Northern State (Sudan). Risk Manag Healthc Policy. 2024;2493–501. doi:10.2147/RMHP.S484284.
11. Ghebremeskel A. Conflict and mediation in Sudan: The prospect of peace. Glob Change Peace Secur. 2023;35(2):97–110. doi:10.1080/14781158.2024.2390456.
12. Gunawan Y, Fernando D, Wardani RM, Arumbinang MH. The children rights violation in the conflict of Sudan: Government negligence. Sociol Jurisprud J. 2024;7(1):67–74. doi:10.22225/scj.7.1.2024.67-74.
13. Hassan IN. Violence against women and girls in Sudan's conflict zones. Lancet. 2024;404(10465):1807–8. doi:10.1016/S0140-6736(24)02284-0.
14. Hassan IN, Abuassa N, Ibrahim M. The Sudan conflict: A catalyst for the spread of infectious diseases in displaced populations. Int J Infect Dis. 2025;151:107326:1–3. doi:10.1016/j.ijid.2024.107326.
15. Hazer L, Gredebäck G. The effects of war, displacement, and trauma on child development. Humanit Soc Sci Commun. 2023;10(1):1–19. doi:10.1057/s41599-023-02438-8.
16. Jafer E, Imana G, Doda Z, Lemessa A. Post conflict-induced displacement: Human security challenges of internally displaced persons in Oromia Special Zone Surrounding Finfinne, Ethiopia. Cogent Soc Sci. 2022;8(1):2103252:1–20. doi:10.1080/23311886.2022.2103252.
17. Khalil KA, Mohammed GTF, Ahmed ABM, Alrawa SS, Elawad H, Almahal AA, *et al* War-related trauma and posttraumatic stress disorder in refugees, displaced, and non-displaced people during armed conflict in Sudan: A cross-sectional study. Confl Health. 2024;18(1):66:1–11. doi:10.1186/s13031-024-00627-z.
18. Khogali A, Homeida A. Impact of the 2023 armed conflict on Sudan's healthcare system. Public Health Challenges. 2023;2(4):e134:1–6. doi:10.1002/puh2.134.
19. Le TH, Bui MT, Uddin GS. Economic and social impacts of conflict: A cross-country analysis. Econ Model. 2022;115:105980:1–13. doi:10.1016/j.econmod.2022.105980.
20. Liyew EB. Sudan conflict impact on the Horn of Africa security. Insight Africa. 2024.

doi:10.1177/09750878241297264.
21. Liyew EB. The shattering impact of the Sudan conflict on regional stability. Afr Identities. 2025:1–16. doi:10.1080/14725843.2025.2473989.
22. Luo J, Wang G, Li G, Pesce G. Transport infrastructure connectivity and conflict resolution: A machine learning analysis. Neural Comput Appl. 2022;34(9):6585–6601. doi:10.1007/s00521-021-06015-5.
23. Mohamed AA, Bocher T, Magan MA, Omar A, Mutai O, Mohamoud SA, Omer M. Experiences from the field: A qualitative study exploring barriers to maternal and child health service utilization in IDP settings Somalia. Int J Women's Health. 2021:1147–60. doi:10.2147/IJWH.S330069.
24. Mayai AT. Political turmoil and human capital development: Refugee education in the Sudans. Sociol Soc Policy Educ. 2025:74–88. doi:10.4337/9781803928401.00011.
25. Ogunode NJ, Chijindu OE, Jegede D. Provision of education services for internally displaced persons in IDP camps in Nigeria: Challenges and the way forward. Int J Integr Educ. 2022;5(5):14–22. doi:10.31149/ijie.v5i5.3011.
26. Oranga J, Matere A. Qualitative research: Essence, types, and advantages. Open Access Libr J. 2023;10(12):1–9. doi:10.4236/oalib.1111001.
27. Pham PN, Johnston L, Keegan K, O'Mealia T, Diallo DY, Vinck P. Characterization of vulnerability of internally displaced persons in Burkina Faso, Mali, and Niger using respondent-driven sampling (RDS). J Refugee Stud. 2023;36(4):818–41. doi:10.1093/jrs/fead044
28. Samuel G, Hardcastle F, Lucassen A. Advocating for a context-specific approach to tackle inequities. Am J Bioeth. 2024;24(3):109–11. doi:10.1080/15265161.2024.2303168.
29. Sapre AA, Singh S. Between war and peace: Exploring the role of refugee law in the context of Sudan political conflict. Int Migr. 2024;62(4):41–56. doi:10.1111/imig.13278.
30. Sawadogo PM, Sia D, Onadja Y, Beogo I, Sangli G, Sawadogo N, *et al* Barriers and facilitators of access to sexual and reproductive health services among migrant, internally displaced, asylum-seeking and refugee women: A scoping review. PLoS One. 2023;18(9):1–19. doi:10.1371/journal.pone.0291486.
31. Tadesse G, Andualem F, Rtbey G, Nakie G, Takelle GM, Molla A, *et al* Gender-based violence and its determinants among refugees and internally displaced women in Africa: Systematic review and meta-analysis. BMC Public Health. 2024;24(1):2851:1–13. doi:10.1186/s12889-024-20329-8.
32. Tesfaw TA. Internal displacement in Ethiopia: A scoping review of its causes, trends, and consequences. J Intern Displacement. 2022;12(1):2–31. Available from: https://www.ajol.info/index.php/jid/article/view/265192/250260.
33. Weldegiargis AW, Abebe HT, Abraha HE, Abrha MM, Tesfay TB, Belay RE, *et al* Armed conflict and household food insecurity: Evidence from war-torn Tigray, Ethiopia. Confl Health. 2023;17(1):22:1–9. doi:10.1186/s13031-023-00520-1.
34. Zyoud MM, Bsharat TRK, Dweikat KA. Quantitative research methods: Maximizing benefits, addressing limitations, and advancing methodological frontiers. ISRG J Multidiscip Stud. 2024;11–4. doi:10.5281/zenodo.10939470.