

The association between sexual violence and mental disorders among women victim-survivors in sub-Saharan Africa: a systematic review and meta-analysis

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ABSTRACT

Background Sexual violence is a serious public health and human rights problem with both short-term and long-term consequences. This review aims to systematically assess the link between sexual violence and poor mental health among sub-Saharan African women.

Methods Systematic review and meta-analyses of observational studies were performed. MEDLINE, CINAHL, EMBASE, PsycINFO, Cochrane, Global Health and the University of Melbourne library electronic databases were used to find relevant published literature over 12 years from 2012 to 2024 in sub-Saharan Africa with stringent eligibility criteria. Random effects meta-analyses were used to pool estimates of ORs and 95% CIs. The I^2 statistic was used to assess heterogeneity.

Results This systematic review and meta-analysis of 76 observational studies included a total of 80 313 participants and found a consistent small-to-medium association between lifetime sexual violence and experiences of poor mental health. The pooled ORs suggest that women who were exposed to sexual violence were more than twice as likely to experience post-traumatic stress disorder (OR 2.75; 95% CI 1.96 to 3.86; $I^2=73.4\%$), depression (OR 2.38; 95% CI 2.04 to 2.77; $I^2=56.6\%$), anxiety (OR 2.81; 95% CI 1.67 to 4.72; $I^2=77.2\%$), common mental disorders (OR 2.12; 95% CI 1.70 to 2.64; $I^2=0.0\%$), suicidal behaviour (OR 2.44; 95% CI 1.92 to 3.10; $I^2=68.0\%$) and emotional distress (OR 3.14; 95% CI 1.73 to 5.69; $I^2=79.6\%$) compared with women who have not experienced sexual violence.

Conclusions Exposure to lifetime sexual violence was consistently associated with small to medium effects on poor mental health among women in sub-Saharan Africa. Thus, policy-makers should develop response strategies as well as mental health screening tools for all violence response service delivery points. In addition, health practitioners must prioritise screening for mental health conditions in patients who present with a history of sexual violence.

INTRODUCTION

Sexual violence (SV) is a serious public health and human rights problem with both

WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ Individual studies and syntheses, mostly from high-income countries, revealed the association between sexual violence (SV) and poor mental health. However, no systematic review and meta-analysis conducted in sub-Saharan Africa examining the association of SV and poor mental health among women across all age groups in the region.

WHAT THIS STUDY ADDS

⇒ This manuscript contributed to the global body of knowledge about the association between SV and poor mental health and identified the prevalent mental health conditions among SV victims in sub-Saharan Africa, a region often underrepresented in existing literature.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ This study highlights the importance of recognising the mental health burden on SV victims in sub-Saharan Africa, prompting policy-makers to develop supportive national action plans, encouraging the integration of comprehensive SV management into health services and advocating for future research employing longitudinal and qualitative methods.

short-term and long-term consequences for women's physical, mental, and sexual and reproductive health. The WHO defines SV as 'any sexual act, attempt to obtain a sexual act or other act directed against a person's sexuality using coercion, by any person regardless of their relationship to the victim, in any setting'.¹ SV is a form of gender-based violence, with women disproportionately impacted and considerably more likely to experience repeated and severe forms of SV.² Young women are especially at risk, and those aged between 16 and 19 years are four times more likely than the general

population to be victims of rape, attempted rape or sexual assault.³ This paper will focus on SV against women.

Globally, 31% of women aged 15–49 years have experienced physical and/or SV from a current or former husband or male intimate partner, SV from someone who was not a current or former husband or intimate partner, or both these forms of violence at least once since the age of 15 years.⁴ Intimate partner violence is the most common type of violence reported, with lifetime prevalence for women aged 15–49 years estimated to be 27% across the world, while the estimated global prevalence of non-partner SV was 6% in 2018.⁴ Estimated prevalence rates for lifetime non-partner SV vary considerably across the world. The highest estimated prevalence of non-partner SV since age 15 was reported in high-income regions including Australia and New Zealand (19%) and Northern America (15%); whereas sub-Saharan Africa (6%) and South-eastern Asia (4%) had the lowest prevalence estimates among regions.⁴ However, this variation requires careful interpretation, as the true prevalence in low-income and middle-income settings such as sub-Saharan Africa is likely to be substantially higher than current estimates.⁵ Despite growing consensus on standardised definitions of SV and gold standard measures through specialised population-based surveys, survey design and implementation are inconsistent across geographical regions and often undertaken among non-representative samples.⁴ Inconsistent definitions and measurement and the stigmatised nature of SV, particularly in some communities, means that SV is likely under-reported.

SV affects physical, mental, sexual and reproductive health (including unplanned or lost pregnancies and exposure to STIs and HIV).^{6–8} It also has negative economic impacts for individuals (due to out-of-pocket expenses and impact on ability to work) and national economies.⁹ At the community level, SV can stigmatise the victim, depriving her of social status and value (if she is seen as unfaithful or promiscuous), and thereby modifies relationships within the community with an overall deleterious effect. SV can lead to radical changes in the image that the victim has of herself, and how she sees the past, present and future. SV can also change a victim's relations with her immediate social circle and in her community, having a lasting negative impact on the victim's feelings of herself, of events and of others.^{8 10}

All these impacts have a flow-on impact on mental health. Studies in a wide range of settings have reported psychological distress, depression, panic attack episodes, post-traumatic stress disorder (PTSD) and postpartum depression as being related to SV.^{11 12} Suicidal behaviours have also been reported among postpartum mothers with a history of SV.^{13 14} Conversely, other studies have reported poor mental health as a predisposing factor for SV, and women with a mental illness are substantially more vulnerable to being victims of all forms of violence, suggesting a bidirectional relationship.¹⁵

Individual studies and syntheses of published studies mostly from high-income countries reveal the association between SV and poor mental health across the world.^{15 16}

However, to the best of our knowledge, there has been no systematic review and meta-analysis conducted in sub-Saharan Africa that synthesises the literature examining the association of SV and poor mental health among women across all age groups in the region. The association between exposure to SV and poor mental health could be different in this region compared with elsewhere in the world due to a range of contextual differences.

Consequently, the aim of this review is to address research gaps through systematically assessing the evidence for an association between SV and poor mental health among women in sub-Saharan African countries; and identifying the most common mental health conditions among SV victims compared with those women who have no experience of SV. Additionally, this study will conduct a meta-analysis to estimate the pooled effects of SV on poor mental health. The findings of the study can inform policies and strategies to respond to the mental health effects of SV.

METHOD

Data source

The reporting of results was based on the recommendations of Preferred Reporting Items for Systematic Reviews and Meta-Analyses.¹⁷ The study protocol was registered with Prospero: registration CRD42022339383 (www.crd.york.ac.uk/prospero). MEDLINE, CINAHL, EMBASE, PsycINFO, Cochrane, Global Health and The University of Melbourne library electronic databases were used to find relevant published literature over 12 years from 2012 to 2024 in sub-Saharan Africa with stringent eligibility criteria.

Study selection criteria

Studies were included if they were primary quantitative studies that compared poor mental health among women in sub-Saharan Africa with a history of SV to women without a history of SV. To be eligible for inclusion, studies had to be published in a peer-reviewed journal in the English language from 2012 to 2024. The exposure variable SV is defined as 'any sexual act, attempt to obtain a sexual act or other act directed against a person's sexuality using coercion, by any person regardless of their relationship to the victim, in any setting. It includes rape, defined as the physically forced or otherwise coerced penetration of the vulva or anus with a penis, other body part or object, attempted rape, unwanted sexual touching and other non-contact forms.'¹ The outcome variable poor mental health includes anxiety disorders (generalised anxiety disorder, social phobias, specific phobias, panic disorders, agoraphobia and anxiety disorders not otherwise specified), bipolar disorder, depression, eating disorders (anorexia nervosa and bulimia nervosa), obsessive-compulsive disorder, PTSD, schizophrenia, sleep

disorders (night terrors, insomnia, narcolepsy and sleep disorders not otherwise specified), somatoform disorders (conversion disorder, somatisation, hypochondriasis and body dysmorphic disorders) and suicide attempts. Studies were excluded if they (a) did not report SV, (b) if the study did not include women in the sample or if it did not disaggregate the data by gender, (c) studies were not conducted in sub-Saharan African countries and (d) if the study was not quantitative (qualitative studies, case reports, editorials, narrative reviews, conference abstracts, letters, and commentaries were all excluded).

Search strategy, data extraction and quality measures

The search strategy was developed by the researchers and refined by an experienced librarian at The University of Melbourne. Keywords were used to define the concept areas of SV and poor mental health, and the search was limited to epidemiological studies. The screening was conducted using Covidence software—a Cochrane technology web-based platform designed to help researchers produce timely, high-quality systematic reviews—to track each document through the inclusion and exclusion criteria process. The Covidence database also allowed the researchers to work independently, assess reliability and identify conflicts for resolution through team discussion. Two researchers independently screened the title and abstract of each article for possible inclusion. Three researchers reviewed the full text of each screened article to make a final decision about whether these articles met inclusion and exclusion criteria. The screening stages were conducted by SAW, GW and SB, with any discrepancies resolved among the team to achieve full consensus.

The three independent reviewers assessed the methodological quality of the included studies using Joanna Briggs Institute's (JBI) critical appraisal tools for cross-sectional, case-control and cohort studies to evaluate the trustworthiness, relevance and results of published papers (<https://jbi.global/critical-appraisal-tools>). In summary, the following criteria were applied to critically determine the eligibility of the studies. (See [figure 1](#) for the details of articles excluded based on each criterion).

- ▶ The study must be quantitative.
- ▶ Studies must be composed of a sample of women or include data disaggregated by sex.
- ▶ There should be two groups (exposed and non-exposed to SV).
- ▶ The exposure and outcome measurement tools were valid and had been used in previous studies.
- ▶ The study reported at least one mental health outcome among both the SV and non-SV group or in comparison with the OR or effect size.
- ▶ The study population or SV group must not have, by design, only consisted of people with a pre-existing mental disorder.
- ▶ The study must not have been fully duplicative of another eligible study.

After final agreement on the selected studies, we used Microsoft Excel to review and extract details about each study included in the final sample. We also extracted information concerning the study purpose, design, participants, setting and details about the outcome variable in both the exposed and control groups. Summary data of ORs and 95% (CIs with preference to the adjusted

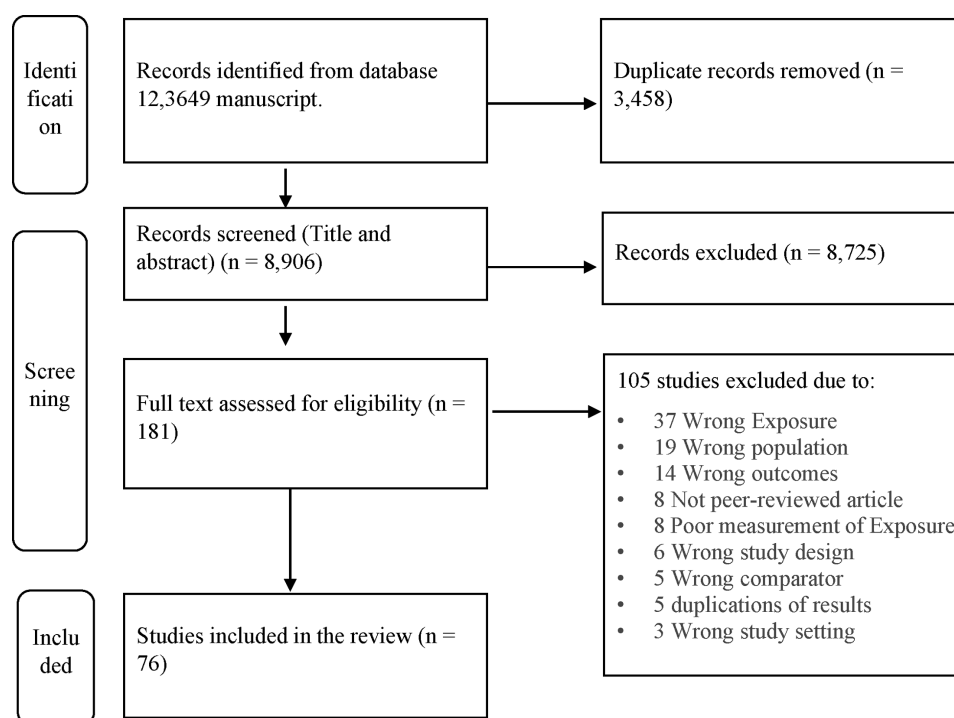


Figure 1 PRISMA flow diagram for this study. PRISMA, Preferred Reporting Items for Systematic Reviews and Meta-Analyses.

OR were obtained if possible. We conducted a narrative, descriptive synthesis of the extracted information to answer our research questions. The first question was whether there is an association between experience of SV and poor mental health among women in sub-Saharan Africa. The second question was what are the most common mental health conditions among women in sub-Saharan Africa who have experienced SV, compared with women who have not experienced SV.

Data synthesis

Meta-analyses were performed to estimate the pooled OR of poor mental health among women with a history of SV compared with those without a history of SV by synthesising individual results. Only studies that reported the adjusted ORs were included in the meta-analysis to adjust for the effect of other predictor variables and to see the adjusted pooled estimate. A random-effects model was used, as we expected high heterogeneity due to the large methodological variations in the included observational studies.

A random effects meta-analysis assumes variance in the effect across different studies explained by real differences in effect, as well as by chance.¹⁸ Heterogeneity is reported using the I^2 statistic. The I^2 statistic informs us what portion of the total variance in the effect size is caused by variance between the studies. As previously suggested, an I^2 statistic of above 75% implies considerable heterogeneity, while an I^2 statistic below 40% is not considered a concern.¹⁹

As stated in the protocol, the study planned to assess differences in the most common mental health conditions among sub-Saharan African women who reported a history of SV and women who did not report experiences of SV. Studies that reported the proportion or number of participants that experienced any type of mental health condition among both groups of women with and without history of SV were identified. If a specific outcome was reported by at least two studies, it was included in the pooled prevalence estimate. Finally, the prevalence of different mental health conditions was calculated to identify the most common mental health conditions among SV victims and among those with no history of SV.

To compare the association of mental health conditions with experience of SV, the pooled OR of the poor mental health outcomes (PTSD, depression, anxiety, common mental disorders (CMDs) (mixed anxiety and depression), suicidal behaviour (suicidal ideation, plan or attempt) and emotional/psychological distress) was calculated. All meta-analyses were conducted with Stata V.18 software.

RESULTS

Overview of the reviewed studies

The database search yielded 12364 articles, and 3458 duplicates were removed. The titles and abstracts of 8906 articles were reviewed in Covidence. After excluding 8725

studies based on title and abstract review, we reviewed the full text of 181 articles. From this group, we excluded 105 articles for several reasons described in (figure 1) below. We identified a final sample of 76 articles that met all inclusion criteria and the quality appraisal using JBI's critical appraisal tools.

Characteristics of studies (n=76)

This systematic review yielded 66 cross-sectional, 9 cohort and 1 case-control study, with a sample of 80313 women from a total of 17 sub-Saharan African countries. The sample sizes in the included studies ranged from 100 to 7101 women. Of all articles, 16 (21%) studies were conducted in South Africa, followed by 14 (18%) studies each from Uganda and 11 (14%) in Kenya. The remaining studies were completed in Ethiopia (n=9, 12%), Tanzania (n=6, 8%), Democratic Republic of the Congo (n=3, 4%), Nigeria (n=3, 4%), Cameroon (n=2, 3%), Malawi (n=2, 3%), Rwanda (n=2, 3%), Burkina Faso (n=2, 3%), Ghana (n=2, 3%), Zambia (n=1, 1%), The Gambia (n=1, 1%), Zimbabwe (n=1, 1%), Botswana (n=1, 1%) and Lesotho (n=1, 1%).

Of all studies included in this systematic review and meta-analysis, 27 studies reported two or more outcome variables. Two outcomes were reported by 17 studies, while 3 and 4 outcomes were reported by 6 and 4 studies, respectively. The remaining 49 studies reported only one outcome. Most studies (n=47, 62%) reported depression as an outcome variable, followed by PTSD (n=23, 30%). Suicidal behaviour was reported by 18 studies (24%), while 9 studies (12%) each reported anxiety and CMD outcomes. CMD is used when anxiety and depression were reported together in the original studies. Emotional distress was also reported by 5 (7%) studies. Table 1 presents the summary characteristics of the studies and key outcome findings (online supplemental information file 1).

Sexual violence

In this study, 80313 women were included, of which 19860 (25%) women had experienced at least one type of SV in their lifetime. Additionally, 7073 (36%) of women who had ever experienced SV had experienced SV over the last 12 months. Among all SV victims, 7070 (36%) experienced non-rape SV, 2556 (13%) experienced rape only and 10234 (52%) experienced both rape and another type of SV.

Poor mental health and SV

The most common mental health conditions reported in studies included in this systematic review were PTSD, depression, anxiety, CMD (depression and anxiety), suicidal behaviour (ideation, plan or attempt) and emotional distress. The prevalence of all types of mental health conditions reported was higher among SV victims compared with women without a history of SV. For

Table 1 Descriptive summary of studies included in the systematic review and meta-analysis of sexual violence and poor mental health among women victims in sub-Saharan Africa, 2023

Authors	Country	Sample size	Any SV, N (%)
Abelson <i>et al</i> ⁷	Cameroon	2165	713 (33)
Abrahams <i>et al</i> ⁷¹	South Africa	885	14 (1.6)
Agardh <i>et al</i> ⁶	Uganda	279	68 (24.3)
Amone-P'Olak <i>et al</i> ²⁰	Uganda	181	119 (66)
Amone-P' <i>et al</i> ¹⁰	Uganda	210	135 (65)
Ashenafi <i>et al</i> ¹²	Ethiopia	3015	332 (11)
Asiimwe <i>et al</i> ⁷²	Uganda	100	45 (45)
Ayele <i>et al</i> ⁴³	Ethiopia	409	93 (22.7)
Barchi <i>et al</i> ⁴⁴	Botswana	469	40 (10)
Beksinska <i>et al</i> ²¹	Kenya	1003	306 (31.3)
Belay <i>et al</i> ⁴⁵	Ethiopia	589	56 (9.5)
Belete <i>et al</i> ¹³	Ethiopia	988	123 (12.5)
Belete <i>et al</i> ¹¹	Ethiopia	990	123 (12.4)
Brar <i>et al</i> ⁴⁶	Malawi	1000	454 (46)
Cange <i>et al</i> ¹⁴	Burkina Faso	696	285 (40.9)
Cherenack <i>et al</i> ⁴⁷	Tanzania	135	57 (42.5)
Cohen <i>et al</i> ⁷⁸	Uganda	2022	526 (26)
Decker <i>et al</i> ⁴⁸	South Africa	224	41 (18.3)
Donald <i>et al</i> ⁴⁹	Uganda	385	20 (5)
Dossa <i>et al</i> ²²	DRC	320	117 (36.56)
Ejigu <i>et al</i> ⁵⁰	Ethiopia	826	103 (12.5)
Erulkar <i>et al</i> ⁵¹	Ethiopia	4495	744 (17)
Familiar <i>et al</i> ²³	Uganda	580	454 (79.5)
Groves <i>et al</i> ⁸⁵	South Africa	1500	39 (2.78)
Gust <i>et al</i> ⁸⁶	Kenya	461	121 (34.6)
Hansrod <i>et al</i> ²⁴	South Africa	169	80 (47)
Issahaku ⁷⁹	Ghana	443	151 (34)
Jewkes <i>et al</i> ²⁵	South Africa	3005	1727 (57.4)
Kaminer <i>et al</i> ²⁶	South Africa	138	
Kapiga <i>et al</i> ⁸⁷	Tanzania	1049	355 (34.8)
Kinyanda <i>et al</i> ⁵²	Uganda	694	7.80
Kisaakye <i>et al</i> ⁸⁰	Uganda	1795	933 (52)
Kinyanda <i>et al</i> ⁹⁸	Uganda	894	168 (18.6)
Lambert and Denckla ²⁷	Kenya	301	108 (35.9)
Larsen <i>et al</i> ⁵³	Kenya	3555	199 (5.6)
Lee <i>et al</i> ²⁸	Burkina Faso	681	130 (19)
Lee <i>et al</i> ⁸¹	Nigeria	1766	616 (36.3)
Leis <i>et al</i> ⁵⁴	Kenya	220	151 (68.6)
Luo <i>et al</i> ²⁹	Uganda	1415	191 (13.7)
Machisa <i>et al</i> ³⁰	South Africa	1292	97 (8)
Magnusson <i>et al</i> ⁵⁵	Tanzania	1013	165 (16.3)
Mahenge <i>et al</i> ³¹	Tanzania	1180	236 (20)

Continued

Table 1 Continued

Authors	Country	Sample size	Any SV, N (%)
Mahenge <i>et al</i> ⁵⁶	Tanzania	500	58 (11.6)
Manongi <i>et al</i> ⁵⁷	Tanzania	1116	212 (19)
Mathur <i>et al</i> ⁷³	Kenya	1778	381 (21.4)
Mathur <i>et al</i> ⁷³	Zambia	1915	437 (22.8)
Mhlongo <i>et al</i> ³²	South Africa	157	38 (24.2)
Morof <i>et al</i> ³³	Uganda	117	84 (63.3)
Myers <i>et al</i> ⁵⁸	South Africa	499	34 (6.8)
Nabayinda <i>et al</i> ⁵⁹	Uganda	542	136 (25.1)
Nduna <i>et al</i> ⁶⁰	South Africa	1415	219 (15)
Nöthling <i>et al</i> ³⁴	South Africa	134	79 (59)
Okafor <i>et al</i> ⁶¹	South Africa	981	65 (6.6)
Ogban <i>et al</i> ⁷⁴	Nigeria	250	73 (29.2)
Parcesepe <i>et al</i> ⁷⁵	Cameroon	230	71 (31.3)
Pellowski <i>et al</i> ⁶²	South Africa	831	55 (7.1)
Peltzer <i>et al</i> ³⁵	South Africa	268	109 (40.7)
Picchetti <i>et al</i> ⁸²	Lesotho	7101	1349 (19)
Roberts <i>et al</i> ³⁶	Kenya	283	124 (43.8)
Rogathi <i>et al</i> ⁶³	Kenya	1013	159 (15.7)
Rurangirwa <i>et al</i> ³⁷	Rwanda	921	89 (9.7)
Samia <i>et al</i> ⁶⁴	Kenya	215	38 (17.7)
Schwartz <i>et al</i> ³⁸	South Africa	299	154 (52)
Sekoni <i>et al</i> ³⁹	Nigeria	550	49 (8.9)
Shamu <i>et al</i> ⁶⁵	Zimbabwe	842	335 (39.8)
Sherwood <i>et al</i> ⁶⁶	The Gambia	251	70 (29)
Tenkorang ⁸	Ghana	2282	614 (26.9)
Tilahun <i>et al</i> ⁸³	Ethiopia	615	34 (5.5)
Tsai <i>et al</i> ⁶⁷	Uganda	173	26 (15)
Umubyeyi <i>et al</i> ⁴⁰	Rwanda	447	71 (17.4)
Verelst <i>et al</i> ⁶⁸	DRC	1304	499 (38.2)
Villaveces <i>et al</i> ⁸⁴	Malawi	1029	224 (21.8)
Wado <i>et al</i> ⁶⁹	Kenya	2106	6.40
Wa Mwenda <i>et al</i> ⁴¹	DRC	3011	2302 (76.5)
Ward <i>et al</i> ⁴²	South Africa	2497	454 (18.19)
Winter <i>et al</i> ⁷⁰	Kenya	361	152 (42.1)
Woldetsadik <i>et al</i> ⁷⁶	Ethiopia	743	34 (4.6)

DRC, Democratic Republic of the Congo; SV, sexual violence.

instance, depression was 69% among SV victims and 21% among non-SV victims (figure 2).

The meta-analysis results suggest that sub-Saharan African women who have experienced lifetime SV are more likely to have poor mental health compared with women who have not experienced SV. The pooled ORs for PTSD, depression, anxiety, CMD, suicide and emotional distress all indicate that women who have experienced SV are over two or more times likely to report symptoms

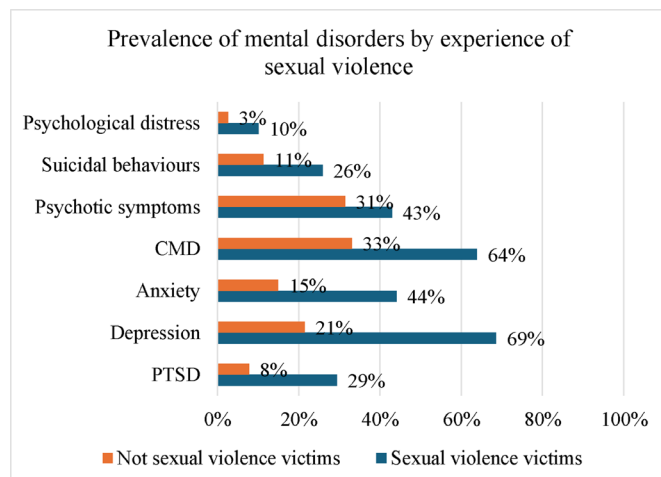


Figure 2 'Prevalence of mental health conditions among women without experience of SV' and 'prevalence of mental health conditions among women with experience of SV'. CMD, common mental disorder; PTSD, post-traumatic stress disorder; SV, sexual violence.

of poor mental health compared with the control group (see figure 3).

Post-traumatic stress disorder

A total of 23 studies reported an association between lifetime SV and PTSD as an outcome.^{20–42} Excluding one study,²⁴ all studies demonstrated a positive association between lifetime SV and PTSD. A total of 11 studies with adjusted ORs were selected for the meta-analysis,^{20 23 24 27 30 31 33 34 37 40 41} and the meta-analysis of PTSD across 11 studies yielded a pooled OR of (OR 2.75; 95% CI 1.96 to 3.87; $I^2=73.4\%$) indicating that women who had experienced SV were over two times more likely to experience PTSD compared with those with no experience of SV.

A subgroup analysis was conducted to examine the effect of the setting for the primary data collection in

each study (eg, was the primary data collected during antenatal care (ANC), in a conflict setting, from specific population groups experiencing different forms of inequity or from the general population). The subgroup meta-analysis showed that the association between SV and PTSD was most prevalent among antenatal populations (OR 3.64; 95% CI 1.34 to 9.83; $I^2=78.5\%$), with studies conducted in conflict settings showing the next strongest association (OR 2.66; 95% CI 1.43 to 4.94; $I^2=72.0\%$).

Given the observed heterogeneity, we conducted meta-regression and sensitivity analyses to explore potential sources of variability across studies. No moderators showed significant associations with PTSD, indicating that the heterogeneity may be random or due to other unmeasured factors. However, sensitivity analysis showed that excluding a case-control study reduced heterogeneity to a moderate level without affecting pooled estimates, confirming the robustness of the findings (online supplemental information file 2).

Depression

Depression was the most common mental health condition reported, being described in 47 of the articles^{6–8 11 12 21 23 25 27–31 35–38 40 42–70} included in this systematic review. Meta-analysis of the association between lifetime SV and depression, which included the 28 studies^{8 11 23 29–31 37 40 43 44 47–52 54–57 60–63 65 66 69 70} that reported adjusted ORs, revealed a pooled OR of experiencing depression (OR 2.38; 95% CI 2.05 to 2.78; $I^2=56.6\%$). That is, women who had experienced SV had more than twice the odds of experiencing depression than women with no history of SV.

Similarly, a subgroup analysis was conducted to examine the effect of the setting of the primary data collection. The subgroup meta-analysis showed the association between SV and depression to be strongest for studies conducted during the antenatal period (OR 3.50; 95% CI 2.43 to 5.04; $I^2=57.6\%$), followed by the postnatal period

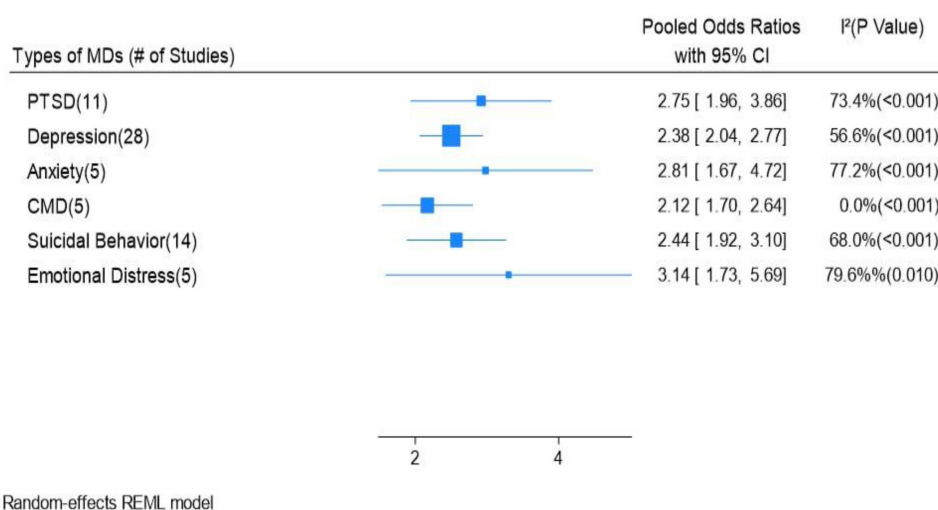


Figure 3 Summary of the pooled OR estimates of mental health conditions among women with lifetime experience of SV compared with women who have not experienced. CMD, common mental disorder; I^2 , heterogeneity statistic; PTSD, post-traumatic stress disorder; SV, sexual violence

(OR 2.89; 95% CI 1.76 to 4.73; $I^2=60.5\%$) and in conflict settings (OR 2.60; 95% CI 1.24 to 5.46; $I^2=79.9\%$).

Anxiety

In this systematic review, nine studies reported anxiety outcomes,^{6 31 37 40 42 50 54 58 68} and all the studies reported a positive association between lifetime SV and anxiety. Five studies^{31 37 40 50 54} with adjusted ORs were included in the meta-analysis, and the pooled odds of SV victims experiencing anxiety were 2.81 (OR 2.81; 95% CI 1.67 to 4.71; $I^2=77.21\%$) times higher than for women who did not report exposure to SV. A subgroup analysis was not conducted for anxiety and the other mental health conditions presented below due to an insufficient number of studies.

Common mental disorders

This review operationally defined CMDs as depression and anxiety, as reported in the reviewed articles. In some articles, depression and anxiety were not reported separately and are included in this review as CMD. A total of 10 articles^{10 21 70–77} reported CMD, and all studies reported a positive association between lifetime SV and CMDs. The meta-analysis of the five studies^{10 21 70 75 76} with adjusted ORs demonstrated that the odds of reporting CMD were (OR 2.12; 95% CI 1.70 to 2.64; $I^2=0.00\%$) times higher among SV victims compared with women who had not experienced SV.

Suicidal behaviour (ideation, plan or attempt)

Suicidal behaviour, including ideation, plan and attempt, was reported by 18 articles,^{13 14 21 28 30 37 40 48 52 65 70 78–84} and all studies, except one,⁶⁵ found a positive association between lifetime SV and suicidal behaviour. 14 studies^{13 21 30 37 40 48 52 65 70 78 80 82–84} with adjusted ORs were included in the meta-analysis, which revealed that the OR of suicidal behaviour is (OR 2.44; 95% CI 1.92 to 3.10; $I^2=68.0\%$) times higher among women who had experienced SV compared with those who had no experience of SV.

Emotional distress

Five studies reported emotional distress outcomes,^{81 82 84–86} and all these studies reported a positive association between lifetime SV and emotional distress. The meta-analysis included the five studies as they reported adjusted ORs, and the pooled odds of emotional distress were found to be (OR 3.14; 95% CI 1.73 to 5.69; $I^2=79.6\%$) times higher among women with histories of SV compared with women without histories of SV.

Other mental health conditions

Only a few studies reported other types of mental health conditions. Two studies reported psychotic symptoms,^{6 10} one study assessed poor mental health,⁸⁷ one study reported conduct disorder and somatic complaints,¹⁰ and one study examined sleep deprivation.⁷⁹ A study showed that exposure to sexual coercion ever in one's lifetime was significantly associated with high

psychotic symptom scores.⁶ The other study revealed that SV victims with no children were more likely to report symptoms of psychotic disorder (OR 1.38; 95% CI 0.78 to 2.47) compared with those women who did not report experiencing SV.¹⁰ SV was also associated with increased reporting of symptoms of poor mental health (OR 2.8; 95% CI 1.9 to 4.1) compared with those women who did not report SV.⁸⁷ Similarly, women with a history of SV and with children as a consequence of SV were over six times more likely to report somatic complaints (OR 6.59; 95% CI 1.80 to 24.11), compared with those women who did not report SV.¹⁰ Lastly, women who experienced SV had a higher odds of reporting sleep disruption (OR 2.5; 95% CI 1.28 to 4.88) compared with those who had no experience of SV.⁷⁹

DISCUSSION

This comprehensive systematic review and meta-analysis of 76 observational studies included a total of 80 313 women participants, among whom one-quarter (25%) had experienced SV. We found consistent small-to-medium associations between a history of SV and a variety of more common mental health conditions.

The pooled prevalence of all mental health conditions in this review was higher among SV victims compared with the prevalence among women without a history of SV. Depression was the most prevalent mental health condition described (69%), followed by CMD, and then anxiety with prevalence estimates of 64% and 44%, respectively, among women with a history of SV. Health service providers should, therefore, give special attention to screening for common mental health conditions in patients who present with a history of SV. Women SV victims who visit health facilities or other service centres, such as one-stop centres for survivors of gender-based violence, should also be screened for poor mental health so that they can receive effective support services.

Findings from the random effects meta-analyses revealed a strong association between SV and all mental health outcomes, although the strength of the associations slightly varied across the different outcomes. Overall, the pooled ORs suggest that women who experienced SV are more than twice as likely to experience PTSD (OR 2.75; 95% CI 1.96 to 3.86), depression (OR 2.38; 95% CI 2.04 to 2.77), anxiety (OR 2.81; 95% CI 1.67 to 4.72), CMD (OR 2.12; 95% CI 1.70 to 2.64), suicidal behaviour (OR 2.44; 95% CI 1.92 to 3.10) and emotional distress (OR 3.14; 95% CI 1.73 to 5.69) compared with women who had not experienced SV. These findings align with previous systematic reviews and meta-analyses, conducted mostly from outside of Africa and among populations of both women and men, which demonstrate that SV is associated with multiple mental health conditions.^{88 89} However, the strength of the association varies. For example, Dworkin's meta-analysis of studies conducted internationally examined the association between poor mental health and sexual

assault and reported substantially higher pooled ORs of PTSD (7.57) and depression (3.44), compared with this study's findings.⁸⁸ This could be due to differences in sample characteristics, diagnostic criteria, measures of SV and poor mental health, assessment procedures, and study period.

A subgroup analysis of depression and PTSD by the study setting where the data collection took place revealed that ever experience of SV reported during the antenatal period is the strongest predictor of PTSD and depression. Indeed, this analysis indicates that women who experienced SV ever in their lifetime and reported during pregnancy were more than three times more likely to experience PTSD (OR 3.64; 95% CI 1.34 to 9.83) and depression (OR 3.50; 95% CI 2.43 to 5.04), compared with women who did not report SV. This supports previous studies which found that SV is strongly associated with depression and PTSD during the perinatal period.^{90 91}

One possible explanation could be that pregnancy and the postpartum period already have an association with psychological morbidity and are therefore a time of high vulnerability that could trigger or intensify poor mental health issues, particularly for those with a history of SV.⁹² Another possible explanation could be that SV victims' concerns about the impact on their unborn child and potential adverse neonatal outcomes might exacerbate psychological morbidity.⁹³ Furthermore, when SV is the cause of a pregnancy, it is reasonable to hypothesise that this may further elevate the risk of poor mental health during the pregnancy. Our findings align with previous studies indicating that a history of lifetime SV was associated with depression during the perinatal period⁹⁴; for example, a meta-analysis by Lombardi *et al* found that women with a history of SV had a 51% higher odds of postpartum depression.⁹⁰ This implies a need for health service providers to integrate SV and mental health screenings into ANC, which has previously been a very limited practice in sub-Saharan African countries.⁹⁵ Similarly, the subgroup analysis in our study indicated that poor mental health conditions may be pronounced among marginalised groups of women, such as those from conflict settings and those from specific population groups experiencing different forms of inequity.⁹⁶ For women living in conflict settings, the compounded trauma, disruption of support systems and limited access to protective services may exacerbate the impacts of SV on their mental health conditions. Additionally, the study findings indicate that women from specific marginalised population groups, such as refugees, women from informal settlements or sex workers, may face even greater challenges in terms of their mental health conditions. These intersecting social positions and forms of structural inequity could compound vulnerability to poor mental health conditions on top of SV. As such, it is critical to recognise the complexity of these issues and design inclusive approaches to provide a comprehensive mental health service for marginalised women survivors of SV in sub-Saharan Africa.

In the current study, the strength of the association between the type of mental health condition and SV varied by the type of SV and type of perpetrator. For instance, the meta-analysis results indicated that women who experienced both rape and an additional type of SV had the highest pooled OR for PTSD (OR 3.02; 95% CI 1.73 to 5.27) compared with women who did not report experiencing SV. These findings imply that service providers should be particularly alert to the risk of mental ill health for women who have experienced multiple types of SV (both rape and an additional type of SV), with a focus on ensuring access to support, diagnosis and treatment.

Strengths and limitations

This systematic review and meta-analysis had several strengths, including its comprehensive search strategy and rigorous article screening process. For instance, the methodological quality of all the included studies was strictly assessed by all the reviewers, and studies that did not use internationally validated tools to measure the exposure and outcome variables were excluded. Additionally, this meta-analysis considered the adjusted ORs to estimate pooled effects, and moderators were adjusted.

However, this review has several limitations. First, most studies used cross-sectional designs, preventing causal inferences about the relationship between SV and poor mental health. Therefore, longitudinal research is needed to determine the direction of this association. Future research should also include qualitative studies to better understand the association between SV and mental health, as well as the role that country context plays.

Second, best practice when measuring the prevalence of SV is to ask respondents direct questions about specific acts of SV over a defined period, rather than using questions about whether or not the respondent has been 'raped' or 'sexually abused'.⁴ Interpretations about what constitutes rape or abuse can vary between individuals and cross-culturally, which may lead to underreporting.⁴ While most studies reached the required threshold for the methodological quality of the measurement of SV, some studies^{13 21 71 86} used measures and instruments that would have led to underreporting. It should also be noted that studies using remote methods due to the COVID-19 pandemic (eg, phone interviews) likely resulted in underreporting due to safety and confidentiality concerns.⁵⁰ Future SV research using remote methods should draw from the emerging evidence base about best practice approaches to remote data collection, to ensure the safety of respondents and data quality.⁹⁷

Third, while the search strategy was extensive, this review also only included English language articles, so relevant studies in other languages may have been missed.

Finally, this study focused on a quantitative synthesis, which resulted in the absence of qualitative data that could have potentially offered deeper insights into the lived experiences of survivors.

Implications for policy, practice and research

Policy

Policy-makers in sub-Saharan Africa should be aware of the burden of mental ill health among SV victims and support a health systems response to violence against women. This includes developing national action plans that include 'health system actions, budgets and staffing'. These plans should recognise and address the complex intersection of mental health and SV. Furthermore, policy-makers should develop necessary strategies, guidelines, standard operating procedures, and management protocols and standard screening tools considering the most common poor mental health outcomes among SV victims. Developing standard screening tools for diagnosing mental health issues should involve engaging senior clinicians with expertise in both SV and poor mental health management. These tools can then be approved by national policy-makers. Once approved, the tools should be distributed to service-providing institutions, accompanied by proper training for healthcare providers on how to use them effectively to diagnose mental health conditions among SV survivors.

Practice

The integration of comprehensive SV management services into existing service outlets, such as ANC clinics, is vital to expand accessibility of services. Antenatal clinics should be used to screen SV and mental ill health to link for appropriate services. Service providers should also be well trained in mental ill health diagnosis, management and referral for SV victims. Collaboration across sectors—mental health, SV, domestic and family violence—is vital to offer victim-survivors effective care. Additionally, campaigns to raise awareness, reduce stigma and promote mental health support in underserved settings should be prioritised. Most importantly, societal and educational interventions are needed to prevent all forms of violence against women from happening in the first place.

Research

Future research in sub-Saharan Africa should involve the use of longitudinal study designs to understand the risk factors and long-term impacts of SV. Future systematic review research should focus on qualitative studies to better understand the association between SV and mental health, as well as the role that country context plays.

CONCLUSIONS

This systematic review and meta-analysis demonstrated that exposure to SV was consistently associated with a range of mental health conditions among women in sub-Saharan Africa. Lifetime experience of SV reported during antenatal periods and in conflict settings appeared to confer an even stronger association with poor mental health. Experiences of multiple types of SV (both rape and non-rape) also strengthened the association with poor mental health.

Thus, policy-makers should recognise the common mental health conditions among women who have experienced SV and develop appropriate strategies and screening tools for all service delivery points. Additionally, mental health service providers and health practitioners should prioritise screening for these conditions in patients with a history of SV, integrating SV and mental health screening tools into ANC services.

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REFERENCES

- 1 World Health Organization. Violence info – sexual violence. 2022. Available: <https://apps.who.int/violence-info/sexual-violence/>
- 2 Women's Aid. Domestic abuse is a gendered crime: women's aid federation of England. 2022. Available: <https://www.womensaid.org.uk/information-support/what-is-domestic-abuse/domestic-abuse-is-a-gendered-crime/>
- 3 RAINN. Victims of sexual violence: statistics. 2023. Available: <https://www.rainn.org/statistics/victims-sexual-violence>
- 4 Violence against women prevalence estimates, 2018: global, regional and national prevalence estimates for intimate partner violence against women and global and regional prevalence estimates for non-partner sexual violence against women. Geneva World Health Organization; 2021.
- 5 Sardinha L, Maheu-Giroux M, Stöckl H, *et al*. Global, regional, and national prevalence estimates of physical or sexual, or both, intimate partner violence against women in 2018. *Lancet* 2022;399:803–13.

- 6 Agardh A, Tumwine G, Asamoah BO, *et al*. The invisible suffering: sexual coercion, interpersonal violence, and mental health—a cross-sectional study among university students in south-western Uganda. *PLoS One* 2012;7:e51424.
- 7 Abelson A, Lyons C, Decker M, *et al*. Lifetime experiences of gender-based violence, depression and condom use among female sex workers in Cameroon. *Int J Soc Psychiatry* 2019;65:445–57.
- 8 Tenkorang EY. Physical, sexual, and psychosocial health impacts of child abuse: Evidence from Ghana. *Adv Life Course Res* 2023;57:100559.
- 9 Munala L, Welle E, Okunna N, *et al*. The Impact of Macroeconomic Policies on Healthcare Delivery in Kenya: An Analysis of the National Sexual Violence Prevention and Care Response. *Int Q Community Health Educ* 2021;42:73–83.
- 10 Amone-P'Olak K, Ovuga E, Jones PB. The effects of sexual violence on psychosocial outcomes in formerly abducted girls in Northern Uganda: the WAYS study. *BMC Psychol* 2015;3:46.
- 11 Belete H, Misgan E, Mihret MS. The Effect of Early Childhood Sexual Abuse on Mental Health Among Postpartum Women Visiting Public Health Facilities in Bahir Dar City, Ethiopia: Multicenter Study. *Int J Womens Health* 2020;12:1271–81.
- 12 Ashenafi W, Mengistie B, Egata G, *et al*. The role of intimate partner violence victimization during pregnancy on maternal postpartum depression in Eastern Ethiopia. *SAGE Open Med* 2021;9:2050312121989493.
- 13 Belete H, Misgan E. Suicidal behaviour in postnatal mothers in northwestern Ethiopia: a cross-sectional study. *BMJ Open* 2019;9:e027449.
- 14 Cange CW, Wirtz AL, Ky-Zerbo O, *et al*. Effects of traumatic events on sex workers' mental health and suicide intentions in Burkina Faso: a trauma-informed approach. *Sex Health* 2019;16:348–57.
- 15 MacGregor KE, Villalta L, Clarke V, *et al*. A systematic review of short and medium-term mental health outcomes in young people following sexual assault. *J Child Adolesc Ment Health* 2019;31:161–81.
- 16 Machisa MT, Christofides N, Jewkes R. Structural Pathways between Child Abuse, Poor Mental Health Outcomes and Male-Perpetrated Intimate Partner Violence (IPV). *PLoS One* 2016;11:e0150986.
- 17 Moher D, Liberati A, Tetzlaff J, *et al*. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *PLoS Med* 2009;6:e1000097.
- 18 Dettori JR, Norvell DC, Chapman JR. Fixed-Effect vs Random-Effects Models for Meta-Analysis: 3 Points to Consider. *Global Spine J* 2022;12:1624–6.
- 19 Jonathan J, Deeks JPH, Altman DG, *et al*. Cochrane handbook for systematic reviews of interventions version 6.3 (updated February 2022). In: Deeks JHH, Altman DG, eds. *Cochrane handbook for systematic reviews of interventions*. Cochrane, 2022.
- 20 Amone-P'Olak K, Elklit A, Dokkedahl SB. PTSD, mental illness, and care among survivors of sexual violence in Northern Uganda: Findings from the WAYS study. *Psychol Trauma* 2018;10:282–9.
- 21 Beksinska A, Jama Z, Kabuti R, *et al*. Prevalence and correlates of common mental health problems and recent suicidal thoughts and behaviours among female sex workers in Nairobi, Kenya. *BMC Psychiatry* 2021;21:503.
- 22 Dossa NI, Zunzunegui MV, Hatem M, *et al*. Mental Health Disorders Among Women Victims of Conflict-Related Sexual Violence in the Democratic Republic of Congo. *J Interpers Violence* 2015;30:2199–220.
- 23 Familiar I, Muniina PN, Dolan C, *et al*. Conflict-related violence and mental health among self-settled Democratic Republic of Congo female refugees in Kampala, Uganda - a respondent driven sampling survey. *Confl Health* 2021;15:42.
- 24 Hansrod F, Spies G, Seedat S. Type and severity of intimate partner violence and its relationship with PTSD in HIV-infected women. *Psychol Health Med* 2015;20:697–709.
- 25 Jewkes R, Ottembe K, Dunkle K, *et al*. Sexual IPV and non-partner rape of female sex workers: Findings of a cross-sectional community-centric national study in South Africa. *SSM Ment Health* 2021;1:ne.
- 26 Kaminer D, Hardy A, Heath K, *et al*. Gender patterns in the contribution of different types of violence to posttraumatic stress symptoms among South African urban youth. *Child Abuse Negl* 2013;37:320–30.
- 27 Lambert JE, Denckla C. Posttraumatic stress and depression among women in Kenya's informal settlements: risk and protective factors. *Eur J Psychotraumatol* 2021;12:1865671.
- 28 Lee KS, Wolke D, Bärnighausen T, *et al*. Sexual victimisation, peer victimisation, and mental health outcomes among adolescents in Burkina Faso: a prospective cohort study. *Lancet Psychiatry* 2024;11:134–42.
- 29 Luo J, Zamar DS, Ogwang MD, *et al*. Congo Lyec (Healing the Elephant): Probable post-traumatic stress disorder (PTSD) and depression in Northern Uganda five years after a violent conflict. *J Migr Health* 2022;6:100125.
- 30 Machisa MT, Chirwa E, Mahlangu P, *et al*. Suicidal Thoughts, Depression, Post-Traumatic Stress, and Harmful Alcohol Use Associated with Intimate Partner Violence and Rape Exposures among Female Students in South Africa. *IJERPH* 2022;19:7913.
- 31 Mahenge B, Likindikoki S, Stöckl H, *et al*. Intimate partner violence during pregnancy and associated mental health symptoms among pregnant women in Tanzania: a cross-sectional study. *BJOG* 2013;120:940–6.
- 32 Mhlongo MD, Tomita A, Thela L, *et al*. Sexual trauma and post-traumatic stress among African female refugees and migrants in South Africa. *S Afr J Psychiatr* 2018;24:1208.
- 33 Morof DF, Sami S, Mangeni M, *et al*. A cross-sectional survey on gender-based violence and mental health among female urban refugees and asylum seekers in Kampala, Uganda. *Int J Gynecol Obstet* 2014;127:138–43.
- 34 Nöthling J, Simmons C, Suliman S, *et al*. Trauma type as a conditional risk factor for posttraumatic stress disorder in a referred clinic sample of adolescents. *Compr Psychiatry* 2017;76:138–46.
- 35 Peltzer K, Pengpid S, McFarlane J, *et al*. Mental health consequences of intimate partner violence in Vhembe district, South Africa. *Gen Hosp Psychiatry* 2013;35:545–50.
- 36 Roberts ST, Flaherty BP, Deya R, *et al*. Patterns of Gender-Based Violence and Associations with Mental Health and HIV Risk Behavior Among Female Sex Workers in Mombasa, Kenya: A Latent Class Analysis. *AIDS Behav* 2018;22:3273–86.
- 37 Rurangirwa AA, Mogren I, Ntaganira J, *et al*. Intimate partner violence during pregnancy in relation to non-psychotic mental health disorders in Rwanda: a cross-sectional population-based study. *BMJ Open* 2018;8:e021807.
- 38 Schwartz B, Kaminer D, Hardy A, *et al*. Gender Differences in the Violence Exposure Types That Predict PTSD and Depression in Adolescents. *J Interpers Violence* 2021;36:8358–81.
- 39 Sekoni O, Mall S, Christofides N. Prevalence and factors associated with PTSD among female urban slum dwellers in Ibadan, Nigeria: a cross-sectional study. *BMC Public Health* 2021;21:1546.
- 40 Umubyeyi A, Mogren I, Ntaganira J, *et al*. Intimate partner violence and its contribution to mental disorders in men and women in the post genocide Rwanda: findings from a population based study. *BMC Psychiatry* 2014;14:315.
- 41 Wa Mwenda Jonas KA, Kisungu Basile K, Jean Baptiste KN, *et al*. Associations between posttraumatic stress symptoms and abuse experiences in child and adolescent girls from a Central African country. *J Trauma Stress* 2022;35:1432–44.
- 42 Ward CL, Artz L, Leoschut L, *et al*. Sexual violence against children in South Africa: a nationally representative cross-sectional study of prevalence and correlates. *Lancet Glob Health* 2018;6:e460–8.
- 43 Ayele S, Alemayehu M, Fikadu E, *et al*. Prevalence and Associated Factors of Depression among Pregnant Mothers Who Had Intimate Partner Violence during Pregnancy Attending Antenatal Care at Gondar University Hospital Northwest Ethiopia in 2020. *Biomed Res Int* 2021;2021:9965289.
- 44 Barchi F, Winter SC, Dougherty D, *et al*. The Association of Depressive Symptoms and Intimate Partner Violence Against Women in Northwestern Botswana. *J Interpers Violence* 2021;36:4787–805.
- 45 Belay S, Astatkie A, Emmelin M, *et al*. Intimate partner violence and maternal depression during pregnancy: A community-based cross-sectional study in Ethiopia. *PLoS One* 2019;14:e0220003.
- 46 Brar S, Rosenberg N, Phanga T, *et al*. The Association between Intimate Partner Violence and Depression Symptoms in a Cohort of Adolescent Girls and Young Women in Lilongwe, Malawi. *Ann Glob Health* 2017;83:95.
- 47 Cherenack EM, Tolley EE, Kaaya S, *et al*. Depression and Sexual Trauma Among Adolescent Girls and Young Women in HIV-Prevention Research in Tanzania. *Matern Child Health J* 2020;24:620–9.
- 48 Decker MR, Peitzmeier S, Olumide A, *et al*. Prevalence and Health Impact of Intimate Partner Violence and Non-partner Sexual Violence Among Female Adolescents Aged 15-19 Years in Vulnerable Urban Environments: A Multi-Country Study. *J Adolesc Health* 2014;55:S58–67.
- 49 Otika D, Odongo G, Muzaki RM, *et al*. Depression and suicidal ideation among adolescent girls in refugee settlements in northern Uganda. *Medicine (Baltimore)* 2024;103:e38077.
- 50 Ejigu AK, Seraj ZR, Gebrelibanos MW, *et al*. Depression, anxiety and associated factors among housemaids working in Addis Ababa Ethiopia. *BMC Psychiatry* 2020;20:231.

- 51 Erulkar A, Medhin G. Factors associated with depression among young female migrants in Ethiopia. *BMC Womens Health* 2022;22:432.
- 52 Kinyanda E, Weiss HA, Mungherera M, *et al*. Intimate partner violence as seen in post-conflict eastern Uganda: prevalence, risk factors and mental health consequences. *BMC Int Health Hum Rights* 2016;16:5.
- 53 Larsen A, Pintye J, Marwa MM, *et al*. Trajectories and predictors of perinatal depressive symptoms among Kenyan women: a prospective cohort study. *Lancet Psychiatry* 2022;9:555–64.
- 54 Leis M, McDermott M, Koziarz A, *et al*. Intimate partner and client-perpetrated violence are associated with reduced HIV pre-exposure prophylaxis (PrEP) uptake, depression and generalized anxiety in a cross-sectional study of female sex workers from Nairobi, Kenya. *J Int AIDS Soc* 2021;24 Suppl 2:e25711.
- 55 Magnusson FL, Rogathi JJ, Sigalla GN, *et al*. Does resilience moderate the effect of intimate partner violence on signs of depression among Tanzanian pregnant women: A cross-sectional study. *Acta Obstet Gynecol Scand* 2021;100:768–74.
- 56 Mahenge B, Stöckl H, Mizinduko M, *et al*. Adverse childhood experiences and intimate partner violence during pregnancy and their association to postpartum depression. *J Affect Disord* 2018;229:159–63.
- 57 Manongi R, Rogathi J, Sigalla G, *et al*. The Association Between Intimate Partner Violence and Signs of Depression During Pregnancy in Kilimanjaro Region, Northern Tanzania. *J Interpers Violence* 2020;35:5797–811.
- 58 Myers B, Browne FA, Carney T, *et al*. The Association of Recurrent and Multiple Types of Abuse with Adverse Mental Health, Substance Use, and Sexual Health Outcomes among Out-of-School Adolescent Girls and Young Women in Cape Town, South Africa. *Int J Environ Res Public Health* 2021;18:11403.
- 59 Nabayinda J, Namirembe R, Kizito S, *et al*. Correlates of Intimate Partner Violence Among Young Women Engaged in Sex Work in Southern Uganda. *J Interpers Violence* 2023;38:10749–70.
- 60 Nduna M, Jewkes RK, Dunkle KL, *et al*. Prevalence and factors associated with depressive symptoms among young women and men in the Eastern Cape Province, South Africa. *J Child Adolesc Ment Health* 2013;25:43–54.
- 61 Okafor CN, Barnett W, Zar HJ, *et al*. Associations of Emotional, Physical, or Sexual Intimate Partner Violence and Depression Symptoms Among South African Women in a Prospective Cohort Study. *J Interpers Violence* 2021;36:NP5060–83.
- 62 Pellowski JA, Bengtson AM, Barnett W, *et al*. Perinatal depression among mothers in a South African birth cohort study: Trajectories from pregnancy to 18 months postpartum. *J Affect Disord* 2019;259:279–87.
- 63 Rogathi JJ, Manongi R, Mushi D, *et al*. Postpartum depression among women who have experienced intimate partner violence: A prospective cohort study at Moshi, Tanzania. *J Affect Disord* 2017;218:238–45.
- 64 Samia P, Premji S, Tavangar F, *et al*. Adverse Childhood Experiences and Changing Levels of Psychosocial Distress Scores Across Pregnancy in Kenyan Women. *Int J Environ Res Public Health* 2020;17:3401.
- 65 Shamu S, Zarowsky C, Roelens K, *et al*. High-frequency intimate partner violence during pregnancy, postnatal depression and suicidal tendencies in Harare, Zimbabwe. *Gen Hosp Psychiatry* 2016;38:109–14.
- 66 Sherwood JA, Grosso A, Decker MR, *et al*. Sexual violence against female sex workers in The Gambia: a cross-sectional examination of the associations between victimization and reproductive, sexual and mental health. *BMC Public Health* 2015;15:270.
- 67 Tsai AC, Wolfe WR, Kumbakumba E, *et al*. Prospective Study of the Mental Health Consequences of Sexual Violence Among Women Living With HIV in Rural Uganda. *J Interpers Violence* 2016;31:1531–53.
- 68 Verelst A, Bal S, De Schryver M, *et al*. The Impact of Avoidant/Disengagement Coping and Social Support on the Mental Health of Adolescent Victims of Sexual Violence in Eastern Congo. *Front Psychiatry* 2020;11:382.
- 69 Wado YD, Austrian K, Abuya BA, *et al*. Exposure to violence, adverse life events and the mental health of adolescent girls in Nairobi slums. *BMC Womens Health* 2022;22:156.
- 70 Winter SC, Obara LM, McMahon S. Intimate partner violence: A key correlate of women's physical and mental health in informal settlements in Nairobi, Kenya. *PLoS One* 2020;15:e0230894.
- 71 Abrahams Z, Boisits S, Schneider M, *et al*. The relationship between common mental disorders (CMDs), food insecurity and domestic violence in pregnant women during the COVID-19 lockdown in Cape Town, South Africa. *Soc Psychiatry Psychiatr Epidemiol* 2022;57:37–46.
- 72 Asiimwe R, Tseng CF, Murray SM, *et al*. Association of pregnancy-related stigma and intimate partner violence with anxiety and depression among adolescents. *J Adolesc* 2022;94:270–5.
- 73 Mathur S, Okal J, Musheke M, *et al*. High rates of sexual violence by both intimate and non-intimate partners experienced by adolescent girls and young women in Kenya and Zambia: Findings around violence and other negative health outcomes. *PLoS One* 2018;13:e0203929.
- 74 Omoronyia O, Ayuk A, Nwafor K, *et al*. Association between intimate partner violence and mental health status during pregnancy: A survey among pregnant women in calabar, nigeria. *Indian J Public Health Res Dev* 2020;11:248–54.
- 75 Parcesepe AM, Cordoba E, Gallis JA, *et al*. Common mental disorders and intimate partner violence against pregnant women living with HIV in Cameroon: a cross-sectional analysis. *BMC Pregnancy Childbirth* 2021;21:178.
- 76 Woldetsadik AM, Ayele AN, Roba AE, *et al*. Prevalence of common mental disorder and associated factors among pregnant women in South-East Ethiopia, 2017: a community based cross-sectional study. *Reprod Health* 2019;16:173.
- 77 Abrahams Z, Lund C. Food insecurity and common mental disorders in perinatal women living in low socio-economic settings in Cape Town, South Africa during the COVID-19 pandemic: a cohort study. *Glob Ment Health (Camb)* 2022;9:49–60.
- 78 Cohen F, Seff I, Ssewamala F, *et al*. Intimate Partner Violence and Mental Health: Sex-Disaggregated Associations Among Adolescents and Young Adults in Uganda. *J Interpers Violence* 2022;37:2399–415.
- 79 Issahaku PA. Health implications of partner violence against women in Ghana. *Violence Vict* 2015;30:250–64.
- 80 Kisaakye P, Kafuko A, Bukuluki P. Lifetime violence and suicidal ideation among young women (18-24 years) in Uganda: Results from a population-based survey. *Front Glob Womens Health* 2023;4:1063846.
- 81 Lee N, Osborne M, Massetti G, *et al*. Associations Among Age of First Experience of Violence, Type of Victimization, Polyvictimization, and Mental Distress in Nigerian Females. *Violence Against Women* 2022;28:2992–3012.
- 82 Picchetti V, Stamatakis C, Annor FB, *et al*. Association between lifetime sexual violence victimization and selected health conditions and risk behaviors among 13-24-year-olds in Lesotho: Results from the Violence Against Children and Youth Survey (VACS), 2018. *Child Abuse Negl* 2022;134:105916.
- 83 Tilahun S, Giru BW, Snsah W, *et al*. Magnitude and associated factors of suicidal behavior among postpartum mothers attending public health centers of Addis Ababa, Ethiopia. *BMC Psychiatry* 2022;22:465.
- 84 Villaveces A, Shankar V, Palomeque F, *et al*. Association between violence and mental distress, self-harm and suicidal ideation and attempts among young people in Malawi. *Inj Prev* 2022;injuryprev-2021-044510.
- 85 Groves AK, Kagee A, Maman S, *et al*. Associations between intimate partner violence and emotional distress among pregnant women in Durban, South Africa. *J Interpers Violence* 2012;27:1341–56.
- 86 Gust DA, Gvetadze R, Furtado M, *et al*. Factors associated with psychological distress among young women in Kisumu, Kenya. *Int J Womens Health* 2017;9:255–64.
- 87 Kapiga S, Harvey S, Muhammad AK, *et al*. Prevalence of intimate partner violence and abuse and associated factors among women enrolled into a cluster randomised trial in northwestern Tanzania. *BMC Public Health* 2017;17:190.
- 88 Dworkin ER. Risk for Mental Disorders Associated With Sexual Assault: A Meta-Analysis. *Trauma Violence Abuse* 2020;21:1011–28.
- 89 Dworkin ER, Menon SV, Bystrynski J, *et al*. Sexual assault victimization and psychopathology: A review and meta-analysis. *Clin Psychol Rev* 2017;56:65–81.
- 90 Lombardi BN, Jensen TM, Parisi AB, *et al*. The Relationship Between a Lifetime History of Sexual Victimization and Perinatal Depression: A Systematic Review and Meta-Analysis. *Trauma Violence Abuse* 2023;24:139–55.
- 91 Wosu AC, Gelaye B, Williams MA. Childhood sexual abuse and posttraumatic stress disorder among pregnant and postpartum women: review of the literature. *Arch Womens Ment Health* 2015;18:61–72.
- 92 Satyanarayana VA, Lukose A, Srinivasan K. Maternal mental health in pregnancy and child behavior. *Indian J Psychiatry* 2011;53:351–61.
- 93 Alhusen JL, Bullock L, Sharps P, *et al*. Intimate partner violence during pregnancy and adverse neonatal outcomes in low-income women. *J Womens Health (Larchmt)* 2014;23:920–6.

- 94 Wosu AC, Gelaye B, Williams MA. History of childhood sexual abuse and risk of prenatal and postpartum depression or depressive symptoms: an epidemiologic review. *Arch Womens Ment Health* 2015;18:659–71.
- 95 Larsen A, Pintye J, Bhat A, *et al*. Is there an optimal screening tool for identifying perinatal depression within clinical settings of sub-Saharan Africa? *SSM - Mental Health* 2021;1:100015.
- 96 Kirkbride JB, Anglin DM, Colman I, *et al*. The social determinants of mental health and disorder: evidence, prevention and recommendations. *World Psychiatry* 2024;23:58–90.
- 97 Bhatia A, Turner E, Akim A, *et al*. Remote methods for research on violence against women and children: lessons and challenges from research during the COVID-19 pandemic. *BMJ Glob Health* 2022;7:e008460.
- 98 Kinyanda E, Weiss HA, Mungherera M, *et al*. Prevalence and risk factors of attempted suicide in adult war-affected population of eastern Uganda. *Crisis* 2013;34:314–23.