Interrupt_Violence Study Methodology for analyses

Contents

Paper: Illuminating the intergenerational cycle of violence: a network analysis

Measures for adults

Physical, emotional, and sexual child abuse and neglect experienced by adult participants during childhood was measured using the International Society for the Prevention of Child Abuse and Neglects Child Abuse Screening Tools (ICAST): adult retrospective childhood abuse was assessed using the ICAST-R (Dunne et al., 2009). Parent's own infliction of physical and emotional abuse and neglect against their child was measured using the ICAST-P (Runyan et al., 2009). *Physical and sexual abuse* experience and childhood *exposure to domestic violence* were coded into binary variables respectively as 0: never happened; 1: ever happened. Emotional abuse and neglect were coded into binary variables with 0: never-rarely and 1: monthly or more frequent. *IPV exposure* was measured for women only using the WHO domestic violence instrument which measures victimization via different acts of physical, sexual, psychological and economic abuse, and controlling behaviour. Each type of abuse was coded as a binary into 0: never happened; 1: ever happened (Garcia-Moreno et al., 2005). *Community violence experience and witnessing* were measured using items from the Social and Health Assessment (SAHA) community violence questionnaire (Weissberg et al., 1991). Community violence experience and witnessing were coded into a binary variable respectively with 0: never happened; 1: ever happened. Lifetime *peer violence victimisation and perpetration* were measured using the 12-item Zurich Brief Bullying Scales (Murray et al., 2021) and coded as a binary variable respectively with 0: never; 1: sometimes or more. *Non-partner sexual violence* and *community violence perpetration* against men and women were measured using 4 items from the UN Multi-country Study on men and violence respectively (Fulu et al., 2017) and coded as a binary variable with 0: never; 1: at least once.

Mental health measures included screening for depression, anxiety, post-traumatic stress, and psychosis. *Depression* was measured using the 9-item Patient Health Questionnaire (PHQ-9), a score of 9 was used as a cut-off (Löwe et al., 2004). *Anxiety* was measured using the 7-item General Anxiety Disorder Screener (GAD-7), a score of 8 was used as a cut-off (Löwe et al., 2008). *Post-traumatic stress* was measured using the 8-item Post-Traumatic Stress Screener (PTSD-8) using a cut-off of >2 or higher on any of the three sub-scales (Hansen et al., 2010). *Psychosis* was measured using the 8-item Community Assessment of Psychic Experiences (CAPE-8) using a cut-off of >2 on any of the items (Aloba & Opakunle, 2020, p. 8).

Attitudes towards children assessed agreement with corporal punishment and gendered parenting. *Endorsement of corporal punishment* was measured using one self-developed item on agreement with the statement, 'If you don't physically discipline your child, they will not change their behaviour'. *Endorsement of gender parenting* was measured using one item which stated, 'girl children need to be parented differently to boy children'. Both items had response options 1: strongly disagree, 2: disagree, 3: undecided, 4: agree, 5: strongly agree.

Gender-inequitable beliefs and behaviours were measured using the Gender Equitable Men's Scale for both men and women (Pulerwitz & Barker, 2008) using 8 items from the inequitable scale and 2 items specific to the South African context on lobola (bridal price) and rape. Each

item is scored on a 4-point scale ranging from 1 for strongly disagree to 4 strongly agree. A sum score was created for this measure with higher scores showing endorsement of less equitable partnership beliefs. *Inequitable relationship behaviours* were measured using the Sexual Relationship Power Scale (Pulerwitz et al., 2000). This measures power within relationships for both men and women. 8 items of the Relationship Control subscale were used with response options ranging from 1 for strongly disagree to 4 for strongly agree. A sum score was created for this measure with higher scores representing lower equity in partnerships.

Measures for children

Violence: *Child abuse* was measured using a six-item adapted version of the Parent-Child Conflict Tactics Scale suitable for young children (Straus et al., 1998). These were coded for physical, emotional and sexual abuse as 0: never happened; 1: ever happened.

Analysis

Descriptive statistics were calculated using Stata 18. Four network models were estimated in R using Pairwise Markov Random Field (PMRF) models (Epskamp & Fried, 2018). Edges represent relations between two nodes after conditioning on all other nodes. The thickness of an edge represents the magnitude of an association while the colour (red=negative; blue=positive) represents the direction of the covariance. Networks were estimated using the *estimateNetwork* function in the *bootnet* package using the *mgm* package (Haslbeck & Waldorp, 2015). The data contained both dichotomous and continuous variables and hence mixed graphical models (MGM) were constructed using the least absolute shrinkage and selection operator nodewise regressions (LASSO). Node predictability was estimated using the *mgm* package and visualised using the *qgraph* package, which places nodes that are more strongly connected closer together with edges above 0.2 visualised (Epskamp et al., 2011). 1000 bootstraps were performed using the *bootnet* package. The *networktools* package was used to establish bridge centrality metrics (1-step and 2-step) to identify nodes that are central to other nodes (Jones et al., 2021) (see supplementary material).

Model 1 included young men and women (G2) who were caregiving like a parent for children aged 0-17, model 2 included YA parent (G2) and child (G3) dyads of children they were caregiving for like a parent aged 6-17; and model 3 included caregiver (G1) and young adult (G2) dyads.

Paper: Pathways between childhood violence, intimate partner violence and the use of violence against children among young women and men in the home in South Africa

Methods

The third wave of the longitudinal Interrupt_Violence study was conducted between April 2022 and April 2024, following up 1 304 young women and men (78.4%) first recruited in 2010 using a two-stage random sample and reinterviewed in 2011/2012 (Meinck et al., 2023). Participants were recruited from two sites in Mpumalanga province, South Africa: one rural and one that was peri-urban. Mpumalanga province has some of poorest health and development indicators in the country. It has a population of 4.72 million people and 62.9% are under the age of 35 years with a population growth of 1.4 per annum. The unemployment rate was estimated to be 48.2% in 2022 with more men employed than women (Mpumalanga government, 2023). For women in the age group 15-24 years the main cause of death is HIV estimated to account for 21.9% and tuberculosis accounts for 15.1% of deaths. The maternal mortality ratio is 126 per 100 000 (Ndlovu & Padarath, 2024).

This paper used cross-sectional data from the third wave of the study. All men and women who completed wave three data collection were eligible for inclusion in the study. Participants were traced using contact information that had been collected in the first and second waves of the study (2010 – 2011). Traced participants were then verified as being the same participant that was interviewed before. A detailed informed consent procedure was conducted and those participants who provided consent were interviewed by a team of trained fieldworkers. There were two teams of six fieldworkers based at each site. We had two men who were fieldworkers at each site and four women. The questionnaire was administered in the participant's preferred language (XiTsonga; Siswati; English) at the participant's home in a place where there was auditory privacy or at another location of the participant's choice using computer-assisted personal interviewing (CAPI) for most of the interview and audio computer-assisted self-interview (ACASI) for sensitive questions, administered via Samsung tablets loaded with Kobotoolbox. This strategy of combining CAPI and ACASI has been used in other surveys on gender-based violence with vulnerable populations who may face barriers to reporting (Falb et al., 2017).

The questionnaire consisted of ten sections that included the participant's socio-demographic characteristics, children (if any), community, relationships, health, violence experiences, childhood and overcoming challenges. Questions on IPV and non-partner sexual violence were self-administered using ACASI, and participants were given headphones to listen to questions on the tablets. It took between one and two hours to complete. Encrypted data were uploaded to a server after being checked by the project manager or team leader for completeness.

Measures

The outcome measure for the analysis presented here is the intergenerational cycling of violence. Composite variables were created for the different forms of intergenerational cycling of violence. These included: Intergenerational child abuse-no IPV, 2) childhood abuse to IPV experience or perpetration, and 3) IPV to the use of violence towards their children (no personal experience of childhood abuse).

Childhood abuse was measured using the ICAST-R and consisted of seven items that asked about experiences of physical violence (Dunne et al., 2009) e.g. "*When you were growing up (before age 18), did an adult ever hit or punch you very hard?*", seven items on emotional abuse e.g. "*When you were growing up (before age 18), did an adult insult and criticize you, to make you feel that you were bad, stupid or worthless*?" and 10 items on experiences of sexual violence, e.g. "*Before age 18, did anyone touch your private parts in a sexual way, or make you touch theirs when you did not want to?*". Response categories to these questions were "yes", "no" and "I can't remember". Participants were categorised as having experienced childhood abuse if they responded "yes" to any items in any of the three categories.

IPV was measured using the WHO Multi-Country study questionnaire for women's experiences and men's perpetration (Garcia-Moreno et al., 2006). There were four items that asked about emotional abuse, five items about physical violence and five items about sexual violence. The response categories for women's experiences were "Yes" "no" and for men's perpetration that it had happened "never in my life (0); once in my life (1); a few times in my life (2); many times in my life (3)". Any reports were recoded for the different categories and then an overall variable of women's lifetime experience of IPV was generated and similarly a variable of men's perpetration of IPV.

The ICAST-P was used to measure the use of violence against children in their care (Runyan et al., 2009). Nine items asked about different acts of physical violence, and the response categories included "never in my life (0); not in the past year but it has happened before (1); once or twice (2); several times a year (3); about once a month (4); several times a month (5); once a week or more (6)". Any report of physical abuse was included in the measure. For emotional abuse there were seven items with similar response categories. Participants were categorised as having experienced emotional abuse if they responded "several times a year (3); about once a month (4); several times a month (5); once a week or more (6)" to the question. The reason for this was that emotional abuse is described as a repeated behaviour.

We selected variables that measured protentional mechanisms or pathways in intergenerational cycling of violence. These included mental health, separate variables were based on having symptoms of depression (PHQ9) (Kroenke et al., 2001), anxiety (GAD-7) (Löwe et al., 2008), post-traumatic stress disorder (PTSD8) (Hansen et al., 2010) and / or suicidality measured through items that asked about suicidal ideation and attempts. We used the cut points for the various measures to identify probable depression, anxiety, PTSD and or suicidality and created binary variables.

Food insecurity, another potential mechanism, was measured through the HFIAS with four items that asked whether member of the household had skipped meals or gone to bed hungry because there was not enough to eat. Any report of food insecurity was categorised in the binary variable as a 1 and no reports as a 0. Death of a caregiver was measured using two items: one that asked about the death of a mother, father or both parents and a second question on the death of another primary caregiver, including a grandparent. A positive response to either or both items was coded as 1 and no experience was coded as a 0. Substance abuse was measured through items about the frequency of alcohol or drug use. If a participant score above the cut point on the AUDIT (Saunders et al., 1993) or reported any drug use on the ASSIST they were categorised as 1 otherwise they were categorised as a 0.

For women, we created a variable capturing early pregnancy if they reported a pregnancy between the ages of 13 and 18 years. Gender attitudes were measured with the Gender

Equitable Men's Scale which was adapted for women (Pulerwitz & Barker, 2008). Items on this eight-item scale included statements like "A woman's most important role is to take care of her home and cook for her family" and "To be a man, he needs to be tough" with a four-point Likert scale from "strongly disagree" to "strongly agree". The responses were summed to create score. A higher score was indicative of less equitable gender attitudes. The Cronbach's alpha for women was 0.80.

We measured gendered parenting attitudes through two items that asked about parenting boys and girls differently. It was measured using one item which stated, 'girl children need to be parented differently to boy children'. The two items were summed and we used the score in the analysis. Endorsing corporal punishment was measured through an item that asked, 'If you don't physically discipline your child, they will not change their behaviour'. Both used a Likert scale (1) strongly disagree, (2) disagree, (3) undecided, (4) agree, (5) strongly agree. We recoded this item into a binary variable.

We conducted factor analysis of the Parental Stress scale (Louie et al., 2017) and identified three factors. We identified a sub-scale measuring financial stress and overwhelm consisting of three items.: "Having child(ren) has been a financial burden" "It is difficult to balance different responsibilities because of my child(ren)." and "I feel overwhelmed by the responsibility of being a parent." The Cronbach's Alpha was 0.67. We summed the items to create a score which was used in the analysis.

Ethics

Ethical approval for the study was obtained from the University of Edinburgh, University of the Witwatersrand, North West University and Mpumalanga Department of Health ethics committees. A distress protocol was in place and two full-time social workers were employed to respond to referrals.

Analysis

The primary outcome for the analysis was intergenerational cycling of family violence. There were three patterns capturing the cycling of violence: Intergenerational child abuse-no IPV, 2) childhood abuse to IPV experience or perpetration, and 3) IPV to the use of violence towards their children (no personal experience of childhood abuse). There was no missing data on key outcome variables. We recoded data to create the derived variables that we used in analysis. We also used multivariable logistic regression modelling to test for hypothesised mechanisms associated with intergenerational cycling of violence using STATA 17. These hypothesised pathways included mental health challenges, poverty as measured by food insecurity, experiences of hardship in childhood, for women having an early pregnancy as well as gender attitudes and beliefs and attitudes that endorsed corporal punishment for both women and men. Using M-Plus, we specified a fully interactive path model for young women to analyse the underlying pathways that included the mediation of anxiety, PTSD and suicidality based on the theoretically informed a priori hypothesis and the observed associations that were significant in the prior regression models.

Paper: Understanding how violence is transmitted across generations? An in-depth multiple case study of families in South Africa

Methods

Study design, setting, and participants

This qualitative research was conducted as part of a mixed-methods longitudinal cohort study in Mpumalanga, South Africa; a three-wave longitudinal study of adolescents recruited in 2010/2011 (n=1664) and followed up in 2011/2012 (n=1648) and 2022/2024 (n=1304) (masked for review). From the third wave, a portion of those experiencing violence, as determined by responses to questionnaire items, were invited to participate in in-depth interviews after providing written consent (for self and/or minor) and assent (if children) using arts-informed methods (n=77). These interviews were conducted with young adults (n=33), their caregivers (n=20) and the young adults' oldest child (n=24).

From this group of qualitative participants, 7 families were purposively selected based on family members' childhood exposure to violence, current exposure to violence and parenting practices. We intentionally sought stories of participants known to experience violence in childhood but who spoke of changes in their own parenting or relationship choices and contrast these with stories where continuity of violence seemed present, to compare changes of violence experience over time with continuity. Families were invited to participate in a follow up in-depth interview, at a time convenient to them, focused on experiences and perceptions of violence over their lives. Typically, interviewers visited one family at a time and conducted three individual interviews in one sitting, i.e. with the caregiver, the young adult and the child, resulting in being at the family home for a long period. If children were at school during the day, their interviews took place when they got home later. Interviews were conducted either in the interviewer's car, or typically outside in the yard, away from the house and others, to ensure confidentiality. The study had a rigorous distress protocol and referral system to ensure participant safety.

This study used a multiple case study design. Multiple case studies involve selecting two or more cases (in this instance, families that were the unit of analysis) that share common characteristics, but also differ in some respects, to compare and contrast features to understand a phenomenon and identify patterns from cross case analysis (Adams et al., 2022). This method is known to facilitate exploration of the complexity of a phenomenon and undertaken in this instance to understand the mechanisms and risks of intergenerational transmission and potential interruption of violence within families.

Data collection

The first round of family in-depth interviews (n=20/38) was conducted between October 2022 – June 2023 by four qualitative researchers trained in conducting sensitive research within multigenerational families and in the use of arts-informed research methods. The interview guide was pilot tested before being used (masked for review). The arts-informed methods included Kinetic Family Drawings, River of Life method, and sandboxing, to elicit participant narratives around experiences of violence. For more information on these methods and their application in violence research, please see (masked for review). These methods were used to facilitate storytelling and personal narratives of participants, they were

not analyzed by the team per se. We found them effective in rendering 'the familiar strange' (Mannay, 2010) that led to increased insight and reflection on the part of participants of their lived experiences of violence. Interviews were conducted in English, SiSwati or XiTsonga depending on preference. Researchers completed fieldnotes after each interview.

The second round of family in-depth interviews with the same participants (n=18/38, n=2 lost to follow up) was conducted in December 2023 by two researchers (one was an interviewer in the first round). The interviews, lasting approximately 45-90 minutes, began with participants creating a free drawing describing their experiences of violence. The drawing was used to facilitate discussion; the arts-informed practice was familiar from prior interviews. The drawing showcased what participants remembered from prior interviews and highlighted what they chose to share in the interview that day. Although there was an interview guide, interviewers were conversant with first-round transcripts and were intentional about asking nuanced questions to probe around violence experience pertaining to participant particulars, bridging narratives from first to second interview. Fieldnotes were written after every individual interview and a family-focused fieldnote summarized findings across interviews and within families identifying patterns and inconsistencies within the family system. All interviews were audio recorded, translated and transcribed into English.

Positionality

The first-round interviewers are Black, South African researchers fluent in multiple South African languages. Three identify as women and one as a man. All were enrolled in postgraduate study in public health at the time of interviewing participants. This group met weekly to discuss interviews and debrief whilst infield and were part of weekly team meetings for the broader team where interviews, interviewer experiences and themes were discussed collectively over the period of data collection. These interviewers were acquainted with the cultural practices of the participants and the region the study was undertaken in. They were also able to apply this understanding of language and culture to interview older adults, younger adults and children around sensitive and personal experiences with appropriate respect and culturally sensitive consideration.

The two interviewers engaged in the second-round were infield together during data collection, were part of the team that analyzed the first round of interviews, then together, analysed the multiple case study data. One interviewer is a Black, South African postgraduate student, with 4 years experience conducting qualitative interviews, with expertise in interviewing young children. Having conducted many first round then second round interviews (and being present for all second round interviews), she spent many hours at participant homes, engaging formally and informally with family members and the circumstance of participant's lives, and was able to use these observations to inform analysis. The other interviewer is a White, South African researcher and therapist with over 25 years' experience in conducting qualitative interviews and clinical therapeutic practice with trauma affected and marginalized victims/survivors of gender-based violence. She was a therapist specializing in trauma and bereavement for years before she became a researcher and her 'practice wisdom' (the combination of one's own values, the values of one's profession, empirical and tacit knowledge, prior practice experience and critical reflection (Samson, 2015), or clinical judgment lent insight into family system dynamics and violence transmission. She trained and mentored all researchers collecting qualitative data.

Both researchers have a genuine openness and curiosity about participant lived experience across the life course, are able to contain difficult emotions, and understand

complexities of victimization and perpetration in the same person and within family systems (i.e. within interpersonal relationships and parenting roles), particularly around highly sensitive research topics engaging in trauma informed questioning and responsiveness. The student researcher acted as interpreter when the other was interviewing participants if interviews were preferred in languages other than English. Both recognize their privilege in comparison to the participants, particularly the White researcher who benefited historically due to race and who was mindful to check facts, impressions and interpretations with others on the team who might be considered more 'insiders' on account of race and language.

Data analysis

The first round of transcripts were thematically coded by 5 researchers using MAXQDA 2022 (VERBI Software., 2022). Researchers created initial broad codes to develop a codebook based on the interview guide and insights derived from data collection (Creswell, 2014). Then all analysed the same three transcripts of one family (i.e interviews with the young adult, caregiver and child) using this codebook where each broad code was applied to each transcript to develop fine codes through an inductive approach, ensuring meaning was derived from the data itself rather than imposing pre-determined ideas (Miles, 2020). These codes were discussed for consensus and the codebook was revised before coding the entire data set, and throughout the analysis phase during weekly meetings, revising or adding codes to reflect themes that were not captured within the initial codebook. The first round of coding followed a more structured approach to thematic analysis, utilizing a team and qualitative coding software ensuring accuracy of coding by way of a codebook and summarizing or describing the data collected in the first phase.

The 7 families purposively selected for follow-up interviews were grouped and their transcripts revisited and discussed by the interviewers of the second round before follow-up interviews commenced. The second phase of data collection led to a reflexive thematic analysis of all interviews undertaken with the 7 families, using Braun & Clarkes 6 phases of analysis (Braun & Clarke, 2006), moving from description to interpretation in a recursive and iterative engagement of analysis (Byrne, 2022). This framework is useful in its explanatory power or ability to generate theory (Braun & Clarke, 2021b) and is highly reliant on researcher subjectivity as a resource in analysis, recognizing that meaning is situated in context, and where researcher reflexivity is prioritized (Braun & Clarke, 2021a). Themes, or 'central organising concepts' are actively created by the researcher (Braun & Clarke, 2021b). The theory that underlies this analysis is situated in attachment theory, social learning theory, and recognizing complex trauma's effect on parenting, and this was the lens through which analysis was conducted. Manual coding was both theory-driven (deductive) and data-driven (inductive) to aligned with an abductive approach to analysing the data. The theories served as an influence in data coding and consideration of ultimate themes for analysis; they did not specify a predetermined structure to code the data within or assess the data against (Braun & Clarke, 2021b). Transcripts and fieldnotes were analyzed sequentially within families to detect themes and patterns, thereafter they were similarly analyzed across families. We approached coding as 'consciously curious' researchers (Trainor & Bundon, 2021). All transcripts were read and reread before they were coded. Data extracts were then matched to codes that led to some codes being merged. From this, themes developed and were critiqued; some codes were shifted throughout the theme development phase. A manuscript was developed. After this, themes were reconsidered and consolidated in the last meta-analysis of the findings to deliver the final manuscript with 3 themes with unique centralizing concepts.

For the second round of analysis, genograms were also employed based off interview data from both rounds of interviews to determine and understand family structure and dynamics. One genogram was produced per family to highlight family connections across three generations (caregiver, young adult and child), i.e. relationship status circumstances such as marriage or informal arrangements with romantic partners over time, number of children borne to which partner, caregiving arrangements indicating who was raising each child in the household and for how long, whether fathers were present or absent and known to their children, levels of adolescent pregnancies across generations, disclosed child or adolescent abuse (experience and perpetration), IPV experience etc. This was a valuable visual tool to depict the family as the unit of analysis, a kind of data display, useful in identifying patterns of violence within and across families to ascertain the *how* and *why* of intergenerational transmission, identifying within-case and cross-case comparisons of similarities and differences essential to case study research (Miles, 2014; Yin, 2018). Researchers met weekly to discuss, compare and contrast findings and reach consensus, engaging in reflection of the data throughout analysis. These meetings were audio recorded and coded for additional themes leading to a highly reflexive consideration of the data (Ide & Beddoe, 2023).

Paper: The intergenerational continuity of parenting behaviors: a longitudinal cohort study of female adolescents in South Africa

Methods

Setting, Design, Sample

Exploratory prospective longitudinal analysis of female adolescents who participated in all three waves of the Interrupt_Violence study in Mpumalanga province and were caring for a child aged 0-17 at Wave 3 (n=549, 60.1% of Wave 1 sample). At Wave 1, census enumeration areas in one health district were randomly selected, and one adolescent aged 10-17 (n = 913 females) was surveyed per household (Meinck et al., 2016). Fieldworkers administered interviews primarily in Siswati and Xitsonga. Respondents who participated at Wave 1 were followed up one year later in Wave 2 (2011, n = 905 females). Respondents were traced and interviewed during at Wave 3 (2022 – 2024, n = 902 females).

Measures

Dependent variable

*Use of parenting practices in adulthood***.** Items from the Comprehensive Early Childhood Parenting Questionnaire (CECPAQ) (Verhoeven et al., 2017) and ISPCAN Child Abuse Screening Tool (ICAST) were used to construct measures of parenting practices in adulthood (Wave 3). Thirty-eight items from the CECPAQ, support (13 items), structure (12 items), and stimulation (13 items) domains were examined alongside 26 items from the ICAST Parent self-report (ICAST-P) on parent use of positive discipline, physical discipline, psychological discipline, and deprivational neglect (Runyan et al., 2009). Higher scores on items within the support domain, stimulation subdomains (activity, exposure, and toys), and positive discipline domain reflect greater use of healthy parenting practices. Higher scores on items in the structure subdomain (consistency, laxness) indicate less consistent and less lax (more rigid) parenting practices. Use of parenting practices in adulthood was represented as a latent construct in all models, with items assigned to the eight identified domains.

Independent variables

Childhood experiences of healthy parenting. Two continuous variables represented average scores of childhood self-reported Wave 1-2 experience of praise (4 items) and poor monitoring/supervision (3 items) subscales of the Alabama Parenting Questionnaire (Elgar et al., 2007). Likert scale responses (0=never to 4=always) were reverse-scored for poor monitoring/supervision items, summed at each time point so higher score represented greater experience of healthy parenting practices, and then averaged across both time points. Inconsistent discipline was originally identified as a construct of parenting but not included in the final models for parsimony, as it was not associated with dependent or pathway variables.

Childhood experience of violent parenting. UNICEF self-reported measures for national-level monitoring of orphans and other vulnerable children (Meinck et al., 2016) were used to create two binary measures representing any childhood exposure to physically (2 items Wave 1, 3 items Wave 2) or psychologically abusive (3 items Wave 1, 11 items Wave 2) parenting from caregivers.

Pathway variables

Mental health in adolescence. Fourteen items from the Revised Children's Manifest Anxiety Scale (RCMAS-2) (Reynolds, 1980), appropriate for this context (Cluver et al., 2012), were used to measure anxiety symptoms (Wave 1 Cronbach's $\alpha = 0.85$, Wave 2 Cronbach's $\alpha = 0.84$). A categorical variable distinguished respondents by (0) symptoms below threshold at both time points, (1) symptoms above threshold (≥ 1 standard deviations, calculated with Z-scores) at one time points, and (2) symptoms above threshold (≥ 1 standard deviations, calculated with Z-scores) at both time points. For depression symptoms, an additive summary score of Wave 1 ten-item Children's Depression Inventory-Short Form (Kovacs, 2003) was used (Cronbach's $\alpha = 0.71$); Wave 2 data was not used due to low internal consistency ($\alpha = 0.56$). For post-traumatic stress symptoms, additive summary scores of the 28-item Child PTSD Checklist (Amaya-Jackson et al., 2000) were created for Waves 1-2 (Cronbach's α Wave 1 = 0.93, Wave 2 = 0.90, possible range 0-84) and then averaged to create one score across both waves. For suicidality symptoms, an additive summary score for the five-item Mini International Psychiatric Interview for Children and Adolescents (Sheehan et al., 1997) was created separately for Waves 1 and 2 (Cronbach's α Wave 1 = 0.85, Wave 2 = 0.87, possible range 0-4), and then averaged to create one score across both waves.

Intimate partner violence experience. One binary item represented past-year IPV experience, collected at Wave 3 and assessed using 13 items on physical (6 items), sexual (3 items), and emotional IPV (4 items) from the WHO Multi-Country Study on Women's Health and Domestic Violence Against Women (García-Moreno et al., 2005).

Adult food insecurity. One binary item represented any food insecurity in the past four weeks, which was assessed during Wave 3 using two items from the Household Hunger Scale on whether any household member went to bed hungry due to lack of food and absence of any food to eat in the house (Deitchler et al., 2010) and one additional item created for the study asking if any children went to bed hungry because there was not enough food.

Adult parental stress. Parental stress at the time of the survey was assessed via one summary score of 18 items from the Parental Stress Scale (Berry & Jones, 1995). For each item comprising the scale, responses were recorded using Likert scoring (1=Strongly disagree, 5=Strongly agree). Seven items were reverse-coded, as recommended in scoring instructions so higher score indicated greater parenting stress (possible range 18-90), and internal consistency was acceptable (Cronbach's $\alpha = 0.71$).

Ethics

Ethical approval for the Wave 1-2 study was provided by the Universities of Oxford (SSD/CUREC2/09-52), Cape Town (389/209) and KwaZulu-Natal (HSS/0254/09) and by the Mpumalanga Departments of Health and Education. Approval for Wave 3 was provided by the University of Edinburgh School of Social and Political Science Research Ethics Committee (264227), the University of the Witwatersrand Human Research Ethics Committee (M190949), North-West University Health Research Ethics Committee (NWU-00329-20-A1), and the Mpumalanga Department of Health (MP-202012-003).

Analysis

A conceptual model of parenting domains was developed through review of domains and constructs for the CECPAQ (Verhoeven et al., 2017), Alabama Parenting Questionnaire (APQ) (Frick, 1991), and ICAST-P (Runyan et al., 2009). Face validity was assessed through cognitive interviewing and pilot testing. Confirmatory factor analysis assessed the fit of the hypothesized five-factor construct to the data, using Comparative Fit Index (CFI) and Tucker Lewis Index (TLI) value > 0.90, Root Mean Square Error of Approximation (RMSEA) < 0.06, and Weighted Root Mean Square Residual (WRMR) < 0.08 thresholds to indicate good model fit to the data (Brown, 2006). Standardized (STDYX) factor loadings and modification indices informed final item selection; where multiple items from a hypothesized subdomain revealed low loadings, items hypothesized to represent a subdomain were jointly separated into a separate domain prior to removing items from the construct. Prior to modelling, item response distributions were examined and response categories recoded to ensure variation.

Structural equation modelling with standardized coefficients (STDYX) and theta parameterization was used to explore direct and indirect associations between experiences of parenting during childhood (Waves 1-2) and parenting practices used in adulthood (Wave 3). Childhood experience of parenting from their own caregivers in Waves 1-2 were correlated to each other in models, as were adulthood parenting practices. Models included correlations between symptoms of anxiety, depression, PTSD, and suicidality to reflect evidence demonstrating common comorbidities (Costello et al., 2003). Presentation of final models includes significant ($p < 0.05$) and marginal associations ($0.05 <= p < 0.10$) between predictors, outcomes, and hypothesized mediators. For Figures 1-4, significant associations are presented in black and marginal associations in blue, with p-values provided for marginal associations. Stata SE 18.5 was used for demographic statistics and variable development and MPlus 7.11 for confirmatory factor analyses and structural equation modelling.

Paper: Investigating the HIV, Mental Health and IPV syndemics and its association with parenting among women in South Africa

Methods

The present study is a secondary data analysis of cross-sectional data from the third wave of the Interrupt Violence Study (Meinck et al., 2023). This longitudinal study followed up adolescents recruited in 2010/2011 (n=1664) who were interviewed for a second wave in 2011/12 (n=1648) and in 2022-2024 (n=1293). More information on the primary study procedures are available elsewhere (Meinck et al., 2023). Participants included in these analyses were 547 mothers and non-biological primary caregivers of children (hereafter referred to as caregivers).

The study took place in two sites, one peri-urban and the other a rural community, both in Mpumalanga, South Africa. Trained fieldworkers administered a detailed questionnaire using tablets programmed with Kobo Toolbox encrypted and uploaded to a secure server. The range of topics covered included participant's demographic characteristics, mental and physical health, experiences of violence, and aspects of their own parenting practices. To facilitate comprehension and ensure accuracy, the questionnaire and consent forms were originally developed in English, thereafter, translated into Xitsonga and Siswati, and then back translated into English. Interviews only proceeded after an informed consent process. Participants were given the option to complete the questionnaire in their preferred language in a private setting, usually their homes. Each interview session lasted approximately 2-3 hours. Given the sensitive nature of the questions related to intimate partner violence victimization, an Audio Computer Assisted Self-Interview (ACASI) method was used, allowing participants to listen to the more sensitive questions through headphones and record their responses independently without the interviewer seeing these. The aim of this approach was to foster openness as well as minimize response bias. Participants were provided with a ZAR50 ($3) grocery voucher for their time and effort in participating in the research.

Ethical approval for the current analysis was granted by the Human Research Ethics Committee (HREC) of the University of the Witwatersrand (M220526). The Young_Carers study received ethical approval from University of the Witwatersrand HREC (M190949), the Ethics Research Committee in the School of Science and Political Sciences at the University of Edinburgh (264227), the Provincial Department of Health (MP-202012-003) and North-West University Health Research Ethics Committee (NWU-00329-20-S1).

Measures

The primary outcome of interest was *physical and emotional violence* ever inflicted by mothers and caregivers on the oldest child within their care. Due to the low numbers of women reporting physical neglect (2.93%), we did not include it as an outcome. Physical and emotional violence inflicted by a caregiver was assessed using the International Society for the Prevention of Child Abuse and Neglect Child Abuse Screening Tool Parent Version (ICAST-P) which has been validated for use in West, East, Southern, and Central Africa (WESCA) (Runyan et al., 2009). Nine questions asked about participant's use of physical abuse and corporal punishment and, seven questions asked about use of emotional violence (Supplementary Table 1). Participants could respond, "never in my life", "not in the past year, but it has happened before"; "once or twice" "several times a year"; "about once a

month, several times" "a month", "once a week or more". A composite variable for physical and emotional violence was created to identify instances where either use of physical or emotional violence or both were reported. If the women responded positively to any item that it has ever happened or has happened more than once, they were classified as inflicting physical and emotional violence on the child.

The primary exposure of interest is the IPV-MH-HIV syndemic. *Intimate partner violence* was measured using the World Health Organization's domestic violence instrument (Supplementary Table 1) (Garcia-Moreno et al., 2005). This tool is designed to capture the lifetime and past-year prevalence of various forms of physical, sexual, psychological, and economic abuse, along with controlling behaviour. The tool has been validated across various contexts, ensuring its reliability in capturing the multifaceted nature of IPV (Garcia-Moreno et al., 2005). Participants could respond never, once, few, or many times. Anyone responding positively to any item once or more, was classified as having experienced IPV. Mental health items included measures for suicidality, depression, anxiety, and post-traumatic stress disorder. *Suicidality* was assessed using the Ask Suicide Screening Questions (ASQ), a brief tool validated for use in both youth and adult populations (Horowitz et al., 2012). The internal consistency of the ASQ for this sample was Cronbach $\alpha = 0.762$. Participants were asked three questions, "have you wished you were dead?", "have you been having thoughts about killing yourself?" and "have you ever tried to kill yourself?". A positive response to any of the yes/no questions led to participants being classified as suicidal. *Depression* was assessed using the Patient Health Questionnaire-9 (PHQ-9). This tool operationalizes DSM-IV depression criteria into nine questions scored on a four-point scale, ranging from "not at all" to "nearly every day" (Adewuya et al., 2006). The PHQ-9 is recognized for its efficacy in screening for depression and assessing its severity across diverse populations (Adewuya et al., 2006; Kroenke et al., 2001). For this sample internal consistency of the PHQ-9 was Cronbach $\alpha = 0.854$. The PHQ-9 has a maximum score of 28, with scores interpreted as follows: 0-9 indicating mild depression, 10-14 indicating moderate depression, and 15-27 indicating moderate to severe depression. For the purpose of this analysis, individuals scoring between 10 and 27 were coded as having depression. *Anxiety* was assessed using the Generalized Anxiety Disorder Screener (GAD-7), a self-report measure designed to identify probable cases of generalized anxiety disorder and gauge symptom severity (Löwe et al., 2008). Responses are scored on a four-point scale from "not at all" to 3 "nearly every day" allowing for nuanced assessment of anxiety levels (Löwe et al., 2008). The internal consistency of the GAD-7 for this sample was Cronbach $\alpha = 0.849$. The GAD-7 has a maximum score of 21, with the score categorized as follows: 0-4 indicating no anxiety, 5-9 indicating mild anxiety, 10-14 indicating moderate anxiety and 15-21 indicating sever anxiety. For the current analysis, women scoring between 10-21 were coded as having anxiety. Finally, *post-traumatic stress disorder* (PTSD) was assessed using the PTSD-8 tool, this is an eight-item measure rated on a four-point Likert scale. For this sample the internal consistency of the PTSD-8 was $\alpha = 0.9157$. This instrument is tailored to capture the frequency of PTSD symptoms, providing a reliable measure of trauma exposure and its psychological impacts (Hansen et al., 2010). PTSD symptoms were assessed across three domains: hypervigilance/hyperarousal, avoidance and intrusion. Scoring 2 or higher on at least one item across all three domains meant participants were coded as having PTSD. To assess the overall mental health status of the women, a composite variable was constructed. This variable was indicative of poor MH if the participant reported symptoms consistent with suicidality, depression, anxiety or PTSD, on any of the screening measures used. Therefore, positive score on any of these conditions was taken as a sign of poor MH for the purposes of this study. *HIV status* was assessed through two methods. Participants either self-reported

HIV status by answering a series of questions: "Have you tested for HIV in the last year?", followed by "What was the result?" or volunteered for HIV testing at the end of the questionnaire using an oral swab self-testing kit. In South Africa self-testing kits have shown to have high acceptability, especially among young adults (Harichund et al., 2019; Ritchwood et al., 2019). Moreover, the oral swab self-testing kits have demonstrated very high accuracy, with a sensitivity of 98.2% and a specificity of 99.8% (Majam et al., 2021).

Covariates

Participants were asked about their socio-demographic characteristics. These included *age* and *education level* and the *number of children*. Participants self-reported their age which was recoded to age groups 20-25 years and 26-31 years. For education participants were asked what the highest grade was that they passed and this was then recoded into primary, some high school, and completed high school. In terms of number of children, participants were asked the question "*For how many children are you the caregiver for, like a par*ent?" and this was recoded to "one child," "two children" and "three or more children". Participants were also asked about the relationship to the child that they were caregiving for, options included biological parent, stepparent, aunt/uncle, older sibling, grandparents and other, and this was recoded to "biological child" and "non biological child".

Participants experiences of childhood abuse was measured using the International Society for the Prevention of Child Abuse and Neglect Child Abuse Screening Tool for retrospective reporting of childhood abuse (ICAST_R) (Dunne et al., 2009). Participants were asked questions about their experiences of physical, emotional and sexual abuse, neglect and exposure to domestic violence before the age of 18 years. Response options included "yes", "no" and "can't remember". A "yes" response to any of the questions led to participants being classified as having experienced abuse in childhood.

Food insecurity was measured using the Household Hunger Scale (HHS) (Deitchler et al., 2011). Participants were asked three questions to assess food insecurity over the past four weeks. The questions inquired whether there was no food of any kind in the household due to a lack of resources, whether anyone in the household went to bed hungry, and whether any children did not get enough food to eat. Response options for each question included: never, rarely, sometimes, or often. Participants who responded "rarely," "sometimes," or "often" to any of the three questions were classified as experiencing food insecurity. Substance abuse was assessed using the Alcohol, Smoking and Substance Involvement Screening Test (WHO ASSIST Working Group, 2002). Binge drinking was identified by the women's responses indicating six or more drinks on one occasion, either monthly, weekly or almost daily. Recreational substance use was assessed by questions related to the use of tobacco, cannabis, inhalants, nyaope (a street drug in South Africa comprising a mixture of low-grade heroin, marijuana, and other substances) use and other non-prescribed drugs such as cocaine and heroin, also using the same frequency response scale as alcohol abuse. A composite substance abuse variable was created which included alcohol abuse and recreational substance use. If a participant responded positively to either binge drinking or recreational drug use on a weekly or daily basis, they were coded as having substance abuse challenges.

Data Analyses

Data were analysed in four stages in Stata 17.0:

Prevalence statistics were calculated for the outcome variables (parental use of physical and emotional violence against children) and the syndemic variables (IPV, HIV, poor MH). Moreover, the prevalence for the co-occurrence of different combinations of the epidemics was also computed, this included prevalence for: MH-HIV-; IPV-HIV; MH-IPV and IPV-MH-HIV. Second bivariate and multivariate logistic regression were conducted to explore the associations between the syndemic variables (HIV, IPV experience and poor MH) and each of the violence outcomes (parental use of emotional and physical violence against children) while accounting for potential social demographic confounders (education, employment and food insecurity, substance abuse and number of children). A multivariate logistic regression with the syndemic variables for each of the outcomes was also conducted separately. Odds ratios and 95% confidence intervals were reported for all analyses.

Third, two sets of marginal effects models (one for each outcome: inflicting physical or emotional violence) were conducted to assess the cumulative syndemic exposure on child violence outcomes via predicted percentage probabilities with all the covariates from stage 2 held at mean values.

Fourth, to test the assertion that concurrent health and social problems interact to increase parental use of physical and emotional violence towards their children multiplicative interaction was also computed. Multiplicative interaction reflects the degree to which odds of an exposure are multiplied in individuals with a given risk factor compared to those without it. To assess interaction on the multiplicative scale we tested two-and three-way product terms of the syndemic risk factor exposures (IPV, MH and HIV) on the two behavioural outcomes related to child physical and emotional violence.

Additive interaction refers to the interdependent action of two or more factors to produce or prevent an effect and assesses whether the combined effect of two exposures is more or less than the sum of their separate effects (Kalilani & Atashili, 2006; Stoicescu et al., 2019). Three indices developed by Rothmann were computed to test interaction contrast (Rothman et al., 2008). To enable the measurement of synergism metrics, three dummy variables were created to calculate the joint effects of each pair of syndemic conditions (Andersson et al., 2005; Kalilani & Atashili, 2006). These were the following (1) IPV and poor MH, (2) IPV and HIV, (3) poor MH and HIV. The dummy variables were coded as follows: “0” = presence of neither epidemic (reference category), “1” = presence of epidemic A, but not epidemic B, “2” = presence of epidemic B, but not epidemic A, and “3” = presence of both conditions. A series of logistic regression were run with physical and emotional violence outcomes regressed separately on each of the dummy coded variables, adjusting for significant confounders.

To determine the level of interaction on an additive scale , three indices were computed based on the odds ratio (OR) estimates, (Kalilani & Atashili, 2006; Richardson & Kaufman, 2009).

c) The calculation of the Relative Excess Risk due to Interaction (RERI) involves determining the difference between the expected risk and the observed risk in relation to the level of risk at no exposure.

$$RERI = OR_{++} - OR_{+-} - OR_{-+} + 1.$$

c) AP, which computes the attributable proportion of risk resulting from interaction among individuals with both exposures.

AP= RERI/OR_{++} .

c) S, is the synergy index, a measure of interaction between two risk factors, calculated as the ratio of relative excess risk associated with the combined effect of the risk factors to the sum of the relative excess risks for each individual effect.

$S= (OR_{++} -1) / [(OR_{+-} -1) + (OR_{-+} +1)]$.

As per the recommendations of the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines, the separate effects of each exposure were reported, along with the joint effects, in comparison to the unexposed group as the reference category (Vandenbroucke et al., 2007) .While it is possible to calculate three-way interactions as described by Katsoulis (2020), testing for additive interaction requires that all the factors involved are true risk factors (Katsoulis et al., 2020). In our regression analysis we tested for three-way interactions but we did not calculate the RERI.

Epidemiologists consider any departure from 0 (in the case of RERI and AP) or 1 (in the case of S) as evidence of interaction. Recent advancements have provided several methods to derive confidence intervals (CIs) and p-values for these measures (Andersson et al., 2005; Assmann et al., 1996; Hosmer & Lemeshow, 1992, 1992) and software is now available that can easily perform these additional computations. Therefore, in this study, a statistically significant RERI > 0, AP > 0, or S > 1 indicated the presence of interaction on the additive scale.

Paper: Violence against children: quantitative analysis

Methods

Sample and setting

This study draws its sample from wave 3 of the [MASKED FOR REVIEW] study (MASKED 1). Wave 1 data sampled adolescents from randomly selected census enumeration areas within two health districts in the Mpumalanga province in South Africa, and wave 2 followed up participants one year later. More information on the wave 1 and 2 samples can be found elsewhere (MASKED 2; MASKED 3). Wave 3 recruited participants from wave 1—now young adults—and created a multi-generational sample by also inviting their former primary caregiver and their oldest child (oldest child in their care for whom they are caring like a parent) if the child was at least 6 years old and younger than 18 years old. As the children sampled are the focus of this study, they represent a cross-sectional sample whose parent had previously participated in earlier study waves.

The young adults were traced and invited to participate in the study (n=1304; 78.4% retention). Once they had participated in completing the quantitative questionnaire with an interviewer, they were invited to provide consent for their child to participate. If provided, their child was approached and invited to give assent to participate. More information on the consent procedures can be found elsewhere (MASKED 4). The child questionnaire was designed to be acceptable and developmentally appropriate for young children and included play- and arts-based methods to assist the child in answering the structured questions. In addition to extensive training on conducting violence research with children and adults and across generations within a family, the interviewers conducting the child questionnaires were trained to be playful and child-friendly to help the child feel at ease, and the children often took breaks during the questionnaire to play or draw with the interviewer. The questionnaire design and child-friendly interactions allowed for the child to actively engage and safely participate in a questionnaire that asked about sensitive topics such as violence and mental health. More information on the questionnaire methods, interviewer rapport, and children's responses to the questionnaire can be found elsewhere (MASKED 4; MASKED 5; MASKED 6). The child questionnaire was administered in the child's preferred language (XiTsonga; SiSwati; English) and typically took 40–60 minutes to complete, including the breaks taken to play or draw.

The project had a comprehensive distress and referral protocol and employed two full-time social workers to respond to all referral and mandated reporting needs. Children who disclosed any experiences of violence from caregivers, peers, siblings, who were exposed to violence between caregivers or in the community, or who endorsed any symptoms of poor mental health (trauma, anxiety, depression, or suicidality) were automatically referred to a study social worker who provided necessary follow-up support and additional referrals to local services, as required, in a timely manner (MASKED 1). The Interrupt_Violence study was approved by the University of Edinburgh School of Social and Political Science Research Ethics Committee (264227), the University of the Witwatersrand Human Research Ethics Committee (M190949), North-West University Health Research Ethics Committee (NWU-00329-20-A1), and the Mpumalanga Department of Health (MP-202012-003).

Measures

Violence measures. Caregiver violence: Participants were asked how frequently (always/sometimes/never) their caregiver(s) hit them as a form of discipline and follow-up items probed around what they were hit with, the more specific frequency of the hitting, and the severity of the hitting (whether they ever had any marks, injuries, or bruises from being hit). This was recoded as measures of physical abuse if they reported ever being hit (always/sometimes: 1; never: 0), being hit with a hand (0/1), being hit with an object (e.g., sjambok [heavy leather whip], wooden spoon, stick, belt, shoe, other; 0/1), and being hit severely enough to leave an injury or mark (0/1). Deprivational abuse reflected whether the child reported ever having food withheld as punishment (0/1). Emotional abuse reflected whether the child reported being shouted or screamed at by their caregiver(s) as a form of discipline (0/1). Children's exposure to family or domestic violence reflected whether they reported adults in their home ever shouting or screaming at each other, fighting with each other, or hitting each other (0/1). Children also reported how frequently they felt they were at fault for the fighting between adults in their home and how often they felt scared by the fighting (always: 2; sometimes: 1; never: 0). Children answered a 7-item scale regarding their attitudes about family violence (Graham Bermann, 1994, adapted), and their responses were summed to create a score (0–14) with higher values reflecting greater endorsement or acceptance of family violence.

Peer or sibling violence: Participants reported frequency of violent/bullying behaviors using a 9-item scale (Ruchkin et al., 2004, adapted) for frequency (a lot: 2; sometimes: 1; never: 0). They answered all the items first for behaviors from their peers and then for behaviors from their siblings or other children in their home (henceforth referred to as siblings), if they reported living with any other children. Summed items created scores for peer violence and sibling violence as the items had good internal consistency (Cronbach's alpha: peer = 0.89; sibling = 0.84), and these scores were subsequently combined to create an overall score for peer and/or sibling victimization. Binary measures—used for the composite variables for overall violence, below—for peer and sibling violence reflected scores ≥3 on their respective scales, as this indicated three of the nine assessed behaviors as occurring sometimes or at least one of the nine items occurring a lot, demonstrating a repeated pattern of behaviors to reflect repeated violence/bullying.

Community violence: Participants reported how frequently they had been attacked outside of their home and seen someone get stabbed, beaten, or shot, which were coded to reflect any direct experience of community violence (0/1) and any witnessing of community violence (0/1), respectively. Sexual violence: Children reported how often they had been non-consensually sexually touched ("touched on your private parts when you did not want to"; a lot/sometimes/never), and a follow-up item probed for who had perpetrated this harm. This was recoded to reflect any sexual abuse/assault of the child (0/1). Overall violence: Three composite variables were created to reflect any violence from their caregiver (any physical, deprivational, or emotional abuse) (0/1), any violence in their household (any caregiver violence, family or domestic violence, or sibling violence) (0/1), and any violence in their life (any household violence, peer violence, sexual abuse, or community violence (0/1).

Disclosure of violence: For children that reported certain violence experiences, follow-up questions were asked to determine whether they had ever disclosed these events to others (e.g., peers, family, friends). Children reported whether they had disclosed household violence between adults (0/1), peer violence (0/1), and sibling violence (0/1), and to whom they had made the disclosures. All participants also provided their opinion on the necessity of children disclosing household violence to someone outside of the home via one item on the

attitudes about family violence scale ("According to you, children must tell someone about the shouting or hitting in their house?").

Demographic, health, and contextual measures. Gender captured whether the participant self-identified as a boy or a girl. Age was recorded in years. A categorical age variable split participants into young childhood (age 6–9), middle childhood (age 10–12), and adolescence (age 13–17), which loosely match children's developmental stages linked to physical, emotional, and psychological states. Enrollment in school reflected participant's self-report regarding whether they attended primary school or creche [pre-school] (for youngest of the participants). Household size captured the self-reported count of individuals living in their home. Using a house plan activity (MASKED 7), children reported whether they lived with anyone who made them happy or with anyone who made them feel unsafe, which was coded to reflect the four combinations of having happy and/or unsafe people at home. Children who indicated living with an unsafe person/people reported why they felt that way, which are presented based on response themes. Participants also reported whether there were any unsafe spaces in their home or community and whether their school felt unsafe.

The mental health of participants was assessed using scales for trauma, anxiety, suicidality, and depression. Summed scale scores for trauma (0–22; Briere et al., 2001), anxiety (0–14; Boyes & Cluver, 2013), and depression (0–20; Kovacs, 1992) were created, as well as an item to reflect any suicidality (ideation (self-harm; suicide), plan, or attempt) in the last month (0/1) drawn from the 5-item MINI-KID suicidality and self-harm subscale (Sheehan et al., 2010).

Children self-reported conduct problems (e.g., frequent anger, fighting, stealing) using a 5-item scale (yes: 2; sometimes: 1; no: 0) that was summed to create a score (0–10; Goodman et al., 2004). Participants reported whether there was enough food to eat at home when they were hungry; if they answered no or sometimes, they were coded as experiencing any food insecurity (0/1), while only those who answered no were coded as experiencing severe food insecurity (0/1). Parental reports were used to assess parental stress via an 18-item scale using Likert scale (1–5) with potential scores ranging from 18–90 (Berry & Jones, 1995; Rochat et al., 2018).

Analysis. Descriptive count and prevalence statistics were generated for all categorial variables of interest, and means and standard deviations were calculated for continuous variables. Chi-squared tests and two-tailed t-tests were used to assess differences in categorical and continuous, respectively, violence measures by gender. Chi-squared tests and one-way analysis of variance tests were used to assess difference in categorical and continuous, respectively, violence measures across age groups. In cases where a two-way table resulted in frequency counts of less than 5, Fisher's exact test was used in place of a chi-squared test.

Multivariable regression models assessed the relationship between violence experiences only and violence experiences alongside contextual factors in the child's life (demographics, household, community) and mental health outcomes of interest. Linear regression was used for the continuous variables (trauma, anxiety, depression), and logistic regression was used for the binary variable (suicidality). Additional models (nested contextual factors; standardized coefficients) are presented in the Supplemental Materials.

Key for masked papers (HB paper):

Meinck, F., Woollett, N., Franchino-Olsen, H., Silima, M., Thurston, C., Fouché, A., Monaisa, K., & Christofides, N. (2023). Interrupting the intergenerational cycle of violence: Protocol for a three-generational longitudinal mixed-methods study in South Africa (INTERRUPT_VIOLENCE). *BMC Public Health*, *23*(1), 395. https://doi.org/10.1186/s12889-023-15168-y	MASKED 1
Cluver, L., Orkin, M., Boyes, M. E., Sherr, L., Makasi, D., & Nikelo, J. (2013). Pathways from parental AIDS to child psychological, educational and sexual risk: Developing an empirically-based interactive theoretical model. *Social Science & Medicine (1982)*, *87*, 185–193. https://doi.org/10.1016/j.socscimed.2013.03.028	MASKED 2
Meinck, F., Cluver, L., Boyes, M. E., & Loening-Voysey, H. (2016). Physical, emotional and sexual adolescent abuse victimisation in South Africa: Prevalence, incidence, perpetrators and locations. *Journal of Epidemiology and Community Health*, *70*(9), 910–916. https://doi.org/10.1136/jech-2015-205860	MASKED 3
Franchino-Olsen, H., Woollett, N., Thurston, C., Maluleke, P., Christofides, N., & Meinck, F. (2024). "They should ask me so that they can help me": Patterns of young children's expressed feelings and beliefs when interviewed about violence and difficult experiences. *Child Abuse & Neglect*, 106932. https://doi.org/10.1016/j.chiabu.2024.106932	MASKED 4
Franchino-Olsen, H., Christofides, N., Woollett, N., Fouche, A., Silima, M., Thurston, C., Monaisa, K., & Meinck, F. (2023). Conducting Violence Research Across Multiple Family Generations and with Young Children: Findings from a Mixed-Methods Pilot Study in South Africa. *International Journal on Child Maltreatment: Research, Policy and Practice*. https://doi.org/10.1007/s42448-023-00157-w	MASKED 5

Woollett, N., Christofides, N., Franchino-Olsen, H., Silima, M., Fouche, A., & Meinck, F. (2024). “Children Are Like Vuvuzelas Always Ready to Blow”: Exploring How to Engage Young Children in Violence Research. *Journal of Interpersonal Violence*, 08862605241230088. https://doi.org/10.1177/08862605241230088	MASKED 6
Woollett, N., Christofides, N., Franchino-Olsen, H., Silima, M., Fouche, A., & Meinck, F. (2023). ‘Through the drawings…they are able to tell you straight’: Using arts-based methods in violence research in South Africa. *PLOS Global Public Health*, *3*(10), e0002209. https://doi.org/10.1371/journal.pgph.0002209	MASKED 7

Paper: Children's narratives of violence and the effects on their well-being: Qualitative findings from a violence study with young children in South Africa

Method

Study setting

[Masked for review] is a mixed method third wave of a longitudinal and multigenerational study conducted in one health district in Mpumalanga province, South Africa. The three waves of the study were conducted through quantitative questionnaires with adolescents in 2010/2011 (n=1664), 2011/2012 (n=1648), and in 2022/2024 (n=1304). A purposive sample of young adults aged 22-32 years (n=33), who reported experiencing violence in the third wave, were recruited into the qualitative component of the study. They were invited to consent to qualitative interviews with their participating child if older than 6 years old (n=23) and caregiver (n=20). For more information on the study and its protocol refer to (Masked 1). The analysis of this paper is derived from the qualitative interviews conducted with children during the third wave of the study.

Participants

The study involved the eldest children of young adults, aged 6–12. Parents had already completed the qualitative and quantitative components and were familiar with the interview content before giving consent. Child assent was obtained afterward. A total of 23 children participated. Most lived in multigenerational households with extended family considered immediate relatives.

Ethical considerations

Children were informed that they could choose to participate or not even though their parents had given consent for their participation. To further ensure that children were not exposed to undue confusion and distress, the first person who had interviewed the child for the quantitative component of the study was involved in introducing the children to the new qualitative interviewers and social workers (who were included in the study team and who were responsible for any possible mandated reporting requirements or support). The branded study vehicle which was used by all the staff in the field also aided as a symbol of trust as it was used when all the interviewers and the study social worker came into the homes. Before each interview started, the children and their parents were informed that in the event of disclosure or observation of potential risk of harm to the child, there would a mandatory referral to the study social worker as per the South African Children's Act 38 of 2005 and all participants chose to continue with interviews. All children in this sample were referred to and seen by a social worker.

The study employed a comprehensive distress protocol that guided interviewers on how to respond to any signs of distress or dysregulation shown by the child, either spoken or through their behaviour. The social workers attended to all cases individually and linked to existing services where necessary. Experienced qualitative interviewers participated in an in-depth and in-person 3-day training that included theoretical and experiential content. Trainers included two co-investigators, one of whom is a child therapist. All the interviews were conducted in the children's home in a space that was chosen by the participant, generally outside in the yard

in an area that prevented the conversation from being overheard. For additional safety, we ensured that there was a second interviewer that was nearby during the interview to protect the child's privacy (e.g., the second interviewer would distract anyone who came to see what was happening in the interview) and reduce any risk of harm and distress.

Data collection

The lead author together with three other researchers conducted in-depth interviews that lasted approximately 25 to 60 minutes. Interviews were conducted in English, Xitsonga, or Siswati, as preferred by the child. The interviews were complemented by arts-based methods to collect richer data and included a feeling faces charades type game, sandboxing and kinetic family drawings (KFD). Feeling faces is a game used to help children express different kinds of emotions (Masked 2). Four faces drawn on a piece of paper illustrating sad, happy, angry and scared were presented to the children. These feelings were named and together the child and interviewer came up with experiences that might lead to that feeling state (Masked 2). This game aided in feeling identification, expression and understanding of feeling states. For the sandboxing method, which was inspired by sand play therapy, participants were given a plastic container half filled with sand and several mixed miniature objects which included representations of human beings, animals, buildings, and plants, etc. Using the sandbox and miniature objects, children were asked to either illustrate their lives or an experience of violence which came to mind (Masked 2). For the KFD, participants were asked to draw on a single piece of paper "a picture of their family doing something" (Masked 2). This led to a discussion of the drawing and gave interviewers a sense of the family and its dynamic. The use of these methods also made way for rapport building between the participant and interviewer, and helped children express complex feelings and thoughts (Masked 3; Masked 2; Zhou, 2009). None of the children refused participation with any of the methods. All participants were given refreshments during the interview and stickers to thank them for their time.

Data analysis

Audio recordings of qualitative activities were translated and transcribed by skilled transcribers and three members of the research team. These transcripts were thematically analysed by five members of the research team using MAXQDA 22 (Verbi Software, 2021). Two researchers developed an initial codebook based on the interview guide and weekly meetings held during the data collection phase. Three transcripts from one family were chosen to be coded using the initial codebook by all members of the teams, this allowed for the creation of more fine codes using an inductive approach. It also allowed for researchers to have a blend of data and theory driven codes, this together with having multiple coders made way to gain richer and more nuanced insights (Braun & Clarke, 2021). After this process, transcripts were allocated to each member to code independently.

For the current analysis, all children's transcripts (n=23) were analysed further by the lead author to develop themes that were related to children's experiences and perceptions of violence. Codes from the initial analysis were adopted, with the addition of more inductive fine codes. Meetings were held with two members of the research team to discuss the insights and findings.

The second level analysis was conducted by Person 1 and Person 2, each bringing unique perspectives shaped by their personal and professional experiences. Person 1 identifies as a Black South African woman with four years of experience conducting qualitative research using multiple South African languages. Her previous work in clinical research and public

health involved qualitative interviews with children, giving her a deep understanding of the complexities and sensitivities of working with young participants. As the primary interviewer, Person 1's ability to communicate fluently in the participants' languages, and the 'language of play' was instrumental in building trust and fostering an environment where children felt seen and heard.

Person 2 is a white South African woman with 25 years of experience in qualitative research and clinical therapeutic practice, particularly with survivors of child, adolescent and family violence. She practices as a therapist for years before she became a researcher, which brought valuable insights into mental health challenges, trauma and children's presentation. She is trained in the fields of psychology, art therapy and play therapy, supporting these non-verbal and participatory approaches to both therapy and research. She trained and mentored all researchers collecting qualitative data.

Both Person 1 and Person 2 share a deep curiosity and respect for participants' lived experiences and value the power of play and arts-based methods in engaging child participants. They approached this study with an awareness of the privilege they hold in comparison to the participants and a dedication to minimizing power imbalances in their interactions. Their combined perspectives enriched the research process, blending Person 1's cultural and linguistic alignment with participants and Person 2's clinical expertise. Recognizing the potential influence of their own positionalities on data interpretation, they engaged in regular reflective discussions to address biases and ensure that the analysis remained grounded in the participants' realities.

Masked details:

Masked 1	Interrupt_Violence	
Masked 2	Woollett et al., 2023	Woollett, N., Christofides, N., Franchino-Olsen, H., Silima, M., Fouche, A., & Meinck, F. (2023). 'Through the drawings…they are able to tell you straight': Using arts-based methods in violence research in South Africa. *PLOS Global Public Health*, *3*(10), e0002209. https://doi.org/10.1371/journal.pgph.0002209
Masked 3	Franchino-Olsen et al., 2024;	Franchino-Olsen, H., Woollett, N., Thurston, C., Maluleke, P., Christofides, N., & Meinck, F. (2024). "They should ask me so that they can help me": Patterns of young children's expressed feelings and beliefs when interviewed about violence and difficult experiences. *Child Abuse & Neglect*, 106932.https://doi.org/10.1016/j.chiabu.2024.106932
Person 1	NW	
Person 2	PM	

Paper: Barriers and facilitators to childhood abuse disclosure

Quantitative component

Recruitment

Originally, 1,665 participants were recruited into the 'Young Carers' cohort study in Mpumalanga, which investigated the effects of violence in adolescence and HIV on families. Wave 1 collection was conducted in 2010/2011 with a follow-up in 2011/2012, with interviews 1 year apart for each participant. Adolescents were recruited from randomly selected census enumeration areas within two health districts in Mpumalanga province. Wave 3, INTERRUPT_VIOLENCE, is a follow up of the original cohort 'Young Carers' in Mpumalanga 10 years after the last interview (Meinck et al., 2023). This current study conducted secondary data analysis of the cross-sectional wave 3 dataset including data from (n=883) young adults aged 22 – 33 who had experienced physical, emotional or sexual child abuse.

Procedure

Young adults completed confidential 90–120 minutes study-specific questionnaires with the help of trained local interviewers. Questionnaires were translated into two local languages, Siswati and Xitsonga, and checked with back translation. Young Adults participated in the language of their choice. All survey items were pre-piloted with vulnerable youth to investigate age-appropriateness and cultural sensitivity. Data was collected using questionnaires on tablets with the help of experienced research assistants whose training is detailed elsewhere (Monaisa et al., under review). The protocol is described in detail by Meinck et al. (2023).

Ethics statement

The INTERRUPT VIOLENCE study received ethical approval from the University of Edinburgh School of Social and Political Science Research Ethics Committee (264227), the University of the Witwatersrand Human Research Ethics Committee (M190949), North-West University Health Research Ethics Committee (NWU-00329-20-A1), and the Mpumalanga provincial Department of Social Development (MP-202012-003). This current study obtained ethical approval from North-West University (NWU-00280-21-A1**).** Informed consent was sought from the young adult participants. Information and consent sheets were read aloud to the young adults among whom low literacy rates prevailed, otherwise the young adults would read for themselves, and clarification questions were answered until participants were satisfied and gave written consent. Participation was voluntary and young adults were able to terminate the interview at any time. All participants received a R50 gift voucher irrespective of completion of the questionnaire. Confidentiality was maintained throughout the study unless participants were considered at risk of significant harm or requested help from the research team who would then refer the matter to the study's social worker, as detailed in the consent procedures. Stringent referral and distress protocols were in place.

Data collection

Measures

Childhood abuse: The International Society for the Prevention of Child Abuse and Neglect (ISPCAN) Child Abuse Screening Tool (ICAST-R) is a self-report measure that was developed for adults to assess the prevalence and frequency of child abuse experiences retrospectively (Dunne et al., 2009). The ICAST-R consists of multiple sections that cover different types of abuse, including physical, emotional, and sexual abuse, as well as neglect. Participants are asked to recall and report their experiences of abuse during childhood and rate each item on a scale indicating the frequency of the abuse (e.g. never, sometimes, often, very often), and severity (e.g. how much did it harm you? a great deal, seriously, mildly, not at all). The ICAST-R has shown good reliability and validity in previous studies, with high internal consistency and good construct validity, as it correlates well with other established measures of child abuse and related constructs (Meinck et al., 2022). A binary variable was created with >1 experiences of abuse= 1 and 0 experiences of abuse= 0. The researcher-developed items assessed whether young adults who had experienced violence in childhood, accessed services and how supportive these services were.

Potential other factors affecting disclosure were measured as follows. Participants were asked to indicate their sex assigned at birth as male (1) and female (2). Age was categorized into three groups: 20 -24, 25-29 and 30 – 33 years. Education was coded as No schooling = 0; primary school (completed grade 1, grade 2, grade 3, grade 4, grade 5, grade 6, and grade 7) = 1; some high school (completed grade 8, grade 9, grade 10, and grade 11) = 2; completed high school (grade 12) = 3. Participants were asked whether they had been employed in the past 3 months, and the response options were “yes” and “no”. Five items of the Rosenberg Self-esteem scale were used to measure self-esteem and rated on a 4-point Likert scale, ranging from “strongly agree” to “strongly disagree” (Rosenberg, 1965). Negatively worded items were reverse-coded, and items were summed to obtain a total score ranging from 0 – 30, with higher scores indicating higher self-esteem (Rosenberg, 1965). Twelve adapted items from the Child and Youth Resilience Measure (CYRM-12), 5-point version were used to assess socio-ecological resilience among participants (Ungar & Liebenberg, 2011). Items were summed to obtain a total resilience score, where higher scores indicate a higher level of resilience (Ungar & Liebenberg, 2011). The highest possible score of the CYRM-12 is 60. The 8-item Medical Outcomes Study Social Support Survey (MOS-SS) was used to measure social support. Items are rated on a 5-point Likert scale ranging from None of the time (1) to All of the time (5) (Sherbourne & Stewart, 1991; Moser et al., 2012). Items were summed to obtain a social support score and a mean score was created where higher scores indicated a higher level of resilience.

Data analysis

The analysis followed two steps: basic descriptive analysis were conducted to examine socio-demographic factors and patterns of disclosure comparing males with females. The mean score for resilience, self-esteem, and social support were calculated for the scales to understand the overall levels of self-esteem, social support, and resilience (Rosenberg, 1965; Ungar & Liebenberg, 2011) within the samples. Four regression models were computed to investigate factors associated with disclosure of physical abuse, emotional abuse, sexual abuse and any disclosure. All analyses were done in STATA18.

Qualitative component

Methodology

Research objectives

This study aimed to investigate the factors that influenced young adults from Mpumalanga from disclosing their childhood abuse experiences and seeking support services. In-depth interviews were conducted to explore the factors that facilitated or hindered their disclosure and how these experiences shaped their views on accessing support services in adulthood. The research aimed to provide insights into the experiences of young adults in Mpumalanga.

Approach and design

The qualitative research approach (Hassan, 2024) and the thematic analysis research design was used for this part of the study. Qualitative research design is a research methodology that focuses on investigating and comprehending complicated phenomena (Hassan, 2024). This design seeks to demonstrate the meanings assigned to experiences of childhood abuse disclosure by individuals or communities. Unlike quantitative research, which uses numerical data, this study employed interviews, drawings and audio for data collection and analyses. The researcher also kept a reflective journal (Hassan, 2024). The reflective journal assisted in promoting self-awareness, transparency, critical thinking, and emotional well-being. It assisted the researcher in understanding their own biases and beliefs better. It acted as a record of the study process, allowing the researcher to review their observations and decisions made (Hassan, 2024). The reflective journal did not form part of the analysis. The research design aids in ensuring that the research is conducted in a systematic and logical manner, and that the data collected are relevant and reliable (Hassan, 2024). A qualitative approach using a phenomenological design was employed (Hassan, 2024; Tomaszewski et al., 2020)

Population and Sampling

Young adults aged between 22 and 30 years who had experienced emotional, physical, or sexual abuse were purposefully sampled for this study. Participants were selected from a larger longitudinal study based on their responses to reporting severe physical abuse and contact sexual abuse (Meinck et al., 2023). Table 1 (below) shows the demographics of the selected participants.

Table 1: Demographic details of participants

Participant	Sex	Abuse experienced in childhood	Abuser(s)	Disclosure to
P1_F	Female	Bullying Physical abuse	Peers Uncle	Mother
P2_F	Female	Physical abuse Emotional abuse Sexual abuse Witnessing domestic violence	Father Stranger Colleague	Uncle (helped her escape the incident) Employer Family (when admitted to hospital)

P3_F	Female	Physical abuse Emotional abuse	Sister's boyfriend, Mother	Family was there
P4_F	Female	Sexual abuse	Stranger	Mother Teacher
P5_F	Female	Sexual abuse	Stranger	No disclosure in childhood First time disclosure to interviewer
P6_F	Female	Sexual abuse Physical abuse	Grandfather	Aunt arranged the whole thing. Mother The family knows
P7_F	Female	Sexual abuse Physical abuse Emotional abuse	Relative Mother	Family knew and swept it under the carpet
P8_F	Female	Sexual abuse	Neighbour	School Principal, who then told the mother
P9_F	Female	Sexual abuse Physical abuse	Stepfather Neighbour	Mother knew, and then later reported to the police Aunt
P10_F	Female	Physical abuse Sexual abuse	Caregivers Neighbour	No disclosure Unintentional disclosure
P11_F	Female	Kidnapping Sexual abuse	Stranger	Mother Friend
P12_F	Female	Physical abuse Emotional abuse Sexual abuse	Mother Cousin	Grandmother
P13_F	Female	Sexual harassment	Stranger (Taxi-driver)	None Interviewer

P14_F	Female	Witnessing DV Emotional Physical abuse	Father	Family knew
P15_F	Female	Attempted sexual abuse	Stepfather	Family
P16_F	Female	Emotional abuse Physical abuse	Community Grandmother	None
P17_F	Female	Physical abuse Emotional abuse Witnessing DV	Mother Stepfather	No disclosure Mother Grandmother
P18_F	Female	Sexual abuse	Uncle	Unintentional disclosure (Older brother)
P19_F	Female	Physical abuse Neglect Sexual abuse	Grandmother Uncle Mother	Identified by doctors
P20_F	Female	Physical abuse Witnessing DV Sexual abuse	Father Stranger	Mother was present Aunt Interviewer
P21_F	Female	Sexual abuse	Neighbour	Hospital Family (after she was assisted at the hospital)
P1_M	Male	Emotional abuse Neglect	Mother and stepfather	No one
P2_M	Male	Sexual abuse	Female family member	Friends
P3_M	Male	Witnessing DV Emotional abuse	Parents	No one
P4_M	Male	Community violence	Community	Childline

		Sexual assault Corporal punishment Physical abuse	Stranger Teacher Mother	Community member
P5_M	Male	Physical abuse	Stepmother	Neighbours were aware, Father
P6_M	Male	Physical abuse	Stepfather	Community leader
P8_M	Male	Bullying Physical abuse Sexual abuse	Peers Teacher	Grandmother Interviewer

Inclusion criteria

The inclusion criteria for participation were carefully designed to ensure the study captured a wide range of experiences and perspectives. Participants had to be young adults from Mpumalanga who had experienced childhood abuse and had indicated their experiences during the quantitative data collection. Participants were recruited if they were young adults (between 22 and 30 years), had experienced physical, and/or contact sexual abuse in childhood and disclosed during the quantitative round (Manuscript 2) of data collection of the INTERRUPT_VIOLENCE Study and had granted permission to be contacted for further research during the INTERRUPT_VIOLENCE Study (see protocol paper, Meinck et al. (2023).

Recruitment of qualitative study

To recruit participants for qualitative data collection, the researcher used basic descriptive analyses which were conducted in STATA.18 (using information from the quantitative round of data collection) to identify participants who met the inclusion criteria. Participants were contacted using the last known phone numbers and home addresses. Once the study was explained to the participants and they had been granted an opportunity to ask questions, signed informed consent was obtained. Thirty-one participants agreed to participate in this study. Interviews were scheduled, and participants received a gift voucher of R50 as a token of appreciation. Participants were also informed about the study's social worker and emergency contact numbers for post interview support, and 14 participants from this qualitative study made use of this service.

Data collection for qualitative study

The study conducted in-depth interviews with young adults from Mpumalanga Province to collect qualitative data on their childhood abuse experiences. Open-ended questions were used to allow participants to express their thoughts freely (Lassen, 2021; Mashuri et al., 2022; Roberts, 2020), focusing on single ideas such as childhood abuse experiences, disclosure, reactions of confidantes, and support by informal and formal services.

Data was collected face-to-face with the assistance of a fieldworker who helped with translations. Arts-based methods were used, namely the kinetic family drawing (KFD) (Burns & Kaufman, 1972) and the road to life tool (Bagnoli, 2009) to provide nuanced insights into participants' experiences and perspectives (Archibald, 2023; Leavy, 2023; Morris & Paris, 2023). These art-based methods provided a creative non-threatening way for participants to express their experiences and emotions, offering valuable insights into the factors influencing disclosure and support-seeking behaviours. They helped uncover the complex interplay between past experiences and current attitudes, contributing to a more comprehensive understanding of the research questions (Archibald, 2023; Leavy, 2023; Morris & Paris, 2023). Participants were given materials to draw. After completing the drawings, they were interviewed with a series of questions to gather details about their experiences. The data collected from these art-based methods provided rich insights into the participants' experiences (Rouse et al., 2023). All participants consented to being audio-recorded. The audio-recorded interviews were transcribed verbatim by external transcribers, and participants' names were replaced with pseudonyms (e.g. YA 1234) on the transcripts to ensure confidentiality. The study conducted member checking with participants to ensure the accuracy of their qualitative data findings (Lincoln & Guba, 1985). In-person and telephonically reached participants provided feedback on the findings, clarifying misunderstandings and gathering additional insights (McKim, 2023).

Data analysis

For the analysis of the qualitative data, thematic analysis was conducted by the researcher (Braun & Clarke, 2006), and findings were embedded in the SEM (Bronfenbrenner, 1998, 2006). In the current study, the researcher engaged in reflexivity by continuously examining her own biases and perspectives, for example the researcher ensured that her cultural norms and values were not imposed on participants, thereby preventing undue influence on the data collection and analysis processes. This self-reflection allowed the researcher to maintain objectivity and rigor, aligning with the principles outlined by Braun and Clarke (2013; 2016).

First, the researcher manually familiarised herself with each interview using the audio recordings, transcripts, photographs of the drawings and fieldnotes (Braun & Clarke, 2006). This thorough immersion helps in understanding the context and nuances of the data. Next for the generation of initial codes, data were analysed by starting with coding which aims to classify all of the written text so that it can be compared systematically with other parts of the data set (Braun & Clarke, 2006, 2013; Braun et al., 2016). The study used AtlasTi.22 software for coding and thematic analysis to organise and manage the dataset. A co-coder assisted in the coding of the first three transcripts to help reduce bias and increase the validity of the findings (O'Connor & Joffe, 2020). Thematic analysis was conducted to identify common themes in the data, preserving the meanings of the accounts and increasing data validity (Braun & Clarke, 2006, 2013; Braun et al., 2016). Braun and Clarke (2013) and Weate (2016) emphasised the versatility of thematic analysis, emphasising its usefulness across theoretical frameworks and research contexts, as well as reflexivity. The researcher and co-coder coded the transcripts separately using the same codebook and a consensus meeting was held to compare their coding. The deductive coding approach involved formulating study objectives, determining *a priori* codes, defining and naming themes, and arranging codes in a logical framework. The codebook was finalised after being pilot tested on a subset of data. The data was grouped into categories to form an analytical narrative and data extracts. The social ecological model (SEM) was incorporated in the findings to provide a multi-level perspective on the data and contextualise it with existing literature.