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'This caused our journey': the relationship between sexual and gender-based violence and cross-border Sudan to South Sudan migration

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Abstract

Background Sexual and gender-based violence (SGBV) is a significant issue in the context of armed conflict and migration. The ongoing conflict in Sudan has led to catastrophic levels of SGBV, with widespread documentation of a range of severe and systematic abuses. This study examines the relationship between SGBV and migration in this region, with a particular focus on how it affects women and girls.

Methods A cross-sectional, mixed-methods study was conducted in July 2024 using a 'sensemaking' approach among migrants crossing from Sudan to South Sudan at the Aweil North border crossing. Participants, both women and men aged 13 and older, shared brief narratives about migration experiences and interpreted them through quantitative questions. Data were analysed using descriptive statistics, geometric means and confidence intervals for triad data, and violin plots for slider questions. Qualitative data were used to complement and illustrate quantitative findings.

Results A total of 695 self-interpreted micronarratives were collected from 671 unique participants. Findings revealed that SGBV is a significant driver of migration from Sudan to South Sudan, with 53.1% of participants indicating it as a major factor in their decision to migrate. Adolescent girls were statistically more likely to cite SGBV as the primary reason for migration compared to older women. Participants perceived reception centers in South Sudan as relatively safer compared to Sudan but reported significant challenges in accessing basic needs such as food, shelter, and medical care with approximately 82% struggling to make ends meet all or most of the time.

Conclusions SGBV is an important driver of migration from Sudan to South Sudan, especially among adolescent girls. These findings highlight the urgent need for comprehensive SGBV prevention and response services in Sudan, particularly for adolescents. In South Sudan, economic empowerment programs and basic needs assistance for returnees are crucial to mitigate the risks of further sexual exploitation and abuse. Future research should focus on evaluating SGBV prevention and response interventions and exploring intersectional factors affecting SGBV experiences.

Keywords Cross-border, Displacement, Migration, Sexual and gender-based violence, Sudan, South Sudan, Women

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Background

Context and background

The ongoing war in Sudan, which began in April 2023, has triggered a severe humanitarian crisis marked by widespread violence, displacement, and the collapse of basic services. While figures vary by source, it is widely estimated that the war has resulted in at least 150,000 deaths and over 12.7 million people being displaced [1]. Despite being described as one of the worst humanitarian crises of recent years, Sudan has received comparatively little humanitarian funding, international news coverage, or sustained efforts toward securing a ceasefire and peace agreement [2]. Civilians, particularly women and children, face extreme insecurity, including sexual and gender-based violence (SGBV), food shortages, and restricted access to humanitarian aid and healthcare.

The conflict in Sudan is also destabilizing neighbouring South Sudan and threatening fragile peace efforts [3]. As of December 1, 2024, the United Nations High Commissioner for Refugees (UNHCR) reported that approximately 1 million people had crossed the border from Sudan into South Sudan, the majority of whom were South Sudanese returnees who had initially fled to Sudan during South Sudan's civil war [4]. This influx has placed immense strain on host communities and local resources, further compounding existing vulnerabilities.

Violence in northern South Sudan has also intensified as a result of the Sudanese conflict, exacerbating an already complex and volatile situation [5]. South Sudan itself has endured prolonged instability. After achieving independence from Sudan in 2011, South Sudan experienced renewed violence in December 2013, driven primarily by political rivalries, which were further intensified by underlying ethnic tensions. Since then, around 2.3 million people have fled South Sudan to neighbouring countries, including over 800,000 to Sudan [6], and currently two million have been internally displaced within South Sudan [7], highlighting the repeated displacement in the region.

Sexual and gender-based violence

As in other contexts, women and girls in Sudan and South Sudan are often disproportionately impacted by armed conflict, migration, and temporary settlement. Sexual violence has been widely perpetrated during the war in Sudan, with the UN reporting catastrophic levels of SGBV [8]. Given the ongoing hostilities, restricted humanitarian access [9], and logistical and cultural barriers to reporting rape [10], the number of reported cases likely represents only a small fraction of the actual prevalence. SGBV has long been used as a means of political

repression in Sudan, with rape and other forms of sexual violence documented during earlier wars in Darfur [11], including the perpetration of genocidal sexual violence.

Exposure to SGBV is known to be associated with adverse physical and mental health outcomes, disrupted access to health and social services, and increased financial insecurity, which further entrench social exclusion and deepen existing inequalities among women and marginalized groups affected by conflict and displacement [12]. Armed conflict has been shown to intensify SGBV [13], with scholars arguing that wars augment existing patriarchal systems [14] and/or exacerbate economic hardships, which increase vulnerability [15]. Ongoing conflict has led many women to become heads of households in a patriarchal setting [16], which increases their risk of reproductive coercion, transactional sex, unplanned pregnancies and sexually transmitted infections, including HIV/AIDS [17].

Patriarchal norms further fuel conflict by legitimizing male dominance, reinforcing gender inequality, and excluding women and marginalized groups from power and peacebuilding processes [18]. For instance, intimate partner violence (IPV) and SGBV are widespread in South Sudan, exacerbated by ongoing conflict, economic crisis, and entrenched gender inequality. Ellsberg et al., reported high levels of various forms of violence, including conflict-related sexual violence (CRSV), IPV, non-partner sexual violence, child and forced marriage, and abductions [19]. In another study, 50% and 65% of women reported experiencing physical or sexual violence from a partner or non-partner in their lifetime respectively, with 35% reporting rape, attempted rape, or other forms of non-partner sexual violence [20]. These findings underscore how restrictive gender norms, harmful marriage practices, and experiences of conflict collectively drive SGBV, reinforcing a culture of impunity and marginalization.

Migration

There is a growing body of literature charting the relationship between SGBV and migration. Studies have shown that patterns of SGBV shift during and following migration, and that gender-based violence risks are high in settings like refugee settlements and internally displaced persons (IDP) camps [21–23]. Further research has documented the long-term mental health, physical, and social impacts of migration-related SGBV [24], emphasizing the need for both acute and longitudinal survivor support to improve integration outcomes following migration [25]. Risks of SGBV remain high after women and girls leave humanitarian settings, with one

study finding that women were more likely to experience post-conflict SGBV after leaving an IDP camp in Southern Nigeria [26]. Together, the literature points to a ‘continuum of violence’, with Krause identifying a range of perpetrators and forms of SGBV from the initial conflict, through flight, and during long-term displacement [27].

As one of the world’s newest borders, the Sudan/South Sudan context has implications for local, regional, and international politics. The enduring conflict and resultant migration in South Sudan, coupled with the ongoing hostilities in Sudan, have had significant transboundary effects on women. While there are no reliable statistics available for how the war in Sudan and resultant migration have impacted rates of SGBV, risks are very high especially in border regions [28], with women enduring high levels of interpersonal violence on both sides of the border. The connections between migration and SGBV are complex and not fully understood. Specifically, it is unclear how SGBV can drive migration and also result from it, as well as how SGBV affects individuals’ resettlement and integration into new communities [29]. Within this unique context of repeated migration and bi-directional cross-border migration, our research aims to understand the extent and patterns of SGBV currently occurring on the Sudan/South Sudan border and how that is influenced by the intersection of protracted conflict (in South Sudan), more acute conflict (in Sudan), and migration (in both directions).

While forced displacement refers specifically to movement driven by coercion, conflict, or persecution, migration is a broader term that encompasses both voluntary and involuntary movement. In our sensemaking survey, we intentionally focused on migration to avoid assuming the reasons for individuals’ movement, allowing for a more inclusive analysis. For this reason, we use the term migration here rather than displacement. Participants may have migrated more than once and while the survey did not specify which migration experience ought to be shared, the micronarratives were overwhelmingly about the conflict in Sudan ongoing since 2023 and its related migration (rather than earlier migration from South Sudan to Sudan or internal migration within South Sudan).

Aims and objectives

Empirical information is crucial to developing contextually specific, culturally sensitive, and survivor-centred interventions to prevent and address SGBV. While there is a growing body of literature establishing links between SGBV and migration, little is known about the experiences of women and girls who have migrated to South Sudan from Sudan. Further, the relationship between SGBV as a driver versus outcome of migration

has not been sufficiently established. Thus, our research question was: *How does SGBV function as both a driver and a consequence of cross-border migration for women and girls migrating from Sudan to South Sudan, and what prevention and response strategies are needed to support survivors in the border region?* Our study aims to inform strategies for the prevention of SGBV during cross-border migration and identify the support needed for SGBV survivors in the Sudan/South Sudan border region. The findings will be valuable to broad academic and non-academic audiences, including the South Sudan government, UN agencies, non-governmental organisations, policymakers, and women’s rights civil society organizations.

Methods

Study design and sensemaking methodology

We conducted a cross-sectional, mixed methods study employing a ‘sensemaking’ approach using Spryng.io (Cloud based service, July 16th to July 31st, 2024). A mixed-methods approach was chosen to capture a more comprehensive understanding of the complexity around how SGBV can be both a driver and a result of cross-border migration. Sensemaker methodology is founded on the principle that storytelling is an intuitive way to convey complex information and helps individuals make sense of their experiences [30, 31]. Participants used the Spryng.io application on tablets to audio-record or type a brief narrative, known as a micronarrative, in response to one of four open-ended prompting questions (see Appendix 1) regarding the migration experiences of women and girls across the Sudan/South Sudan border. They were encouraged to share whatever aspect of their migration experience they deemed most significant.

Participants then interpreted their shared experiences by answering questions where they plotted their perspectives between three variables (triads) and two variables (sliders) (see Appendix 2 for examples). The closer a response is to a given vertex, the more strongly it reflects that response option. The Spryng.io software quantifies each plotted point, providing statistical data linked to each micronarrative. Additionally, multiple-choice questions gathered sociodemographic information, which helps to contextualize the experiences shared. By design, sensemaking narratives are briefer and less detailed than those typically obtained from more traditional qualitative research. For this reason, we refer to them as ‘micronarratives’. By collecting many self-interpreted micronarratives, the sensemaking approach harnesses the ‘wisdom of the crowds’. The participants’ quantitative responses collectively create a detailed picture, akin to how many pixels form a clear image [32].

Participant sampling and recruitment

Over a 2-week period from July 16th to July 31st 2024, self-identified Sudanese refugees and South Sudanese returnees, both female and male, aged 13 and older, were invited to participate in the study. Although the focus was on the migration experiences of women and girls, males were included for two key reasons: (a) in previous sense-making projects, men and boys tended to share more candid micronarratives about experiences of SGBV [23], and (b) engaging men is critical when addressing SGBV issues [33, 34]. A convenience sample of participants was recruited from various public spaces, including refugee/returnee reception centres, aid distribution points, and markets. We made a concerted effort to recruit members of equity-deserving groups, including persons with disabilities, LGBTQI+ individuals, and those facing extreme poverty. While a limited number of men were included in recruitment, the migration experiences asked about were those of women/girls. Participants could choose to share more than one experience and therefore the total number of sensemaking surveys exceeds the number of unique participants.

Setting and protocol

Data were collected by trained STEWARDWOMEN researchers. STEWARDWOMEN is a South Sudanese civil society organization focused on combatting gender-based violence and prevention of conflict. Data were collected at the formal border crossing at Aweil North, with numerous informal borders surrounding it given the porous nature of the border. Three male and three female Arabic-speaking researchers (combination of Juba Arabic and Khartoum Arabic) from STEWARDWOMEN completed a three-day training in advance of data collection. The training covered research ethics, sensemaking methodology, participant referral processes, reporting of adverse events, and included a detailed survey review with role-playing scenarios. Researchers also received training on psychological first aid and self-care. Male researchers primarily interviewed men and female researchers primarily interviewed women. All data were collected in Arabic, in settings that ensured that the conversations could not be overheard by others, using the Spryng.io app on handheld tablets. The shared micronarratives were initially transcribed and translated from Arabic to English using an artificial intelligence tool, Sonix.ai [35], and were then verified by a human.

Survey

The survey (see Appendix 1) was collaboratively developed by STEWARDWOMEN and academic team members from the University of Birmingham, Dalhousie University, and Queen's University. Initially written in

English, it was professionally translated into Arabic and then back-translated to ensure accuracy. Any discrepancies were resolved by consensus with a third individual who was bilingual in Arabic and English. The instrument was pilot tested among STEWARDWOMEN team members to ensure clarity of the language and the relevance of the questions.

Since the predominant pattern of conflict-related SGBV involves women and girls, this was the focus of our study and the survey asked exclusively about the experiences of women/girls. We acknowledge that men, boys, and LGBTQI+ individuals are also affected by conflict-related SGBV, although this was beyond the scope of our current research.

Analysis

Descriptive statistics summarized the sample. Triad and slider data (see Appendix 2) were disaggregated by age. For triads, geometric means and 95% confidence intervals were calculated for each age group using R Scripts [36–38], with 95% confidence intervals presented graphically as 95% confidence ellipses [39–41]. Geometric means were considered statistically different when the 95% confidence ellipses did not overlap. The collective violin plot areas for each age group were analysed using R Script [36, 37] with the Kruskal–Wallis H test and chi-squared tests to determine statistical differences in the bar areas [42, 43]. Responses to the slider questions were presented graphically as violin plots, with an asterisk indicating the overall median for each subgroup and the width representing the number of individuals who responded at each point along the slider spectrum. *P*-values < 0.05 were considered statistically significant.

After identifying response patterns in the quantitative data, the accompanying narratives for each location were reviewed to facilitate the interpretation of statistical findings. Example quotes are included to illustrate and complement the main quantitative results. However, a comprehensive in-depth qualitative analysis will be published separately.

Ethical considerations

Informed consent was obtained from all participants, documented by selecting a checkbox on the tablet before starting the survey. For participants under the age of 18, safeguards were implemented according to international and local ethical standards for working with minors and involving sensitive topics. For example, assent was obtained from the adolescence in age-appropriate language and a parent or guardian provided informed consent. Researchers were trained to monitor for signs of distress and were instructed to stop the sensemaking survey if the participant appeared uncomfortable. In these

cases, referrals to psychosocial support services were provided. The survey did not ask participants to share experiences of SGBV as the micronarrative prompts were open and broad. Therefore, individuals were able to whatever they were comfortable sharing.

All data were anonymised from the point of collection, as the survey did not gather any identifying information. The sensemaking survey took 12–15 min to complete. Participants were offered up to \$5 in light refreshments and reimbursement of any transportation costs. For any participants needing support services, such as medical care (including post-sexual assault care) and psychosocial support, STEWARDWOMEN arranged referral to local services at the Aweil border. Referral cards for the National SGBV Hotline were offered to each participant. The study protocol was approved by the Queen's University General Research Ethics Board (#6,040,906) and by the South Sudan Ministry of Health Research Ethics Board (RERB-P NO:18/2024).

Results

We collected a total of 695 self-interpreted micro-narratives about the cross-border migration experiences of women/girls from 671 unique participants. Participant sociodemographic characteristics and migration/micronarrative characteristics are provided in Table 1.

A majority of the participants identified as women (88.2%) and most participants were aged 18 to 45 (72.1%) (Table 1). Half of participants had three or more children and approximately 98% were South Sudanese, returning to their home country. Notably, most participants (81.6%) described the woman/girl as struggling to make ends meet all or most of the time.

As demonstrated in Table 2, a majority of the micro-narratives were first person (63.9%). Almost all shared experiences were attributed negative or very negative emotions (94.5%). Over half of participants (53.1%) indicated that SGBV was a major factor in the decision to migrate whereas a minority of participants (16.3%) reported that SGBV was a really big problem in the host community of Aweil, South Sudan.

To triangulate these quantitative findings with the sensemaker data, in which participants interpreted the experiences shared in their micronarratives, we analysed the triad that considered drivers of cross-border migration as illustrated in Fig. 1. Each small grey dot represents an individual participant's response. The different coloured letters represent the geometric means of all responses for that age group. As the triad in Fig. 1 shows, across all age groups participants were more likely to select violence as a reason for migration over poverty and looking for a better future. Two illustrative quotes are included, providing examples of how experiences of

Table 1 Study sociodemographic characteristics

	Total (% of n = 695)
Gender of Narrator	
Woman	613 (88.2)
Man	77 (11.1)
Non-binary	3 (0.4)
Prefer not to say	2 (0.3)
Total	695
Age of Women/Girl	
13–17	114 (16.9)
18–30	277 (41.2)
31–45	213 (31.6)
45 and older	55 (8.2)
Prefer not to say	14 (2.1)
*Total	673
Marital Status of Narrator	
Married/In union	204 (48.3)
Divorced/Separated	78 (18.5)
Widowed	132 (31.2)
Single/never married	6(1.4)
Prefer not to say	2 (0.5)
Total	422
Number of Children for Narrator	
None	17 (4.0)
1–2	72 (17.1)
3 or more	333 (78.9)
Total	422
Nationality of Women/Girl	
South Sudanese	659 (97.9)
Sudanese	12(1.8)
Other	1 (0.1)
Prefer not to say	1 (0.1)
Total	673
Women/Girl's Identification as Member of an **Equity-Deserving Group	
Visible minority	132 (19.6)
Mental health	60 (8.9)
Person with a disability	34 (5.1)
Woman	32 (4.8)
Youth	10 (1.5)
Older adult	3(0.4)
***Other	10(1.5)
None of the above	437 (64.9)
Prefer not to say	5 (0.7)
****Total	723
Frequency of Struggling to Make Ends Meet	
All the time	472 (70.1)
Often	75 (11.1)
Sometimes	22 (3.3)
Rarely	34 (5.1)
Never	65 (9.7)

Table 1 (continued)

	Total (% of n = 695)
Prefer not to say	5 (0.7)
Total	673

*Removes 19 men who shared experiences about women in their families but answered this demographic question about themselves rather than about the woman/girl

**We define equity deserving groups as those who experience significant attitudinal, historic, social and environmental barriers to participating in society based on age, ethnicity, disability, economic status, Indigeneity, gender identity and gender expression, nationality, race, sexual orientation, etc [44]

*** Other included widows, men, pregnant woman, wounded, and community leaders

****Participants could choose up to 2 equity deserving groups so responses sum to exceed the total number of participants

SGBV in Sudan directly contributed to the decision to migrate. The first quote is from a mother whose child died along the migration route and the second quote is from an adolescent girl who states that sexual violence ‘caused our journey to South Sudan.’ As illustrated in the quotes below, various forms of violence were described in the micronarratives including SGBV such as rape of girls, women, and the elderly, and physical violence leading to serious injury and sometimes death.

Figure 2 provides an example of a slider that asked participants if SGBV was the reason for migration versus it occurred because of migration. The shape of the violin plot illustrates the distribution of participants responses and highlights that a vast majority of participants believed that SGBV was the reason for migration. The mean response is highlighted with an asterisk. Adolescent girls were statistically more likely to indicate that SGBV was the reason for migration ($p=0.001$). Two quotes are provided demonstrating how incidents of SGBV in Sudan prompted the decision to return to South Sudan. In the first quote, a man describes how his wife was killed during an attempted rape and his decision to return to South Sudan following her death. In the second quote, a woman describes how she was abducted to the forest where she was raped by two assailants, before escaping to South Sudan.

The triad question illustrated in Fig. 3 asked participants about their perspectives on the types of violence/challenges faced in their host communities in South Sudan. As the figure indicates, financial insecurity was deemed to be more prevalent than sexual or physical violence. This contrasts with the violence described in Sudan. The two included quotes highlight the challenges faced by participants, including food insecurity, lack of access to medical care, inadequate shelter, and lack of clothing. The second quote describes a single mother with a mobility disability who faced many challenges in

providing for her two children including basic necessities such as food, shelter, and medical services.

The second slider question, illustrated in Fig. 4, asked participants about the degree to which violence against women/girls was a problem in their host community in South Sudan. As illustrated in the violin plot, a majority of participants indicated that violence against women/girls was not a problem in the reception centres where they were hosted at the time of the interviews. Each of the illustrative quotes includes a clear statement that speaks to the relative safety for women/girls in South Sudan in comparison to Sudan.

Discussion

Using mixed-methods data collected on the Sudan/South Sudan border, we present new insights into how conflict-related SGBV in Sudan is a major driver of cross border migration among South Sudanese families. Our results indicate that SGBV is a significant driver of migration from Sudan to South Sudan, with a majority of participants, particularly adolescent girls, citing violence as a primary reason for their migration. In contrast, reception centres on the South Sudanese side of the border were perceived to be relatively safe for women/girls in comparison to Sudan. However, in South Sudan many participants described living in poverty and were unable to meet their basic needs such as food, shelter, and medical care, findings which were both extreme and consistent across all age and demographic groups.

Our results align with existing literature that highlights the increased vulnerability of women and girls to SGBV during armed conflicts [20, 45–49]. Findings also align with earlier documentation around SGBV during migration, including through Central America/Mexico [50, 51], North Africa/Libya [52], and sub-Saharan Africa [22, 53] and Europe [54]. However, our findings go beyond merely confirming this vulnerability; they establish that SGBV is not just a consequence of conflict but a critical driver of migration. Households and individuals do not flee solely in response to generalized violence or insecurity—they make the decision to leave specifically due to acute and pervasive SGBV threats. As further outlined below, this underscores the urgent need for targeted interventions that address SGBV as a primary factor in migration dynamics, rather than treating it as a secondary or incidental consequence of conflict.

Furthermore, our research adds nuance to the understanding of SGBV during conflict and migration by demonstrating how SGBV may influence migration decisions differently among varying age groups. For instance, in our study adolescent girls were statistically more likely to indicate that SGBV was the reason

Table 2 Migration and micronarrative characteristics

	Total (% of n = 695)
Who was the shared micronarrative about	
Me	444 (63.9)
Someone in my family	69 (9.9)
Someone else I know	158 (22.7)
Something I heard or read about	23 (3.3)
Prefer not to say	1 (0.1)
Total	695
Emotional tone of the shared experience	
Strongly negative	490 (70.5)
Negative	167 (24.0)
Neutral	26 (3.7)
Positive	7 (1.0)
Strongly positive	3 (0.4)
Prefer not to say	2 (0.3)
Total	695
*How big of a factor was SGBV in causing your displacement	
A big factor	369 (53.1)
A small factor	43 (6.2)
Not considered	30 (4.3)
Prefer not to say	2 (0.4)
Total	444
How big of a concern is SGBV in this community	
A really big concern	113 (16.3)
A small concern	291 (41.9)
Not a concern	286 (41.2)
Prefer not to say	5 (0.7)
Total	695
*How many times have you been displaced	
Once	359 (80.9)
2–3 times	80 (18.0)
More than 3 times	5 (1.1)
Total	444
*How long ago did you leave your home	
Less than 1 year	298 (65.1)
1–3 years	21 (4.7)
3–5 years	24 (5.4)
More than 5 years	101 (22.7)
Total	444

*Was only asked of participants sharing first- person experiences (n = 444)

for migration in comparison to women, especially older women, who were more likely to respond that SGBV occurred because of migration. Several explanations may exist for this finding. For instance, girls and young women are often disproportionately targeted for SGBV within the Sudan conflict, particularly

through abduction and sexual servitude, which more often affects them compared to older, married women or women with young children. Furthermore, young unmarried girls are at risk of different types of SGBV such as child, early, and forced marriage which has been shown to increase during humanitarian crisis and

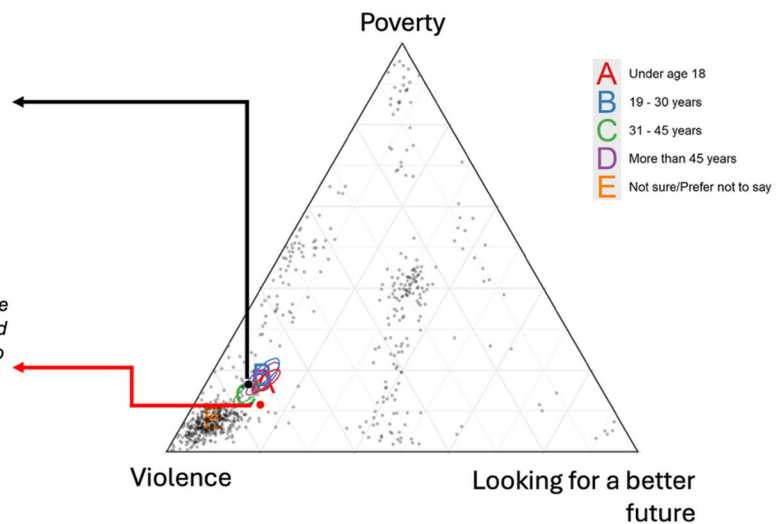
What factors drove cross-border displacement for the woman/girl in your story?

I came during the time of the war, and my 12-year-old child died in the process, as we were many vulnerable women at that time. Arabs forced themselves on us women, and girls leading to death of a young girl. We came on foot, mourning and in pain to South Sudan, looking for freedom for girls and women to have a peaceful life.

ID# 70293 South Sudanese woman age unknown

It all happened one evening when we were asleep - the rebel forces attacked the neighborhood. They reached our place ordering all men to come out and women to remain indoors. They later entered all our rooms and slept with young girls and even elderly women. This caused our journey to South Sudan...

ID# 70004 South Sudanese adolescent aged 14-18



Does not relate/prefer not to say n = 7

Fig. 1 Perceived drivers of cross-border migration for women/girls

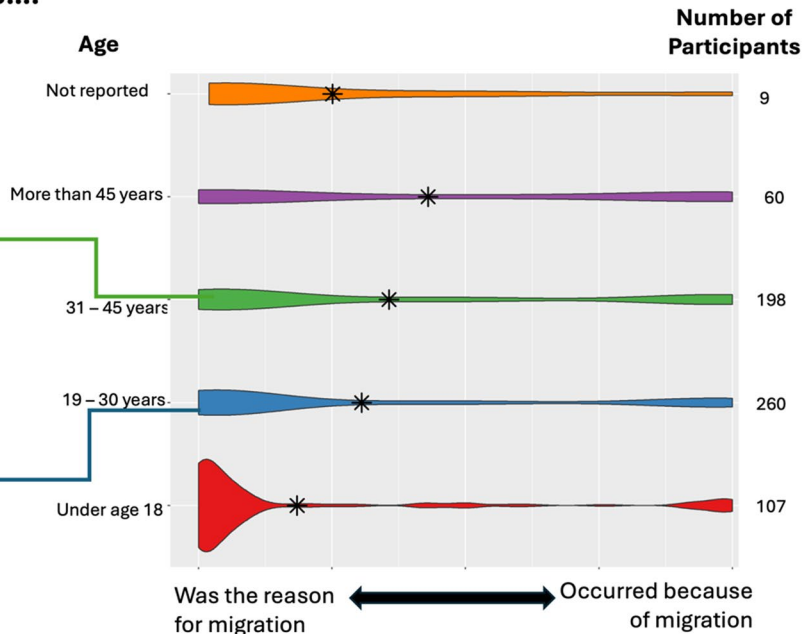
Sexual and gender-based violence....

... armed men came to my house at night when I was not around... Two of them entered into the room. They wanted to rape her, but she resisted and she was shouting for rescue from the neighbours. The armed men got scared, and one stabbed her on the side with a knife. They then ran away. By the time neighbours went to her rescue, she had bled too much. She was rushed to near by health unit but she passed on. This scared me to travel to South Sudan.

ID# 70898 South Sudanese man aged 31 – 45

There were many bad things which happened to women/girls... what happened was that I was raped by two people for two days in the bush without eating while those rebels could eat and smoke drugs. After two days in the bush, I came on the road and I got a vehicle which took me to South Sudan.

ID# 70892 South Sudanese woman aged 19-30



Does not relate/prefer not to say n=61, p-value = 0.001

Fig. 2 Perspectives on whether SGBV was the reason for migration or occurred because of migration

forced migration [23, 55, 56]. Finally, conflict-related SGBV may be somewhat normalized among older women, who may have been exposed to high levels

during earlier wars in either South Sudan or Sudan [19, 20]. However, these explanations remain speculative, and further research is essential to better understand

What forms of violence does the woman/girl in your story face in their host community/settlement?

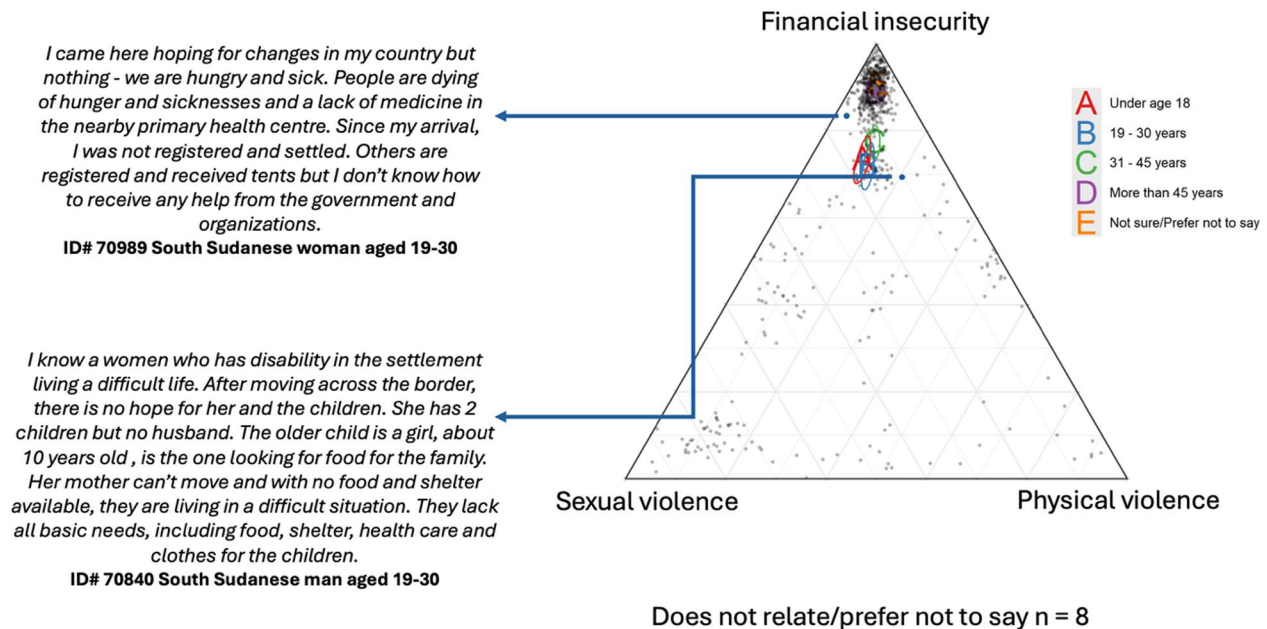


Fig. 3 Opinions about challenges faced by women/girls in South Sudanese reception centres

Violence against women/girls within the settlement/host community...

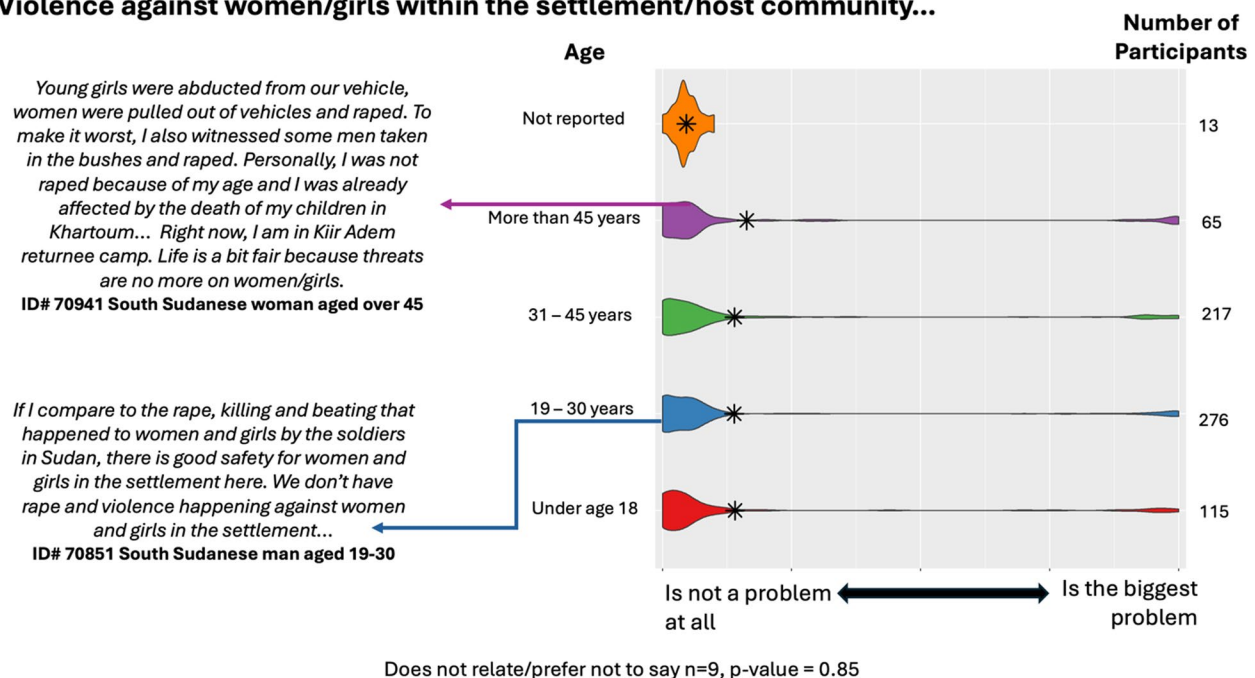


Fig. 4 Perceptions on degree to which violence against women/girls is a problem in South Sudanese host community

the migration experiences of older women and the ways in which SGBV affects them along the migration route.

Interestingly, while SGBV was reported as a significant factor influencing the decision to migrate from Sudan, participants described the reception centers in South

Sudan as comparatively safer for women/girls. This contrasts with previous research documenting high rates of SGBV in South Sudan [19, 20, 57] and in refugee camps and settlements more generally [53]. It is important to clarify that this finding should not be interpreted as evidence that SGBV doesn't occur in the reception center in Aweil North. Rather, it likely reflects a perception that the threats are lower relative to the conflict-related SGBV experienced in Sudan, which have been previously documented to be substantial. Alternatively, this finding could reflect a reluctance to report SGBV in the host community. Further research is needed to identify if there are circumstances or factors that may be protective against SGBV in the Aweil reception center. Understanding these protective factors could inform strategies to further enhance safety in the center and could potentially be adapted to improve protection in other refugee and IDP camps.

In South Sudan, participants reported significant challenges in meeting their basic needs, including access to food, shelter, and medical care. This highlights the complex interplay between physical security and human security, emphasizing that freedom from violence alone does not guarantee overall well-being or safety [58, 59]. To address these challenges, implementing economic empowerment programs for returnees in South Sudan and integrating SGBV services with livelihood support and basic needs assistance is crucial. Evidence strongly suggests that failing to meet basic needs can increase the vulnerability of women and girls to sexual exploitation and further abuse both along the migration route [60, 61] and also within host communities [62]. Ensuring comprehensive gender-transformative support is therefore essential to mitigating these risks and fostering resilience and re-integration in South Sudan.

To address the high prevalence of pre-migratory SGBV experiences, NGOs, government agencies, and UN bodies should prioritise expanding SGBV prevention, risk mitigation, response and coordination services in Sudan and along migration routes [63]. These efforts should prioritise more integrated community-centred approaches, increased funding and support for comprehensive services, including medical care, psychosocial support, and legal assistance as well as expanding safe spaces for women and girls. Such services must be tailored to address the challenges arising from the ongoing war in Sudan, which has severely damaged infrastructure and caused significant shortages in human resources, further complicating service delivery. In addition, strengthening community-based protection mechanisms should be a key focus with coordination of available services prioritized. We believe this includes engaging men and boys in SGBV prevention efforts [33, 34] and providing support

for women-led organizations, which are often well-positioned to address the needs of survivors. Improving SGBV prevention and response will require increased funding and integrating services into the broader migration and humanitarian programming in a holistic and sustained manner.

While not the focus of this paper, the recorded narratives contained very limited discussion of humanitarian or protective services along the migration routes from Sudan to Aweil North. No participants reported receiving adequate care or services during migration. In contrast to the absence of services along the migration route, a small number of participants indicated they had accessed emergency healthcare or psychological support after arriving in South Sudan. However, these were uncommon. The majority of participants described being left without assistance despite their urgent needs, including emergency care following SGBV. Observations at data collection sites further underscored the precarious conditions faced by South Sudanese returnees, many of whom were sleeping in makeshift shelters or outdoors without tents or blankets. Food was scarce, and much of the area was flooded. Access to services, including medical care, required traveling to Aweil Centre, approximately two hours away by vehicle, which was inaccessible to some participants.

Current support services for SGBV prevention, risk mitigation, and response have predominantly focused on specific migration routes, leaving others, such as Aweil North through Kiir Adem, largely neglected. This significant gap demands urgent attention, as the neglect of these routes has resulted in insufficient access to basic necessities, including shelter and food, which are fundamental human rights. Failure to address the needs of returnees and migrants along these under-supported routes risks the well-being of vulnerable populations and long-term adverse consequences for migration patterns. Expanding SGBV programming to encompass all migration routes is essential for ensuring comprehensive and equitable support.

Further, persistent problems with the South Sudanese justice system and delays and disruptions in advancing the 2018 peace process means that the political and security situation in South Sudan remains tenuous [64]. Policymakers should prioritize strengthening legal frameworks by accelerating the enactment and implementation of comprehensive anti-SGBV legislation. This should include provisions for specialized courts and protection centres to support survivors. Additionally, enhancing cross-border cooperation through bilateral agreements between Sudan and South Sudan is crucial to improve coordination on SGBV prevention, response, and prosecution of perpetrators across borders.

Additionally, investigating the role of faith leaders and faith-sensitive approaches in SGBV prevention and response in this context could offer new perspectives and opportunities. Existing evidence suggests that local faith communities and leaders may play a significant role by offering psychosocial support, protection, and social cohesion for survivors of SGBV [65]. It is worth noting however, that while faith-based organizations can provide survivor-centered care, their impact would likely be shaped by existing gender norms, which can either support or hinder SGBV prevention and response efforts. For instance, faith-based and traditional leaders, as influential gatekeepers of social norms, can either reinforce or challenge harmful gender dynamics, making their strategic engagement essential for shifting narratives around SGBV, improving survivor support, and strengthening community-driven prevention efforts [66]. Strengthening collaboration between local faith communities/leaders and humanitarian actors, alongside gender-sensitive engagement strategies could facilitate faith-based approaches contributing positively to SGBV mitigation and survivor recovery.

Future research should focus on comprehensively evaluating SGBV prevention, risk mitigation, and response interventions, particularly those that engage men and boys, to identify best practices in the Sudan/South Sudan context. Research should also explore how different factors and positionalities such as age, disability, ethnicity, and sexual orientation intersect with SGBV experiences and migration patterns. Examining the repercussions of SGBV, including physical, psychosocial, and economic, in the context of forced migration and the potential economic benefits of effective prevention, risk mitigation, and response programs would provide valuable insights.

Limitations and strengths

These findings must be interpreted within the context of the research project's limitations. First, although efforts were made to gather micronarratives from a broad range of participants, the use of a convenience sample means the results are not representative and therefore cannot be generalized. While we aimed to reach a diverse sample of participants including those historically marginalized due to extreme poverty, living with a disability, or being a visible minority, particularly marginalized groups may have been under-represented. This may have limited our ability to make definitive conclusions about their experiences. Second, SAB, HT, and SL acknowledge that our positionality and inherent biases as white academic researchers based in the Global North may have influenced the interpretation of the findings. However, data interpretation was conducted collaboratively with the STEWARDWOMEN team which helped to mitigate

this risk. Third, due to a software glitch, approximately one-third of the micronarratives failed to upload to the secure server during the original data upload in Aweil. Fortunately, the micronarratives were retrieved from the tablets. The issue was identified early, prompting interviewers to type the remaining narratives into the tablet rather than audio recording them. This may have resulted in shorter narratives and increased reporting and social desirability bias. Additionally, since the micronarratives were shared in Arabic but typed in English, the simultaneous translation may have led to inaccuracies. However, all interviewers were fluent in Arabic comprehension and in English reading/writing. Finally, the retrieved micronarratives had to be manually linked to their corresponding quantitative data, which introduced an opportunity for error. To mitigate this risk, we cross referenced multiple data points such as collection time, title, narrator's gender, and first/third-person designation.

Despite these limitations, the research has notable strengths. For instance, the sample size of 695 provides robust quantitative insights and qualitative perspectives from diverse participants, particularly noteworthy given the logistical challenges of collecting data in such complex circumstances. Additionally, allowing micronarratives to emerge organically, without directly soliciting micronarratives about SGBV, reduced social desirability bias and enabled a broader exploration of participants' experiences. Participants' opportunity to interpret their own narratives reduced researcher interpretation bias and provided nuanced insights that might not have been identified through more structured methods. Finally, by engaging both women and men about women's migration experiences, we present more comprehensive data that includes more nuanced insights from both genders.

Conclusions

Our data highlight that SGBV is a significant driver of migration from Sudan to South Sudan, with 53.1% of participants indicating it as a major factor in their decision to migrate. Adolescent girls were statistically more likely to cite SGBV as the primary reason for migration compared to older women. This finding highlights the heightened vulnerability of young girls to various forms of SGBV in Sudan. The study also revealed that a majority of participants (81.6%) struggled to meet basic needs, raising concerns that this economic vulnerability will further exacerbate the risk of sexual exploitation for women/girls. This highlights the urgent need for comprehensive SGBV prevention, risk mitigation, and response services in Sudan, particularly for adolescents, as well as economic empowerment programs and basic needs assistance for returnees in South Sudan to mitigate the risks of further exploitation and abuse. Future research should

focus on evaluating SGBV prevention, risk mitigation, and response interventions and exploring intersectional factors affecting SGBV experiences.

Appendix 1

Survey questions with possible responses

Question	Possible responses
Micro-narrative prompts	
Share an example of the biggest <i>opportunity</i> or <i>greatest</i> threat experienced by a woman or girl who has migrated across the Sudan/South Sudan border	Micro-narrative recorded by participant
Think of a woman or girl who has migrated across the Sudan/South Sudan border. Tell a story about how this migration <i>helped</i> or <i>harmed</i> her	Micro-narrative recorded by participant
Provide a story that illustrates the biggest <i>fear</i> or <i>dream</i> of a woman or girl who has migrated across the Sudan/South Sudan border	Micro-narrative recorded by participant
Provide a story that illustrates how being a woman or girl most <i>increases</i> or <i>decreases</i> the risks faced during migration across the Sudan/South Sudan border	Micro-narrative recorded by participant
Triads	
What factors drove cross-border displacement for the woman/girl in your story?	1) Poverty; 2) Violence; 3) Looking for a better future or some combination thereof
When crossing the border, what was the biggest risk faced by the woman/girl in your story?	1) Sexual harassment/exploitation; 2) Robbery/extortion; 3) Lack of basic survival needs (food, water, shelter) or some combination thereof
What forms of violence does the woman/girl in your story face in their host community/settlement?	1) Financial insecurity; 2) Sexual violence (rape, sexual exploitation); 3) Physical violence (assault, attacks from the community) or some combination thereof
What are the biggest concerns for the woman/girl in your story?	1) Reintegration; 2) Health needs; 3) Violence or some combination thereof
What form(s) of assistance or support would be most helpful to the woman/girl in your story?	1) Legal support; 2) Healthcare; 3) Basic needs met or some combination thereof
Dyads	
Protections for the woman/girl in your story...	1) Were not nearly enough; 2) Were way too much or some combination thereof

Question	Possible responses
Violence against women/girls within the settlement/host community...	1) Is not a problem at all; 2) Is the biggest problem or some combination thereof
Sexual and gender-based violence...	1) Was the reason for migration; 2) Occurred because of migration or some combination thereof
The events in the story...	1) Occurred because of migration; 2) Would have occurred anyway without migration or some combination thereof
Multiple Choice Questions About the Shared Experience	
Who is the story about (choose only 1)?	1) Me 2) Someone in my family 3) Someone else I know 4) Something I heard or read about 5) Prefer not to say/not sure
What is the emotional tone of this story (choose only 1)?	1) Strongly negative 2) Negative 3) Neutral 4) Positive 5) Strongly positive 6) Prefer not to say/not sure
How does this story make <i>you</i> feel (choose up to 2)?	1) Afraid 2) Angry 3) Ashamed 4) Disappointed 5) Embarrassed 6) Frustrated 7) Lonely 8) Happy 9) Helpless 10) Hopeful 11) Relieved 12) Sad 13) Worried 14) Prefer not to say/not sure
What is the age of the woman/girl in the story (choose only 1)?	1) Age 18 or under 2) 19–30 years 3) 31–45 years 4) > 45 years 5) Prefer not to say/not sure
Relative to others in the community, how often does the woman/girl in your story struggle to make ends meet (example, not enough money for food, shelter, clothes...) (choose 1)?	1) Never 2) Rarely 3) Sometimes 4) Often 5) All the time 6) Prefer not to say/not sure
Which of the below groups both apply to the woman/girl in the story and were relevant to the experience shared (choose up to 2)?	1) Having a disability 2) Being an ethnic or religious minority 3) Experiencing mental health problems 4) Gender diverse 5) Use of alcohol and drugs 6) Did not identify with any of these groups 7) Other 8) Prefer not to say/not sure
What is the nationality of the woman/girl in your story (choose 1)?	1) Sudanese 2) South Sudanese 3) Other 4) Prefer not to say/not sure

Question	Possible responses
How big of a concern is gender-based violence in this community (choose 1)?	1) A really big concern 2) A small concern 3) Not a concern 4) Prefer not to say/not sure_____
How big a factor was gender-based violence in causing your displacement (choose 1)?	1) A big factor 2) A small factor 3) Not considered 4) Prefer not to say/not sure
What is your age (choose 1)?	1) Age 18 or under 2) 19–30 years 3) 31–45 years 4) > 45 years 5) Prefer not to say/not sure
How do you identify (choose 1)?	1) Woman 2) Man 3) Non-binary 4) Prefer not to say/not sure
What is your marital status (choose 1)?	1) Married/In Union 2) Divorced/Separated 3) Widowed 4) Single, Never Married 5) Prefer not to say/not sure
How many children do you have (choose 1)?	1) Woman 2) Man 3) Non-binary 4) Not sure/prefer not to say
Do you identify with any of the following groups?	1) None 2) 1–2 3) 3 or more 4) Prefer not to say
How many children do you have (choose only 1)?	1) 0 2) 1–2 3) 3 or more 4) Prefer not to say
Relative to others in the community, how often do you struggle to make ends meet (example— not enough money for food, shelter, clothes...) (choose 1)?	1) Never 2) Rarely 3) Sometimes 4) Often 5) All the time 6) Prefer not to say/not sure

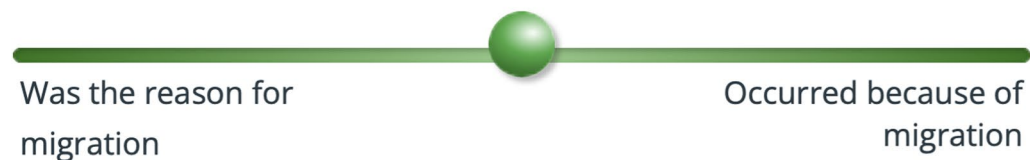
Question	Possible responses
Which of the below groups do you identify with (choose up to 2)?	1) Having a disability 2) Being an ethnic or religious minority 3) Experiencing mental health problems 4) Gender diverse 5) Use of alcohol and drugs 6) Did not identify with any of these groups 7) Other 8) Prefer not to say/not sure
What is your nationality (choose 1)?	1) Sudanese 2) South Sudanese 3) Other 4) Prefer not to say/not sure
How many times have you been displaced (choose 1)?	1) Once 2) 2–3 times 3) More than 3 times 4) Prefer not to say
How long ago did you leave your home (choose 1)?	1) Less than 1 year 2) 1–2 years 3) 3–5 years 4) More than 5 years 5) Prefer not to say
What story number is this for the participant?	1st 2nd 3rd 4th
Comments or anything else you would like to share about cross border migration experiences of women/girls?	Free text field
*Response was optional for all questions	

Appendix 2**Examples of sensemaking triad and slider questions**

What factors drove cross-border displacement for the woman/girl in your story?



Sexual and gender-based violence....



Abbreviations

CRSV	Conflict-related sexual violence
IDP	Internally displaced person
IPV	Intimate partner violence
SGBV	Sexual and gender-based violence
UN	United Nations
UNHCR	United Nations High Commissioner for Refugees

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Author contributions

The study was originally conceptualized by HT, SL, and SAB. The data were collected by JCD, PIL, RSO, LSM, OGL, and BEA. SAB and CAD conducted the initial data analysis and SAB drafted the manuscript. All coauthors contributed to data interpretation. All authors reviewed and approved the final manuscript submitted for peer review.

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Data availability

The dataset is available upon request to the corresponding author.

Declarations

Ethics approval and consent to participate

The study protocol was approved by the Queen's University General Research Ethics Board (#6040906) and by the South Sudan Ministry of Health Research Ethics Board (RERB-P NO:18/2024). Individuals under the age of 18 provided assent and a parent or guardian provided informed consent.

Competing interests

The authors declare that they have no competing interests.

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References

1. Council on Foreign Relations. Civil War in Sudan Center for Preventative Action 2025 Available from: <https://www.cfr.org/global-conflict-tracker/conflict/power-struggle-sudan>. Accessed 6 June 2025
2. United Nations News. Sudan, 'the most devastating humanitarian and displacement crisis in the world': United Nations; 2025 Available from: <https://news.un.org/en/story/2025/02/1160161>. Accessed 6 June 2025
3. Centre for Preventative Action. Civil War in Sudan Global Conflict Tracker2024 Available from: <https://www.cfr.org/global-conflict-tracker/conflict/power-struggle-sudan>. Accessed 5 Dec 2024
4. Omulo D, Hujale M. Operational Data Portal - South Sudan United Nations2024 Available from: <https://data.unhcr.org/en/situations/sudansituation>. Accessed 5 Dec 2024
5. United Nations UN News. Sudan crisis threatens to hobble South Sudan's transition UN News: UN; 2023 Available from: <https://news.un.org/en/story/2023/06/1137952#:~:text=The%20conflict%20has%20also%20strained,%20on%20the%20South%20Sudanese%20economy>. Accessed 26 Nov 2024
6. Solomun J. South Sudanese refugees return to their troubled home: ALJAZEERA; 2023 Available from: <https://www.aljazeera.com/gallery/2023/5/8/photo-sudan-crisis-forces-south-sudanese-refugees-back-to-trouble>. Accessed 27 Nov 2024
7. United Nations High Commission for Refugees. South Sudan Global Appeal 2025 situation overview United Nations2024 Available from: <https://reporting.unhcr.org/sites/default/files/2024-11/South%20Sudan%20Situation%20Overview.pdf>. Accessed 11 Dec 2024
8. United Nations Human Rights Council. Findings of the investigations conducted by the Independent International Fact-Finding Mission for the Sudan into violations of international human rights law and international humanitarian law, and related crimes, committed in the Sudan in the context of the conflict that erupted in mid-April 2023*: United Nations; 2024 Available from: <https://www.ohchr.org/sites/default/files/documents/hrbodies/hrcouncil/sessions-regular/session57/A-HRC-57-CRP-6-en.pdf>. Accessed 11 Dec 2024
9. United Nations Security Council. Calling Situation in Sudan 'Utter Humanitarian Catastrophe'; Secretary-General, Briefing Security Council, Underscores Need for Cessation of Hostilities United Nations: UN; 2024 Available from: <https://press.un.org/en/2024/sc15867.doc.htm>. Accessed 11 Jan 2025
10. United Nations Secretary General. Report of the Secretary-General on Conflict-Related Sexual Violence United Nations2018 Available from: <https://peacekeeping.un.org/sites/default/files/sg-report-2017-crsv-spread.pdf>. Accessed 11 Jan 11 2025
11. Gingerich T, Leaning J. The use of rape as a weapon of war in the conflict in Darfur, Sudan François-Xavier Bagnoud Center for Health and Human Rights 2004 Available from: <https://phr.org/wp-content/uploads/2004/10/darfur-rape-as-a-weapon-2004.pdf>. Accessed 6 June 2025
12. Rubini E, Valente M, Trentin M, Facci G, Ragazzoni L, Gino S. Negative consequences of conflict-related sexual violence on survivors: a systematic review of qualitative evidence. *Int J Equity Health*. 2023;22(1):227.
13. Office of the Special Representative of the Secretary-General on Sexual Violence in Conflict. Conflict-Related Sexual Violence: Report of the United Nations Secretary-General United Nations2023 [Available from: <https://www.un.org/sexualviolenceinconflict/wp-content/uploads/2023/07/SG-REPORT-2023SPREAD-1.pdf>. Accessed 26 Nov 26 2024
14. Cislighi B, Heise L. Using social norms theory for health promotion in low-income countries. *Health Promot Int*. 2019;34(3):616–23.
15. Rai SM, True J, Tanyag M. From depletion to regeneration: addressing structural and physical violence in post-conflict economies. *Soc Polit Int Stud Gend State Soc*. 2019;26(4):561–85.
16. Buchanan E. No Simple Solutions: Women, Displacement and Durable Solutions in South Sudan: Oxfam International, Nile Hope, Titi Foundation, Danish Refugee Council, Norwegian Refugee Council, and Care; 2019 Available from: https://www.careinternational.org/carexpertise/women-displacement-and-durable-solutions-in-south-sudan?utm_source=chatgpt.com. Accessed 3 Feb 2025
17. Heise LL. Violence against women: an integrated. *Ecol Framework Violence Against Women*. 1998;4(3):262–90.
18. Women U. Gender Response Conflict Analysis United Nations; 2022 Available from: https://asiapacific.unwomen.org/sites/default/files/2022-03/ap-UN-Women-AFG_Gender-responsive-conflict-analysis.pdf. Accessed 27 May 2025
19. Ellsberg M, Murphy M, Blackwell A, Macrae M, Reddy D, Howell C, et al. If You Are Born a Girl in This Crisis, You Are Born a

- Problem: Patterns and Drivers of Violence Against Women and Girls in Conflict-Affected South Sudan. *Violence Against Women*. 2021;107780122199646.
20. Ellsberg M, Ovince J, Murphy M, Blackwell A, Reddy D, Stennes J, et al. No safe place: prevalence and correlates of violence against conflict-affected women and girls in South Sudan. *PLoS ONE*. 2020;15(10):e0237965.
 21. Kelly J, Ekhtor-Mobayode U, Hanmer LC, Rubin A, Arango DJ. The Risk that travels with you: links between forced displacement, conflict and intimate partner violence in Colombia and Liberia. *J Develop Stud*. 2024;60(12):1994–2021.
 22. Kelly J, Holmes M, Gibbons N, Matabaro Tom A, Voors M. Conflict, displacement and overlapping vulnerabilities: understanding risk factors for gender based violence among displaced women in eastern democratic republic of Congo. *J Develop Stud*. 2024;60(12):2022–49.
 23. Bartels S, Michael S, Roupetz S, Garbern S, Kilzar L, Bergquist H, et al. Making sense of child, early and forced marriage among Syrian refugee girls: a mixed methods study in Lebanon. *BMJ Glob Health*. 2018;3(1):e000509.
 24. Tan SE, Kuschminder K. Migrant experiences of sexual and gender based violence: a critical interpretative synthesis. *Global Health*. 2022;18(1):68.
 25. Phillimore J, Block K, Bradby H, Ozcurumez S, Papoutsi A. Forced migration, sexual and gender-based violence and integration: effects, risks and protective factors. *J Int Migr Integr*. 2023;24(2):715–45.
 26. Adejumo OA, Ntoimo L, Odumayo MS, Adebimpe WO, Okiei B, Osungbemi W, et al. Experience of Gender-based Violence by Internally Displaced Women in Southern Nigeria: A Cross-sectional Study. *J Interpers Violence*. 2022;37(15–16):NP12794–NP819.
 27. Krause U. A continuum of violence? linking sexual and gender-based violence during conflict, flight, and encampment. *Refug Surv Q*. 2015;34(4):1–19.
 28. Sullivan DP, Halakhe AB. Return to a Displaced Nation: The Sudan Crisis and South Sudan's Returnees: Refugees International; 2023 Available from: <https://d3jwam0i5codb7.cloudfront.net/wp-content/uploads/2023/07/South-Sudan-Report-July-2023.pdf>. Accessed 27 Nov 2024
 29. Pickering S, Powell R. Migration Displacement and Briefing Note Series 1: State of Evidence - Women and Irregular Migration: Oxfam Australia Monash University; 2018 Available from: https://www.monash.edu/_data/assets/pdf_file/0006/2482899/briefing-note-series-1-women-and-irregular-migration.pdf. Accessed 25 Nov 2024
 30. Cognitive Edge. SenseMaker 2017 Available from: <https://sensemaker.cognitive-edge.com>. Accessed 8 April 2021
 31. Van der Merwe SE, Biggs R, Preiser R, Cunningham C, Snowden DJ, O'Brien K, et al. Making sense of complexity: using Sensemaker as a research tool. *Systems*. 2019;7(2):25.
 32. GirlHub. Using SenseMaker to Understand Girls Lives: Lessons Learnt from GirlHub 2014 [Available from: <https://www.girlsnotbrides.org/documents/1040/session-9d-Girl-Hub-SenseMaker-brief.pdf>. Accessed 27 Oct 2021
 33. Ruane-McAteer E, Amin A, Hanratty J, Lynn F, Corbijn van Willenswaard K, Reid E, et al. Interventions addressing men, masculinities and gender equality in sexual and reproductive health and rights: an evidence and gap map and systematic review of reviews. *BMJ Glob Health*. 2019;4(5):e001634.
 34. World Health Organization. Engaging men, addressing harmful masculinities to improve sexual and reproductive health and rights WHO2019 Available from: https://www.who.int/news/item/26-09-2019-engaging-men-addressing-harmful-masculinities-to-improve-sexual-and-reproductive-health-and-rights?utm_source=chatgpt.com. Accessed 10 Dec 2024
 35. Sonix.ai. Sonix automated transcription software 2025 Available from: <https://sonix.ai>. Accessed 6 Feb 2025
 36. Wickham H. ggplot2: elegant graphics for data analysis. New York: Springer-Verlag; 2016.
 37. Hamilton NE, Ferry M. ggtern: ternary diagrams using ggplot2. *J Stat Softw Code Snippets*. 2018;87(3):1–17.
 38. R Core Team. R: A Language and Environment for Statistical Computing R Foundation for Statistical Computing; 2024 Available from: <https://www.r-project.org>. Accessed 5 Dec 2024
 39. DeLong S. Statistics in the Triad, Part I: Geometric Mean 2016 Available from: <http://qedinsight.com/2016/03/28/geometric-mean/>. Accessed 20 April 2021
 40. DeLong S. Statistics in the Triad, Part II: Log-Ratio Transformation 2016 Available from: <http://qedinsight.com/2016/03/28/log-ratio-transformation/>. Accessed 20 April 2021
 41. DeLong S. Statistics in the Triad, Part IV: Confidence Regions 2017 Available from: <http://qedinsight.com/2017/07/08/confidence-regions/>. Accessed 8 April 2022
 42. Webster L. Using Statistics to Help Interpret Patterns: Are My Eyes Tricking Me? 2015 Available from: <http://qedinsight.com/2015/06/04/are-my-eyes-tricking-me/>. Accessed 20 April 2021
 43. Webster L, Carroll M. November 2014 Webinar: The Art and Science of Story Patterns 2014 Available from: <http://qedinsight.com/resources/libRARY/november-2014-webinar/>. Accessed 20 April 2021
 44. Equity & Inclusion Office. Equity and inclusion glossary of terms University of British Columbia: University of British Columbia; 2025 Available from: https://equity.ubc.ca/resources/equity-inclusion-glossary-of-terms/?utm_source=chatgpt.com. Accessed 6 Feb 2025
 45. Rubini E, Trentin M, Valente M, Cenati S, Canavese A, Castagna P, et al. Migrant survivors of conflict-related sexual violence accessing a specialist health service in Turin, Italy: a qualitative analysis of clinical forensic interview transcripts. *Front Sociol*. 2024;9:1454700.
 46. Wood EJ. Rape as a practice of war: toward a typology of political violence. *Polit Soc*. 2018;46(4):513–37.
 47. Nordås R, Cohen DK. Conflict-related sexual violence. *Annu Rev Polit Sci*. 2021;24(1):193–211.
 48. Wood EJ. Variation in sexual violence during war. *Polit Soc*. 2006;34(3):307–41.
 49. Bellizzi S, Pichierri G, Nivoli A. Sexual violence against young and adolescent girls: the case of the 2023 Sudan crisis. *J Pediatr Adolesc Gynecol*. 2023;36(6):569–70.
 50. Infante C, Leyva-Flores R, Gutierrez JP, Quintino-Perez F, Torres-Robles CA, Gomez-Zaldivar M. Rape, transactional sex and related factors among migrants in transit through Mexico to the USA. *Cult Health Sex*. 2020;22(10):1145–60.
 51. Soria-Escalante H, Alday-Santiago A, Alday-Santiago E, Limon-Rodriguez N, Manzanares-Melendres P, Tena-Castro A. "We All Get Raped": sexual violence against Latin American women in migratory transit in Mexico. *Violence Against Women*. 2022;28(5):1259–81.
 52. Reques L, Aranda-Fernandez E, Rolland C, Grippon A, Fallet N, Reboul C, et al. Episodes of violence suffered by migrants transiting through Libya: a cross-sectional study in "Medecins du Monde's" reception and health-care centre in Seine-Saint-Denis. *France Confl Health*. 2020;14:12.
 53. Tadesse G, Andualem F, Rtibey 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.
 54. Keygnaert I, Dias SF, Degomme O, Deville W, Kennedy P, Kovats A, et al. Sexual and gender-based violence in the European asylum and reception sector: a perpetuum mobile? *Eur J Public Health*. 2015;25(1):90–6.
 55. Mourtada R, Schlecht J, Dejong J. A qualitative study exploring child marriage practices among Syrian conflict-affected populations in Lebanon. *Conflict and Health*. 2017;11(1):27.
 56. Schlecht J. Women's Refugee Commission: A Girl No More: The Changing Norms of Child Marriage in Conflict. 2016.
 57. Murphy M, Bingenheimer JB, Ovince J, Ellsberg M, Contreras-Urbina M. The effects of conflict and displacement on violence against adolescent girls in South Sudan: the case of adolescent girls in the protection of civilian sites in Juba. *Sex Reprod Health Matters*. 2019;27(1):1601965.
 58. Price N. Integrating 'Return' with 'Recovery': utilising the return process in the transition to positive peace: a case study of Sri Lanka. *Round Table*. 2010;99(410):529–45.
 59. Krause U, Segadlo N. Conflict, displacement ... and peace? a critical review of research debates. *Refug Surv Q*. 2021;40(3):271–92.
 60. Jacobson L, Regan A, Heidari S, Adhiambo Onyangod M. Transactional sex in the wake of COVID-19: sexual and reproductive health and rights of the forcibly displaced. *Sex Reprod Health Matters*. 2020.
 61. Geneva Graduate Institute, Gender Centre. Transactional Sex and Health Repercussions in Forced Displacement: A Multi-Country Study Swiss Network for International Studies: Survival Strategies in Forced Displacement; 2022 Available from: <https://snis.ch/wp-content/uploads/2020/09/Donor-Report-Section-2-Final-Scientific-Report-2023.10.05-1.pdf>. Accessed 1 June 2025

62. UNICEF. Enhancing Gender in Humanitarian Response UNICEF2022 [Available from: https://www.unicef.org/rosa/sites/unicef.org/rosa/files/2019-01/Enhancing%20Gender%20in%20Humanitarian%20Response.pdf?utm_source=chatgpt.com. Accessed 10 Dec 2024
63. United Nations Office for the Coordination of Humanitarian Affairs. Sudan Humanitarian Needs and Response Plan 2025 / Part 3: Cluster/Sector Needs and Response OCHA2025 Available from: <https://humanitarianaction.info/plan/1220/document/sudan-humanitarian-needs-and-response-plan-2025/article/362-gender-based-violence-area-responsibility>. Accessed 7 June 2025
64. Office of the United Nations High Commissioner for Human Rights. South Sudan's fragile peace prospects rest on addressing the impunity and corruption that drive human rights violations, experts tell UN General Assembly: United Nations; 2024 Available from: <https://www.ohchr.org/en/press-releases/2024/10/south-sudans-fragile-peace-prospects-rest-addressing-impunity-and-corruption>. Accessed 12 Dec 2024
65. Ager J, Fiddian-Qasmiyeh E, Ager A. Local faith communities and the promotion of resilience in contexts of humanitarian crisis. *J Refug Stud*. 2015;28(2):202–21.
66. Le Roux E, Palm S. Learning from Practice: Engaging Faith-based and Traditional Actors in Preventing Violence Against Women and Girls. New York: UN Trust Fund to End Violence against Women; 2021 Available from: <https://untf.unwomen.org/sites/default/files/Field%20Office%20UNTF/Publications/2021/Prevention%20briefs/Synthesis-Learning-from-practice-Engaging-faith-based-traditional-actors-in-preventing-VAWG.pdf>. Accessed 6 Feb 2025

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