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Exploring the HIV/AIDS infection, intimate partner violence experience and poor mental health syndemic and its association with parenting amongst women in Mpumalanga

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Declaration

This thesis is submitted in the optional format, approved by the Faculty of Health Sciences, of published work with an encompassing introduction and conclusion.

I, Mpho Silima student number 511643, declare that this thesis is my original work. It is being submitted for the degree of Doctor of Philosophy in Public Health in the Faculty of Health Sciences of the University of the Witwatersrand, Johannesburg, South Africa. It has not been submitted before for any degree or examination at this or any other university.

I have read the sections on referencing and plagiarism in the WITS Plagiarism Policy. I am aware that the plagiarism is wrong and that the University of the Witwatersrand may take disciplinary action should plagiarism be found in this work. I have followed the required conventions in referencing the thoughts and ideas of others. I confirm that all of the work submitted in this thesis is my own unaided work except where I have explicitly indicated otherwise. I have made use of MAXQDA to code and analyse my data, MAXQDA has AI assisted features, however all coding and analysis was my own and not AI assisted.



Signature:

Name: Mpho Silima

Date: 22 May 2025

Dedication

To my sister, it is through this work I now know the pain that you go through. To mamani's tribe, Tshepo, Keke and Ada I dedicate this work to you, may you strive to be more than your circumstances. To my warriors, mom and dad, may this work bring healing for all you have been through. This work is only the beginning, may we turn our pain into strength.

Acknowledgements

Starting this journey I didn't realize how much of a rollercoaster of emotions it would be, through the highs and lows thank you all.

To Nicola Christofides, you have been more than a supervisor, thank you for being all that you are, a mentor, a shoulder to rely on in the most difficult moments of this journey. You have been the calm in the storm, thank you for always believing in me and cheering me on constantly and consistently, it would have been difficult without you holding my hand.

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To HB, thank you for always being so encouraging throughout, for always being able to pick out things that many of us don't see. You inspire me in so many ways, may our paths continue to align.

To my friend, Tata, my biggest cheerleader, thank you friend for being a consistent pillar. Thank you for always knowing what to say and talking me down the ledge so many times.

To my Pookie, Diana, thank you for being you, in the best way possible.

To my dear partner, Thabo, who saw me through it all, thank you for your patience, your encouragement and support. For the weekends and holidays dedicated to work, thank you for understanding and being so supportive. I love you.

Kopano, Pam Pam and Kabelo, thank you for being a pillar of support throughout this journey. Your encouragement and camaraderie have been a source of immense strength. Sharing our successes, both big and small, has made this experience all the more precious.

Love and light, the journey continues.

Publications and Presentation arising from this study

Presentations

Oral Presentations

1. **Title of presentation:** Co-occurring Intimate Partner Violence, Mental Health, HIV, and Parenting Among Women: A Scoping Review
   Conference: ISPCAN Conference
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Publications

1. Silima, M., Christofides, N., Franchino-Olsen, H., Woollett, N., & Meinck, F. (2024). "I've accepted it because at the end of the day there is nothing, I can do about it": A qualitative study exploring the experiences of women living with the HIV, intimate

partner violence and mental health syndemic in Mpumalanga, South Africa. PLOS Global Public Health, 4(5), e0002588. https://doi.org/10.1371/journal.pgph.0002588

2. Silima, M., Christofides, N., Franchino-Olsen, H., Woollett, N., Wang, J., Ho-Foster, A., Maleke, K., Meinck, (2024). Co-occurring Intimate Partner Violence, Mental Health, HIV and Parenting Among Women: A Scoping Review. Trauma Violence and Abuse https://doi.org/ **10.1177/15248380241268807**
3. Silima, M., Christofides, N., Franchino-Olsen, H., Woollett, N., Meinck F., (2024) "Qualitative study exploring parenting among mothers and female caregivers living with the IPV, mental health and HIV syndemic in South Africa" BMJ Open https://doi:10.1136/bmjopen-2024-086478

Abstract

Background: In South Africa, women disproportionately bear the burden of Intimate Partner Violence (IPV), HIV or AIDS, and poor mental health (MH), which significantly affects their parenting and children's wellbeing. Harsh and inconsistent parenting, often resulting from these compounded stressors, negatively impacts the health and development of children. While there is extensive research on the impact of each epidemic on parenting, there is considerably less published research on the syndemic impact of IPV, HIV, and MH. A syndemic refers to the synergistic interaction of two or more co-existing epidemics where the combined impact is often greater than the sum of their individual effects, often leading to more severe health outcomes, particularly among vulnerable or marginalised populations.

Aim: The overall aim of this PhD research was to explore the experiences and parenting practices among mothers and caregivers living with different combinations of the co-occurring IPV, MH, and HIV epidemics.

Methods: This thesis draws upon three distinct studies, using an overall mixed-method study design. The first is a scoping review of 23 studies conducted between 2001-September 2023, following the JBI and Prisma-ScR guidelines. The second study is a nested qualitative study using in-depth interviews and arts-based methods with 20 women. Thematic data analysis using MAXQDA22 was used to analyse the data. The third study is a secondary data analysis of cross-sectional data of young adults who are primary caregivers of children under 18 from the third wave of a multigenerational longitudinal study. A total of 720 young women completed an interviewer administered questionnaire, and 547 were included in the final quantitative analysis. Quantitative data were analysed using Stata 17.0 using logistic regression and marginal effects models

Results: This doctoral research contributes several new findings to the extant literature on parenting practices and the IPV, MH, and HIV syndemic. The scoping review identified primarily studies from the United States, that utilized quantitative, mainly longitudinal research designs. Findings from the review indicate living with the different combinations of IPV, MH and HIV led to increased likelihood of harsh and inconsistent parenting. Furthermore, the review

revealed that while IPV was not directly associated with harsh parenting practices, the relationship was mediated by poor mental health. Anxiety and maternal depression were the most frequent disorders found in studies examining the co-occurrence of HIV-MH. Findings from the qualitative studies revealed that women living with the syndemic face numerous challenges due to these co-existing epidemics, with depression, suicidality, and post-traumatic stress disorder (PTSD) being most common. Participants adopted various coping strategies, including religion, acceptance, and family support, with harmful substance use most prevalent among those experiencing IPV. Regarding parenting, individual, interpersonal, and structural factors significantly influenced practices. The quantitative findings revealed that maternal (includes any woman who is a primary caregiver) use of emotional and physical violence was common, with women experiencing IPV and poor MH concurrently, having higher odds of using both physical and emotional violence towards their children, particularly emotional violence. The quantitative findings also revealed a synergistic relationship between IPV and MH, showing that the combined effect of these epidemics has a more severe impact on parenting than each independently However, combinations including HIV, such as HIV-MH and IPV-MH did not significantly increase the risk of maternal use of emotional violence **Conclusion:** This research highlights the severe effects of the IPV, MH syndemics on parenting among South African women. Multi-sectoral and multi-disciplinary interventions are needed to address the challenges experienced by mothers and caregivers living with the syndemic. To effectively reduce child maltreatment, interventions must tackle the IPV-MH syndemic in tandem. The overlap of these epidemics leads to detrimental parenting, strained relationships and inadequate provision of children's needs. Additionally, mothers living with these syndemics often have lower levels of parenting satisfaction, which further compounds their challenges. Addressing these intersecting epidemics holistically is essential for improving the wellbeing of both parents and their children

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List of abbreviations

Abbreviation	Full Form
ACASI	Audio-Computer Assisted Self-Interviewing
AIDS	Acquired Immunodeficiency Syndrome
AP	Attributable Proportion
ART	Antiretroviral Therapy
ASQ	Ask Suicide-Screening Questions
CSA	Child Sexual Abuse
CMD	Common Mental Health Disorders
GAD-7	Generalized Anxiety Disorder-7
HREC	Human Research Ethics Committee
HIV	Human Immunodeficiency Virus
ICAST-P	International Society for the Prevention of Child Abuse and Neglect Child Abuse Screening Tool – Parent version
IPV	Intimate Partner Violence
KFD	Kinetic Family Drawing
MH	Mental Health
MSM	Men who have sex with men
PHQ-9	Patient Health Questionnaire-9
PTSD	Post-Traumatic Stress Disorder
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
RDP	Reconstruction and Development Programme
RERI	Relative Excess Risk due to Interaction
S	Synergy Index
SAVA	Substance Abuse, Violence and AIDS
Stats SA	Statistics South Africa
UNICEF	United Nations International Children's Emergency Fund
PHQ-9	Patient Health Questionnaire-9
PTSD	Post-Traumatic Stress Disorder
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
RDP	Reconstruction and Development Programme
RERI	Relative Excess Risk due to Interaction
WESCA	West East Southern and Central Africa
WHO	World Health Organization

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Organization of the Thesis

Chapter 1 presents the introduction of the thesis. Following this, **Chapter 2** presents the conceptual framework for understanding how the HIV-IPV-MH syndemic can impact parenting practices. I examine the prevalence of each of the epidemics in South Africa and how these have the potential to impact on parenting practices. Finally, I highlight some gaps in the literature in relation to the syndemic impact on parenting. This will set the stage for how this doctoral research can inform the field.

Chapter 3 describes the methodology of the doctoral research and of the four manuscripts in this thesis. **Chapters 4-7** consist of the four manuscripts that were written as part of the doctoral research. Three of the manuscripts have been published, one and one is in submission-ready format. These papers form the basis of the results section of the thesis. Each chapter consists of one manuscript, which includes the background, methods, findings and discussion. **Chapter 4** is a scoping review of the available research on the co-occurring epidemics of IPV, MH and HIV and the impact on parenting. **Chapter 5** investigates the experiences of women living with the syndemic, and their coping strategies. **Chapter 6** examines parenting practices among women living with the epidemics and the associated factors. **Chapter 7** is a quantitative exploration of the synergistic interaction between HIV-IPV-MH and **Chapter 8** is a synthesis of all the main findings of the doctoral research. The findings from all the papers have been integrated and details on how the research can inform future policy and interventions is discussed in this section. **Chapter 9** presents the conclusion, and provides recommendations for future research, interventions and policy and dissemination plans.

Chapter 1: Introduction

Chapter 1: Introduction

1.1. Background

The critical role that parents play in both the socialization and development of children is well-established (Eilertsen et al., 2022; Taccini et al., 2024; UNICEF, 2021). Parenting significantly influences children's socio-emotional well-being and academic achievements. (Aber et al., 2007; Rutter, 2003). Harsh and inconsistent parenting is a public health concern due to its association with adverse outcomes for children, such as anxiety, harmful substance use, suicidality and bullying victimization, which often results in subsequent depression during adolescence (Chung et al., 2021).

In South Africa, the majority of children under the age of 14 are primarily cared for by women, with research indicating that the responsibility of childcare predominantly falls on African women, more so than women of other races (Department of Social Development, 2021). Various factors shape parental practices including socio-economic status and parental health challenges. Poverty can induce economic stress, and parental MH challenges, leading to harsher or more inconsistent parenting (Kotchick & Forehand, 2002). Additionally, the family environment plays a crucial role in parenting. Intimate partner violence (IPV) perpetrated against women can lead to significant psychological distress, including depression, anxiety, and post-traumatic stress, which may interfere with their capacity to parent in consistent and emotionally responsive ways. In some cases, the cumulative stress of living with violence and its mental health consequences may manifest in harsher or less attuned parenting behaviours,(Anderson & Van Ee, 2018). Furthermore, the exposure of children to IPV has detrimental effects on their MH and development (Chen et al., 2022). In South Africa, women are disproportionately affected by HIV, IPV, and MH challenges, many of whom experience these epidemics concurrently (R. Jewkes & Dunkle, 2010; Nguse & Wassenar, 2021; UNAIDS, 2020). This overlapping of epidemics, or syndemic, exacerbates the adverse outcomes for affected populations (Singer, 1996; Singer et al.,

2017a; Tsai & Burns, 2015). Given that women are primarily responsible for caregiving and bear the brunt of these epidemics, it is crucial to understand the impact of the syndemic on parenting practices.

1.2. Justification of the research

IPV is widespread, with reports indicating that between 21% and 31% of women have experienced IPV in their lifetime in South Africa (Durevall & Lindskog, 2015). In terms of MH, a national South African study identified a high prevalence of probable depression among women, with rates reaching as high as 26.8% (Craig et al., 2022). Additionally a large scale population based study of common mental disorders (CMDs) in the country found that being female was associated with increased severity of 12 month mental disorders (Herman et al., 2009).

Given the high prevalence of all three epidemics in the country, the co-occurrence of IPV, MH, and HIV represents a significant public health concern, disproportionately affecting women who are often the primary caregivers of children. Despite numerous studies exploring the impact of these epidemics on women (Devries et al., 2013a; Muthoni et al., 2020; World Health Organization, 2022b), there is limited research examining how this syndemic impacts parenting practices. The existing body of research lacks robust exploration of the synergistic effects of IPV, MH, and HIV on parenting practices and child maltreatment. A synergistic approach is critical as it recognises that IPV, MH, and HIV do not simply co-occur, but interact in ways that intensify each other's effects, creating a cumulative burden that is greater than the sum of their individual impacts.

Furthermore, studies that have investigated the impact of two or more of these epidemics on parenting have not examined it from a syndemic perspective (Levendosky et al., 2003; Madigan et al., 2015; Sherr et al., 2016), resulting in an incomplete understanding of their compounding effects.

Examining the syndemic is crucial for identifying the most effective interventions, from social policy to clinical practice, as a syndemic lens integrates environmental and individual embodied experiences. Given the high prevalence of these epidemics and their profound impact on women and their children, understanding how the IPV, MH, and HIV syndemic influences parenting among women is crucial.

1.3. Key Concepts

a) Parenting

According to United Nations International Children's Emergency Fund (UNICEF), parenting encompasses a range of interactions, feelings, beliefs, attitudes and actions that are involved in providing nurturing care (UNICEF, 2021). It is the responsibility of parents to create environments that promote children's safety, growth, and long-term success. Importantly, the term "parent" extends beyond biological mothers or fathers to include any primary caregiver, such as grandparents, aunts, or older siblings. This study focuses on caregivers who identify as women.

The literature distinguishes between different parenting styles, notably positive parenting versus harsh or abusive parenting. As shown in Figure 1. (De Stone et al., 2016). Positive parenting includes warmth, praise, active engagement, and the constructive use of rules and expectation(Maccoby, 1992).It is defined not only by the presence of nurturing behaviours but also by the absence of harsh discipline (De Stone et al., 2016) In contrast harsh parenting is marked by inconsistent punishment, low emotional connection, and limited supervision(Virasiri et al., 2011). Child maltreatment refers to physical, sexual, emotional abuse and neglect of children, forms that extend beyond poor parenting and can include humiliation, threats and violence with potential trauma or injury (De Stone et al., 2016; Virasiri et al., 2011).

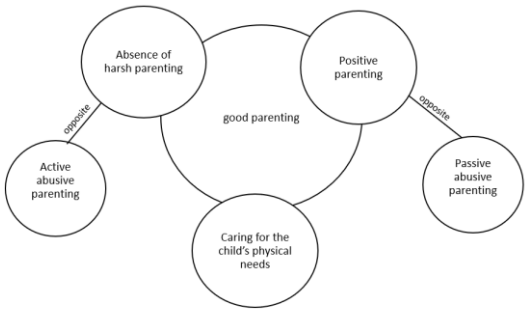

Figure 1: Different types of parenting (28)

b) *Child maltreatment/ Child abuse*

In this doctoral research, maltreatment, serves as an umbrella term encompassing all forms of child protection concerns, including, “abuse”, “neglect”, “exploitation” and “violence (World Health Organization, 2006) . The terms child maltreatment and child abuse are used interchangeably throughout. According to the WHO, child maltreatment refers to the abuse and neglect of individuals under 18 that results in actual or potential harm to their health, development, or dignity within a context of responsibility, trust, or power (The Alliance for Child Protection in Humanitarian Action, 2019; World Health Organization, 2006).

Physical abuse: involves the intentional use of physical force that causes or risks harm, including beating, hitting, strangling, scalding, poisoning, or suffocating. This type of violence is often used as a form of punishment(The Alliance for Child Protection in Humanitarian Action, 2019; World Health Organization, 2006).

Sexual abuse: refers to engaging a child in sexual activities they do not understand, cannot consent to, or are developmentally unprepared for. This includes attempted or completed acts, sexual harassment, voyeurism, trafficking, and online exploitation (Modvar & Elena, 2017; The Alliance for Child Protection in Humanitarian Action, 2019).

Emotional or psychological abuse: consists of caregiver behaviours that harm a child’s emotional development. It includes verbal aggression, ridicule, intimidation, rejection, and forcing a child to witness violence. This can be a one-off incident or a sustained pattern over time (The Alliance for Child Protection in Humanitarian Action, 2019; World Health Organization, 2006). **Neglect:** is the failure to provide for or protect a child despite having the means to do so. This includes not seeking medical care or basic services. However, lack of provision due to poverty does not constitute neglect (Burton et al., 2015; World Health Organization, 2006). *Intimate Partner Violence*

The World Health Organization (2010) defines intimate partner violence (IPV) as behaviour within an intimate relationship that causes physical, sexual, or psychological harm. This includes

physical aggression, sexual coercion, emotional abuse, and controlling behaviours. IPV is distinct from other forms of domestic violence such as child or elder abuse and can be perpetrated by any gender.

Physical violence involves the use of force such as, slapping, hitting, kicking, or using objects to cause injury or pain (Garcia-Moreno et al., 2005). **Sexual violence** includes coerced or forced sexual acts, unwanted sexual advances, degrading acts, or unprotected sex imposed by a partner (R. Jewkes et al., 2002; World Health Organization, 2014).

Emotional abuse entails behaviours aimed at controlling or demeaning a partner, such as verbal insults, threats, isolation, financial control, and restricting access to support or services (Follingstad & DeHart, 2000; World Health Organization, 2002).

c) *Poor mental health*

Mental health, as defined by the WHO, is more than the absence of disorders; it is a state of well-being (World Health Organization, 2022b). For the purpose of the PhD when referring to poor mental health we refer to the symptoms associated to specific mental health disorders such as anxiety, depression, suicidality and post-traumatic stress disorder. These disorders are defined below:

Depression: Depression is a mood disorder marked by persistent sadness, loss of interest, low energy, guilt, and concentration difficulties. It may range from mild to severe and impair daily functioning (American Psychiatric Association, 2013; Rondón Bernard, 2018).

Generalized anxiety disorder (GAD): The DSM-5 defines GAD as a condition that is marked by prolonged and intense worry and anxiety across various areas of a person's life, which persist for six months or more (American Psychiatric Association, 2022).

Suicidality: includes suicidal ideation (thoughts of death), suicide attempts (non-fatal self-injury with intent to die), and completed suicide. Ideation ranges from passive (wish to die) to active (plans or intent), and varies in intensity(McCullumsmith, 2015; World Health Organization, 2022b).

Post-traumatic stress disorder (PTSD): PTSD may develop after exposure to trauma and involves intrusive memories, avoidance, negative changes in mood and cognition, and hyperarousal. Symptoms must last over a month and significantly impair functioning(Bryant et al., 2011; Lok et al., 2018).

d) Syndemic: The concept of a *syndemic* was introduced by Merrill Singer in the 1990s to describe the co-occurrence and interaction of health issues—such as HIV, substance use, and violence—in marginalized urban communities in the U.S. (Singer, 1996). He argued that these conditions were not isolated epidemics but mutually reinforcing and shaped by structural factors like poverty, unemployment, housing instability, and disrupted social support (Singer, 1996; Wallace, 1990) word syndemic was inspired by the Greek word demos, meaning "the people", and its prefix from the Greek for "working together"(Singer, 1996). Unlike an "epidemic" or "pandemic," a *syndemic* emphasises the interplay between health problems and social determinants. Derived from Greek roots meaning "working together" and "people," it refers to interconnected health conditions that collectively worsen population health, especially in contexts of social disadvantage (Singer, 1996; Singer et al., 2017a).In his early work Singer argued that substance use disorder, violence and AIDS were not just simultaneous occurrences, but they were actually inseparable and mutually reinforcing threats to health and well-being (Singer, 1996). Singer, collectively referred to these using the acronym SAVA (substance use disorder, violence, and AIDS) see figure 2 (Singer, 1996).



Figure 2: Singer's SAVA syndemic

1.4. Overall Aim and Specific objectives

The overall aim of this Doctoral research is to investigate associations between the IPV, MH and HIV syndemic and parenting. The study examined the experiences of women living with the IPV-MH; MH-HIV; IPV-HIV; IPV-MH-HIV syndemics, and how living with these syndemics impacted their lives as women and as mothers in Mpumalanga Province, South Africa. The research was designed to achieve the following specific objectives:

1. To provide an overview of the HIV, IPV experience, and poor mental health syndemic and its associations with parenting among mothers and female caregivers in Sub-Saharan Africa.
2. To explore the experiences of women living with IPV, MH and/or HIV in Mpumalanga.
3. To explore the pathways through which IPV, poor mental health and HIV lead to specific parenting practices among mothers and female caregivers in Mpumalanga.
4. To determine the syndemic effects of HIV, IPV experience and/or poor mental health on child abuse and harsh parenting.

Chapter 2: Literature Review

Chapter 2: Literature Review

The current literature review aims to synthesise existing knowledge on IPV, MH, and HIV. It begins with a brief background on syndemic theory. The evolution of syndemic theory and the methodological challenges associated with it are also elaborated upon. Thereafter a discussion on why IPV, MH, and HIV can be considered a syndemic that affects parenting practices is provided. The primary outcome of interest, parenting, is then discussed. The review explores the importance of parenting and examines the impact of harsh, inconsistent, and positive parenting practices. The review then delves into the exposure measures of interest, starting with an overview of the extent of the epidemics and providing prevalence statistics. Next, the intersection of these epidemics is discussed in detail. A thorough explanation of the contextual factors leading to the clustering of these epidemics is provided. The review then examines how these intersecting epidemics impact parenting practices and child maltreatment, while considering protective factors. Finally, the gaps in knowledge are discussed.

The literature shows that HIV and poor MH, MH and IPV, and IPV and HIV frequently co-occur, leading to adverse outcomes in affected populations (Mendenhall, Kohrt, et al., 2022; Russell et al., 2013; Singer & Clair, 2003). Moreover, these epidemics are exacerbated by macro-level social factors, including poverty, stigma and discrimination, and gender inequality (Alvarado et al., 2018; Cloete et al., 2022; Murvartian et al., 2024; Sia et al., 2016). While there is a vast amount of research exploring the collective impact of the epidemics across various populations (Boateng et al., 2022; Cascalheira et al., 2023; Hatcher, Turan, et al., 2022a; Mendenhall et al., 2021), studies focussing on their influence on parenting practices in low-and middle- income countries remain limited and require further exploration.

2.1 What Constitutes as a Syndemic?

Singer and other researchers state for syndemic to exist the following criteria must be met; firstly there must be a concentration of diseases, within a specific population (Mendenhall, Kohrt, et al., 2022; Singer et al., 2017a; Tsai & Burns, 2015).This concentration is often documented in research as comorbidity or multimorbidity, where multiple diseases co-occur within the same individual or groups (Link & Phelan, 2001). Second, there must be measurable interactions between conditions. These interactions can occur through various pathways including biological (one's immune system), bio-social (behavioural responses) or bio-psychological (MH impacts) (Singer et al., 2017a). Finally large-scale factors must exacerbate the concentration of the condition. These factors can range from macro-level (violence and food insecurity) to meso-level (e.g. stigma and discrimination) and down to micro level (e.g. IPV) (Mendenhall, Kohrt, et al., 2022).

2.2. IPV, MH and HIV as a Syndemic and the Current Research

IPV experience, poor MH and HIV often interact, and their co-occurrence can negatively affect parenting (Figure 3 - any of the shaded areas constitutes syndemic in this PhD). Syndemic theory can help us to understand the synergistic relationship between these epidemics. However, much of the existing research using syndemic theory, focussing on IPV, MH and HIV epidemics has primarily explored other outcomes often neglecting the impact on parenting practices.

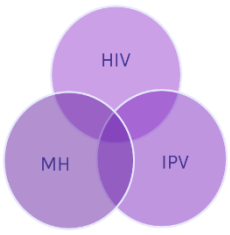

Figure 3: The IPV, MH and HIV syndemic

Numerous studies have been conducted on the SAVA syndemic among diverse populations, significantly contributing to the syndemic literature. These studies have examined the SAVA experiences among heterosexual men (Hatcher, Turan, et al., 2022a), men and women (Salas-Wright et al., 2015; Senn et al., 2010), and women in low

and middle-income countries (Russell et al., 2013; Ulibarri et al., 2011) with a growing body of literature focussed on MSM (Chakrapani et al., 2019; Safren et al., 2018).

Studies investigating the syndemic have used different methodologies to identify and capture the interactions between conditions. These methodologies include logistic regression and structural equation modelling (Hatcher, Turan, et al., 2022a), qualitative analysis (Gonzalez-Guarda et al., 2011) and multivariable logistic regression (Chakrapani et al., 2019). These diverse analytical techniques have been critical in exploring the complex interplay of the syndemic factors.

Research on the SAVA syndemic among heterosexual men, such as the study by Hatcher et al, (2022) in South Africa found significant associations between IPV, harmful alcohol use and HIV (Hatcher, Turan, et al., 2022a). Conducted in peri-urban South Africa, the study revealed that men who reported harmful substance use or substance use disorder, were HIV positive and had perpetrated recent violence against women had an increased risk of engaging in risky sexual behaviours compared to those not reporting these conditions (Hatcher, Turan, et al., 2022a)

Moreover, other studies with women as the population of interest have been primarily conducted in the United States. Gonzales et al (2011), conducted a study among Hispanic women, identifying cultural norms such as machismo and acculturation stress as significant factors influencing the syndemic conditions of harmful substance use, IPV, and HIV (Gonzalez-Guarda et al., 2011). These cultural and contextual factors created environments where IPV victimization was common and harmful substance use was adopted as a coping mechanism (Gonzalez-Guarda et al., 2011). Another study with low-income women in the USA (S. Illangasekare et al., 2013), revealed that the syndemic impact of IPV, substance use, and HIV had severe effects on depression. Factors such as low-income status, minority racial background and unstable housing contributing to the clustering of these epidemics among low-income women (S. Illangasekare et al., 2013).

Moreover syndemic research among MSM is vast (Chakrapani et al., 2019; Safren et al., 2018; Tomori et al., 2018). Studies found that stigma, depression, alcohol use and violence victimization

intersect to increase HIV risk among MSM (Chakrapani et al., 2019).

Evidently, the research using syndemic theory is vast and has contributed significantly to understanding how the interconnected epidemics like IPV, MH and HIV interact and exacerbate each other across various populations. These studies have provided valuable insights into the complex dynamics between the epidemics and their social determinants. Thus, there is great value in applying syndemic theory to further explore how the interacting epidemics can impact parenting, which has been a relatively under-explored area in the current literature.

Methodological shortcomings in syndemic theory

Despite the vast amount of research using syndemic theory, there are some methodological shortcomings. Much of the research on the syndemic claims to examine the synergistic impact of co-occurring epidemics. However, Tsai and Burns (2015) posit that very few studies use the correct analytical approaches to demonstrate whether and how co-occurring conditions exert a synergistic effect on HIV risk (Tsai & Burns, 2015). They found that most studies adopted simplistic methodologies to quantify the presence of multiple psychosocial issues, often using a cumulative count of the issues rather than testing the interaction aspect of the co-occurring conditions (Tsai & Burns, 2015). This approach erroneously assumes equal weighting among the co-occurring epidemics, thus overlooking the different degrees of influence each epidemic might actually exert on the health outcomes. Moreover, this approach does not confirm interaction among the epidemics, as it treats them as merely additive rather than interactive (Tsai & Burns, 2015). Tsai & Venketaramani (2016) argue that disease interaction is central to syndemic theory, without identified interactions it is difficult to argue the presence of a syndemic (Tsai & Venkataramani, 2016). Furthermore, they posit that the misapplication of additive models has significant public health implications, as it can obscure the necessity for integrated interventions that address multiple epidemics co-occurring synergistically (Tsai & Venkataramani, 2016). For instance, if violence and food insecurity are found to increase HIV risk more than the sum of their individual effects, interventions would need to address both the challenges together to be more effective.

Ignoring the interactions could lead to suboptimal intervention strategies and missed opportunities to reduce health disparities (Tsai & Venkataramani, 2016).

Studies that have used the appropriate models often found only a small portion of the hypothesized interactions to be statistically significant on multiplicative scales (Tsai & Burns, 2015) . Based on this Tsai and Burns (2015) argue that perhaps this means that there is a lack of true synergistic interactions among the studied conditions or there are methodological challenges in adequately capturing and demonstrating the interactions (Tsai & Burns, 2015).

2.3. Impact of Parenting Practices on Child Development and Health

Given the limited data on how IPV, MH, and HIV interact to influence parenting practices, it is essential to clearly define what constitutes parenting, examine the different types of parenting, and understanding the current state of parenting both globally and within South Africa.

Parenting is widely recognised as a cornerstone of human development. It has profound implications not only for children's future health, education, and social outcomes, but also for their immediate well-being, safety, and emotional security. A substantial body of evidence shows that parenting has a significant impact on outcomes across the lifespan, shaping children's mental health, academic achievement, risk behaviours, and broader life trajectories (Berthelon et al., 2020; Frosch et al., 2021; Ulferts, 2020). Positive parenting practices, including warmth, consistency, and support are associated with reduced behavioural challenges, improved emotional regulation, and healthier adult outcomes (Prime et al., 2023; Sanders, 2008; Whittle et al., 2017). Such practices also enhance children's current quality of life, sense of belonging, and emotional resilience.

While economic and human capital arguments have been central to motivating investment in early childhood, there is growing recognition of the need to also foreground children's moral and developmental claims in the present (Tomlinson et al., 2005). Supporting caregivers to provide

safe, affirming environments is not only an investment in future outcomes, but also a necessary response to children's immediate right to care, protection, and dignity. Parenting plays a dual role in this regard; as a mechanism for promoting long-term developmental success and as a practice of care that affirms children's humanity in the here and now.

Research has shown that children who experience sensitive and consistent caregiving better self-esteem, emotional competence, and school engagement(De Stone et al., 2016; Cluver et al., 2016)). In contrast harsh and inconsistent parenting has numerous adverse consequences for the mental health of children. Additionally, studies have documented links between harsh and inconsistent parenting and higher rates of physical illnesses such as cardiovascular diseases, diabetes, and autoimmune disorders in adulthood (Brody et al., 2014; L. Cluver et al., 2016). These studies suggest that stress from adverse childhood events leads to physiological changes that increase susceptibility to diseases (Brody et al., 2014). The chronic stress from harsh parenting and adverse childhood experiences has the potential to initiate a cascade of biological responses, with the timing of these stressors being critical, especially during early childhood and adolescence, which are particularly sensitive periods for brain development. The effects of stress during these critical periods can have lasting impacts on brain architecture and neurobiological systems, thus influencing an individual's health trajectory into adulthood (Afzal et al., 2024; Brody et al., 2014; Hughes et al., 2017). Beyond the health, social, and educational impacts of child maltreatment and harsh parenting, there are also significant economic effects related to child maltreatment. These include the costs associated with hospitalization and mental health services (Statistics South Africa, 2022b).

2.4 The Global and South African Context of Child Abuse and Parenting

Globally, child abuse including corporal punishment, occurs at high rates, especially in low-middle income countries (Hillis et al., 2016; World Health Organization, 2022a). Most children are exposed to both psychological and physical violence as a means of punishment (Cluver et al., 2018; Meinck, Cluver, et al., 2017). A systematic review conducted by Moody et al (2018), with

the objective of identifying the international prevalence of self-reported child maltreatment found a high prevalence of physical violence for girls (50.8%) and boys (60.2%) in Africa, while Europe showed significantly lower rates with 27% for boys and 12% for girls. For emotional abuse, the study found that in North America rates were significantly higher for girls (28.4%) compared to boys (13.8%), with similar trends being observed in Europe. In terms of neglect, the highest rates were found in Africa, with 41.8% for girls, and 39.1 for boys (Moody et al., 2018). Moreover, a systematic analysis looking at the prevalence of physical child abuse immediately after COVID-19 found the prevalence to be 18%, with overall prevalence rates for psychological abuse estimated at 39%, the highest being in Africa at 88% (H. Lee & Kim, 2023).

The law on child abuse and corporal punishment in South Africa

Understanding the legal context is essential for comprehending the framework within which child protection operates in South Africa. The current Children's Act of 2005 defines child abuse as deliberate infliction of harm, including physical or psychological harm (Children's Act 38 of 2005, 2006). The Act was amended in 2007 to include provisions for prevention and early intervention aimed at developing appropriate parenting skills and promoting positive, nonviolent forms of discipline (Children's Act 38 of 2005, 2006)

In July of 2018, the Department of Social Development circulated the draft Children's Third Amendment Bill for public consultation (*Rex v. Janke Janke*, 2023). According to Article 8 of the Bill, anyone that was responsible for a child, including those with parental responsibilities, should not engage in any form of cruel, inhuman, or degrading treatment or punishment while disciplining the child, in an attempt to protect the child's right to physical and psychological integrity as outline in section 12 (1)(c), (d), and (e) of the Constitution (*Rex v. Janke Janke*, 2023). According to the bill, the defence of reasonable chastisement would not be acceptable in court proceedings and it also mandated that any parent or guardian reported for applying inappropriate punishment, including corporal punishment, would be directed to prevention and early intervention programmes as specified in section 144 (*Freedom of Religion South Africa v Minister of Justice and Constitutional Development and Others*, 2019). In situations where the prevention and early

intervention services are insufficient or not suitable, and the child's safety and well-being are compromised, a designated social worker is required to assess the child as per section 110 (*Rex v. Janke Janke*, 2023) .

In September 2019, the Constitutional programs Court of South Africa upheld a ruling by the High Court of Gauteng, which declared the common law defense of "reasonable or moderate chastisement" unconstitutional according to articles 10 and 12(1)(c) of the Constitution (*Freedom of Religion South Africa v Minister of Justice and Constitutional Development and Others*, 2019). Previously, common law allowed parents the authority to administer "moderate and reasonable chastisement" on a child for misbehaviour, if it was not contrary to good morals or aimed at purposes other than correction and admonition (*Rex v. Janke Janke*, 2023). Consequently, this ruling prohibits all forms of corporal punishment in homes, placing any act of assault on children with criminal offenses. Despite these progressive laws, South Africa still has a high prevalence of child maltreatment (as reported above), this clearly indicates that legal frameworks alone are insufficient to address the underlying social issues and challenges faced by parents.

Prevalence and patterns of child maltreatment in South Africa

Child abuse remains a critical issue in South Africa, with statistics indicating an urgent need for comprehensive interventions (Burton et al., 2015). Overall patterns of child abuse show that girls are more likely to report experiencing physical abuse and emotional abuse, while boys are more likely to report exposure to sexual acts (Burton et al., 2015; Ward et al., 2018a). Additionally, child abuse also varies across racial lines with black and coloured children reporting higher rates of physical abuse and neglect compared to white and Indian children (Burton et al., 2015). There are also notable differences across provinces, with Mpumalanga and Gauteng having higher rates of reported sexual abuse, and Mpumalanga and Limpopo with the highest rates of physical abuse (Burton et al., 2015).

Corporal punishment is the most common form of violence against children in South Africa

(Statistics South Africa, 2021). Research shows a significant decrease in violence against children in schools from 18.6% in 2009 to 8.2% in 2019 (Statistics South Africa, 2021). Despite this, in 2019, 70.8% of children who had experienced violence in school were in primary school, while 29.2% were in secondary, translating to over a million children nationwide (Statistics South Africa, 2021). Children aged 8–10 years were particularly vulnerable across all the years between 2009-2019 (Statistics South Africa, 2021).

The Optimus study, the first nationally representative study on child abuse in South Africa, reveals significant levels of various types of abuse among adolescents (Burton et al., 2015). One in five young people reported experiencing some form of sexual abuse in their lifetime, including coerced sexual touching and exposure to intimate penetrative and non-penetrative sexual acts (Burton et al., 2015). Moreover, in terms of physical abuse, one in three children have experienced physical abuse, with 20.8 of young people in schools and 18% in households reporting that they had been hit, beaten or kicked by an adult caregiver (Burton et al., 2015). Additionally, 12.6% of young people in households have reported experiencing emotional abuse from a caregiver. and 17% of children in households reported experiencing some form of neglect (Burton et al., 2015). Various factors underlie child maltreatment and harsh and inconsistent parenting contributing to these alarming statistics.

2.5. Factors related to harsh and inconsistent parenting

Parenting quality can be impacted by various factors, including poverty, caregiver disability, caregiver physical and mental health (Ho et al., 2022; La Placa & Corlyon, 2016; Potharst et al., 2022), child mental and physical health, cultural norms and others (Brody et al., 2014). These factors are often interlinked and mutually reinforcing.

Globally, as well as in Southern Africa, poverty has been linked to a diminished capacity for effective parenting (Ho et al., 2022; Lachman et al., 2014). This can be explained by the impact of poverty on reducing a parent's ability to nurture, stimulate, and foster deeper relationships

with their children. Poverty often diverts parental attention towards basic survival needs rather than child- rearing (De Stone et al., 2016). Moreover, research indicates that families in economically disadvantaged environments frequently encounter chaotic living conditions, a lack of control, and high stress levels. These factors collectively have a negative impact on the quality of parenting by limiting the capacity of caregivers to provide a stable and supportive environment for their children (Morris et al., 2017). Substance use disorder can also have a profound impact on parenting, leading to neglect, abuse and an unstable home environment, which can significantly affect children's emotional and physical wellbeing. Other factors include not knowing alternatives parenting strategies (L. D. Cluver et al., 2018; Swahn et al., 2017) and the stress of parenting (Chiocca, 2017). Over and above these factors, the IPV, MH, and HIV syndemic has a significant impact on parenting. The following sections will discuss the prevalence and impact of IPV, MH, and HIV, how they interact and thereafter their influence on parenting practices.

2.6. The Prevalence and Impact of IPV

Violence against women has been established as a major public health issue and a significant human rights violation, experienced by almost nearly a third of all women globally (Prinsloo et al., 2022; World Health Organization, 2021). Southern Asia, West, East, Southern and Central Africa regions exhibit the highest rates of IPV (World Health Organization, 2021). Southern Asia has a lifetime prevalence of 35%, whilst WESCA has 33% (World Health Organization, 2021). In terms of recent prevalence within the last 12 months, WESCA recorded a rate of 20% whilst Southern Asia was 19% (World Health Organization, 2021).

According to the WHO (2021), 641 million ever- married or partnered women aged 15 and older have experienced physical and/or sexual violence from a current or former male partner at least once since age 15 (World Health Organization, 2021). Additionally, in the last 12 months, up to 245 million women in the same age group have experienced recent physical and/or sexual violence (World Health Organization, 2021). Among adolescent girls and young women aged 15-19 years, 24% have experienced IPV at least once in their lifetime (World Health Organization, 2021) . For

women between the ages of 15-24, approximately 16% reported experiencing violence in the last 12 months. Moreover, the highest lifetime and recent IPV rates have been reported to occur in women between the ages of 20-44 years, with 26-28% experiencing IPV over their lifetime and 10-16% in the past year (World Health Organization, 2021).

In the South African context, IPV is considered the second highest burden of disease after HIV (Gordon, 2016; Sere et al., 2021). Multiple studies across various provinces show that between 21% and 31% of women have ever experienced physical IPV (Groves et al., 2015; Mthembu et al., 2021). Additionally, it is estimated that at least 1 in 4 pregnant women have experienced physical or sexual IPV in the past 12 months (Groves et al., 2015). A national epidemiological study conducted in 1999 estimated that approximately 3,797 women were victims of homicide in South Africa, with 50.3% (1,349 cases) attributed to intimate partner violence (IPV (Abrahams et al., 2009).

1.1. The prevalence and impact of poor mental health

According to the WHO, in 2019, 970 million people globally were living with a MH disorder, with 82% of those cases occurring in low and middle-income countries (Institute for Health Metrics and Evaluation, 2022). Anxiety disorders accounted for 31% and depressive disorders for 29.9% of all cases (Institute for Health Metrics and Evaluation, 2022). Furthermore, mental health conditions globally contribute to one in six years (15.6%) lived with disability (World Health Organization, 2022b). Approximately 13% of children between the ages of 5-9 and 14% of adolescents aged 10-19 have a mental disorder (World Health Organization, 2022b). Moreover, a nationwide study in the USA found that half of all mental disorders in adulthood were developed in childhood by age 14 (Kessler et al., 2005). Anxiety and depressive disorders are the most common mental disorders across the sexes, but they are about 50% more common among women than men throughout life (Oram et al., 2022).

In 2020, the number of people with anxiety and depressive disorders significantly increased as a

result of the COVID-19 pandemic (Cullen et al., 2020; Talevi et al., 2020), with the WHO estimating a 25% rise in both conditions during the first year of the COVID-19 pandemic . This surge was attributed to factors such as social isolation, economic instability, and disruptions to mental health services (World Health Organization, 2022c). However, it's important to critically assess these figures. Some researchers argue that the reported increases fall within the expected confidence intervals for many low- and middle-income countries (LMICs), both during and outside the pandemic context (Sun et al., 2023). This suggests that the pandemic may have amplified existing mental health challenges rather than introducing entirely new ones.

Furthermore, the methodologies used to gather data during the pandemic, often relying on self-reported surveys and online assessments, may have introduced biases or inconsistencies, particularly in LMICs where access to digital platforms is limited. This raises questions about the comparability and accuracy of the data across different regions. Additionally, the pandemic's impact on mental health services, disrupting or halting critical support in 93% of countries, may have led to underreporting or misdiagnosis of mental health conditions(World Health Organization, 2020)

South Africa lacks comprehensive national mental health statistics, with the most recent national prevalence study being the South African Stress and Health (SASH) study conducted in 2004 (Herman et al., 2009). Mental health challenges in South Africa rank as the third highest burden of disease after HIV and other infectious diseases (Herman et al., 2009). According to the SASH study, the lifetime prevalence of any mental disorder was 30.3%, with the most common mental health disorders being anxiety at 15.8%, alcohol abuse or dependence at 13.3% and mood disorders at 9.8% (Brooke-Sumner et al., 2017; Herman et al., 2009; World Health Organization, 2017b). Regarding gender differences, research indicates that women in South Africa are more prone to depression and anxiety disorders, while mean are at an increased risk of developing substance use disorders (Williams et al., 2008a). Furthermore, the SASH study revealed that 75% of South Africans with common mental health disorders such as depression, anxiety or substance use disorder do not receive treatment (Herman et al., 2009; Pillay, 2019).

1.2. The Prevalence and Impact of HIV

In 2022 global estimates indicated that there were 39 million people living with HIV, and 1.3. million new infections (UNAIDS, 2023). Of those living with HIV, the majority (37.5 million) were people above the age of 15, and 1.5 million were children aged 0-14 years (UNAIDS, 2023). Moreover, AIDS- related illnesses resulted in approximately 630 000 deaths worldwide in the same year (UNAIDS, 2023). Despite a decline in new HIV cases among adolescent girls and young women compared to a decade ago, many of them still face high HIV risk, with 210 000 young girls and women having acquired HIV in 2022 compared to 140 000 young males in the same year (UNAIDS, 2023). In WESCA, the HIV prevalence among adolescent girls and young women is three times higher than their male peers (UNAIDS, 2023).

South Africa remains the epicenter of the HIV epidemic, with the largest seropositive population in the world, estimated at 7.8 million people living with HIV in 2022. Of these, 7.4 million were adults aged 15 and above (Human Sciences Research Council, 2023). The HIV prevalence among young women in South Africa also follows a similar pattern to the global trend, where the prevalence is four times higher than that of young men (South African National Aids Council, 2017). In 2018, 540 000 South African young women were living with HIV as compared to 180 000 young men (South African National Aids Council, 2017; UNAIDS, 2021).

Research indicates that approximately 29.8 million people globally were accessing HIV treatment in 2023 (UNAIDS, 2023). However, nearly 9.2 million were not receiving any treatment, and 2.1 million that were on treatment were not virally suppressed despite being on medication (UNAIDS, 2023). Significant disparities in treatment access are evident, particularly in regions such as Eastern Europe, Central Asia, the Middle East and North Africa, where only about half of the people living with HIV had received treatment (UNAIDS, 2023). Barriers to access include inadequate health services, conflict and human rights violations. Additionally, men and children living with HIV have significantly lower rates of treatment coverage as compared to women

(UNAIDS, 2023).

In South Africa, about 4.4 million people living with HIV were on antiretroviral therapy (ART) in 2017, with more than 3 million people living with HIV still in needing ART (Simbayi et al., 2017). According to the Human Sciences Research Council (HSRC) national study, of the viral loads that were available (2,946 viral loads) results showed that viral suppression was achieved in 62.3% of the cases (Simbayi et al., 2017). Despite these efforts, South Africa faces several challenges in expanding HIV treatment coverage. These challenges include stigma and discrimination, supply chain and distribution challenges for ARVs, especially in under-resourced areas, and treatment fatigue related to the psychological burden of lifelong mediation adherence (Simbayi et al., 2017).

1.3. Pathways of interaction between IPV, MH and HIV

Given that IPV, MH and HIV form a syndemic, with significant impact on women, it is essential to understand how these interconnected epidemics intersect and amplify each other, often leading to compounded negative outcomes, particularly in the context of parenting.

1.3.1. The pathways of MH and HIV intersection

Literature has consistently shown that people living with HIV experience higher rates of MH disorders than the general population (Brandt, 2009; Hoare et al., 2021; Lang et al., 2023). The relationship between HIV and poor MH is bidirectional: HIV can lead to poorer MH outcomes, and living with poor MH can increase the risk of acquiring HIV (Remien et al., 2019; Weiser et al., 2011a). A systematic review on the MH of adults with HIV found that those living with HIV were more likely to struggle with depression, PTSD, anxiety, psychosis, alcohol abuse and a lower quality of life compared to those without HIV (Brandt, 2009). Another systematic review analyzing 60 articles revealed that the global prevalence of suicide among people living with HIV

was 24.9%, with higher rates of suicide and suicidal ideation among females (22%) than males (17%) (Rafiei et al., 2023).

HIV can lead to poor MH outcomes.

Global research indicates increased rates of MH disorders among people living with HIV compared to the general population (Bhatia & Sahil, 2014). For instance in India, a study found that 95% of people living with HIV exhibited signs of major depression (Bhatia & Sahil, 2014). In South Africa, 26-38% of people living with HIV have been estimated to have a MH disorder in contrast to 13% of the general population (Beydoun et al., 2012). The higher prevalence of MH challenges amongst people living with HIV has been associated with poorer physical health, poor quality of health services and in some cases poor adherence to antiretroviral treatment (ART) (Kidia et al., 2015; Meade & Sikkema, 2005; Woollett et al., 2017). Additionally, depression and anxiety are common due to the need to adjust to living with a chronic life-threatening illness (Small et al., 2022). Stigma and discrimination against people living with HIV also significantly impacts their mental well-being (Small et al., 2022).

Poor MH can lead to HIV.

Having poor MH can increase the risk of HIV acquisition through both direct and indirect mechanisms. MH disorders are said to increase the risk of HIV acquisition by 4-10-fold (Centers for Disease Control and Prevention, 2015). In the United States, HIV prevalence is much higher among adults with serious mental illnesses (SMI) such as such as psychotic disorder, bipolar disorder, recurrent major depressive disorder, comorbid mood and substance use disorder ranging from 2 to 6% (Collins et al., 2009) . In Africa where the HIV burden is even greater, the HIV prevalence among adults with SMI varies from 11 to 27% (Collins et al., 2009; Maling et al., 2011).

Several mechanisms explain the link between MH disorders and increased HIV risk. Adolescents

and adults with SMI who are sexually active tend to engage in high-risk behaviours, including inconsistent condom use, having multiple sexual partners, engaging in transactional sex and consuming alcohol before sex, which may increase the likelihood of unprotected sex (Abayomi et al., 2013; Bonfils et al., 2015; Guimarães et al., 2014). Furthermore, MH challenges can also hinder HIV prevention efforts, such as regular testing, and adherence to pre-exposure prophylaxis (PrEP) (Defechereux et al., 2016).

1.3.2. Pathways of interaction between IPV and poor MH

IPV can lead to poor MH.

IPV can precipitate MH challenges, which, in turn, may increase vulnerability to further IPV (Beydoun et al., 2012). According to research the most common MH disorders often associated with IPV victimization include posttraumatic stress disorder (PTSD) (Baker et al., 2021; S. J. Brown, Conway, et al., 2020; Charak et al., 2021; Gibbs et al., 2018) anxiety (S. J. Brown, Conway, et al., 2020; Charak et al., 2021), depression (Ahmadabadi et al., 2020; Daughtery et al., 2021; Gibbs et al., 2018), suicidal thoughts (Kandeğer & Naziroğlu, 2021), and substance use disorder (Gibbs et al., 2018; Reyes et al., 2021).

A meta-analysis of 16 longitudinal studies found that lifetime exposure to IPV nearly doubled the prevalence of depressive symptoms among women (K. M. Devries et al., 2013a). Furthermore, a separate analysis involving 17 studies mostly from high-income countries found a 97% increase in the odds of depressive symptoms among women who had experienced IPV (Devries et al., 2019). Supporting this, a study from the UK's general population showed that women who had experienced IPV had a 26% higher depressive symptom score (Herbert et al., 2021).

While most longitudinal studies originate from high-income contexts, research in South Africa also aligns with these findings. Okafor et al. (2021) noted significant associations between depressive symptoms and both emotional and sexual IPV among South African women, mirroring patterns

observed in high-income countries (Okafor et al., 2021). The trauma from continuous emotional, physical, or sexual abuse forms the primary mechanism through which IPV exacerbates MH challenges such as depression, anxiety, suicide attempts, and PTSD (K. M. Devries et al., 2015; Woollett & Hatcher, 2016). The persistent stress and fear disrupt emotional and psychological stability, often necessitating long-term psychological intervention (Oram et al., 2017).

Poor MH can lead to IPV victimization.

Women with severe or chronic mental illnesses face higher rates of violence compared to the general population (Khalifeh et al., 2015; Martin et al., 2006). Factors such as homelessness among people living with poor MH, a history of childhood abuse which can increase risk of poor MH, and neurocognitive impairments, which may impair their ability to assess dangerous situations, contribute to this increased risk (L. A. Goodman et al., 2001). Furthermore, individuals with severe depression and anxiety might not recognize early signs of abusive behaviour or feel unable to escape abusive situations due to low self-esteem or perceived lack of alternatives (Oram et al., 2022). Stigma and discrimination against people with MH challenges can lead to social isolation, further exacerbating their vulnerability. This isolation can hinder their ability to secure employment or access healthcare, increasing their dependency on abusive relationships (P. S. Wang et al., 2007).

1.3.3. Pathways of interaction of IPV and HIV

There is growing recognition of the significant role that violence against women and girls plays in increasing their risk and vulnerability to HIV acquisition (Y. Li et al., 2014; Marshall et al., 2018). Research from South Africa has demonstrated up to a threefold increase in the risk of HIV among women who have experienced violence compared to those who have not (Dunkle et al., 2004; Maman et al., 2000).

IPV can lead to HIV

The relationship between IPV and HIV is multifaceted, involving both biological and socio-cultural pathways (Rigby & Johnson, 2017). Biologically, forced or coercivee sexual intercourse with an HIV-infected partner can lead to HIV and other sexually transmitted infections (Durevall & Lindskog, 2015). The biological risk of transmission is heightened by the type of sexual exposure, such as vaginal, anal, or oral sex, and by the presence of other STIs or trauma, including vaginal lacerations during violent encounters (Durevall & Lindskog, 2015). Socio-culturally, the experience of IPV is linked to riskier sexual behaviours which indirectly increase HIV risk (Rigby & Johnson, 2017). A study in South Africa found that women who had experienced IPV were significantly more likely to engage in transactional sex and use condoms less consistently, behaviours often shaped by prior or ongoing coercion and economic dependence on male partners who exert control over sexual decision-making, thereby increasing their risk of HIV infection.(Dunkle et al., 2004). Moreover, violence and the fear of violence compromise women's ability to negotiate condom use. Studies have shown that women with abusive partners face more challenges and potential backlash when suggesting condom use, which can lead to inconsistent condom use and thereby increase HIV risk (Zembe et al., 2015).

HIV can lead to IPV experience

The relationship between HIV and IPV in the opposite direction, where HIV acts as the antecedent that could lead to IPV experience (Kouyoumdjian et al., 2013). The fear of violence acts as a barrier to women seeking HIV testing and disclosing their HIV status (Kanguya et al., 2022). Non-disclosure of HIV-positive status can prevent access to important services such as prevention of mother-to-child transmission (PMTCT) and ART (Kanguya et al., 2022). In some cases, violence may occur following an HIV disclosure, where a male partner blames the woman for introducing HIV into the relationship. This blame can happen even if he was the one who actually transmitted the virus to her. (Kouyoumdjian et al., 2013). A review of over 40 studies from WESCA found that a significant proportion of adolescent girls have sexual relationships with men 5-10 years

older. The research indicated that women with partners three or more years older had 1.6 times higher odds of being HIV-transmitted and 1.5 times higher odds of experiencing both physical and sexual violence than those with partners in their age group (Luke & Kurz, 2002)

1.3.4. Socio-environmental factors impacting IPV, MH and HIV

While extensive research has explored the intersections of IPV, MH, and HIV, several studies highlight the influence of socio-economic and cultural factors on these relationships (Lund et al., 2011; Patel et al., 1999). Socio-economic disadvantages, such as poverty and unemployment, are significant predictors of IPV, MH challenges, and HIV. These factors may complicate or confound the direct relationships between these conditions, suggesting that the interplay of these epidemics is not merely a result of their coexistence but is also deeply embedded in broader socio-economic contexts (Lund et al., 2011; Patel et al., 1999). In WESCA, women's low socio-economic position exposes them to higher behavioural risks of HIV acquisition (Beegle & Ozler, 2007; Gillespie, 2008). Additionally, women are more likely than men to face challenges such as lack of education, unemployment, and poverty, which increase their vulnerability. These socio-economic disadvantages can lead women to engage in transactional sex as a means of securing essential needs such as food, shelter, or money. Such interactions often occur without adequate protection against HIV, further increasing their risk of infection (Bandali, 2011; Trickey et al., 2024). Furthermore, women living in poverty often experience higher levels of stress due to financial insecurity, job instability, and poor living conditions, which are significant risk factors for depression and anxiety (Ardington & Case, 2010). These socio-economic factors also affect access to healthcare services, influencing the diagnosis and treatment of HIV and MH disorders resulting in untreated conditions that worsen over time (South African National Department of Health, 2023). Moreover, economic strain linked to poverty, often exacerbates IPV. This dynamic is exacerbated by women’s increased dependence on male providers, which significantly reduces their bargaining power within the household making it difficult making it difficult to leave

relationships with abusive partners.(Chisholm et al., 2016).

Cultural factors including gender norms and expectations, also influence the clustering of IPV, MH and HIV. In many contexts, cultural norms may reinforce behaviours that increase the risk of IPV and HIV, suggesting that the relationship between these challenges is mediated by broader societal contexts (Rigby & Johnson, 2017). Power imbalances that are frequently reinforced by societal norms increase women's vulnerability to IPV and HIV. Women's relative lack of power over their bodies and sexual lives, reinforced by their social and economic inequality, makes them more vulnerable to acquiring HIV (Sia et al., 2016). Furthermore, social norms that permit violence against women, including rape, may also increase the probability of HIV acquisition among women (Sia et al., 2016). Moreover, societies structured along patriarchal lines create fertile ground for IPV, where hegemonic masculinities that value aggression and control over women are promoted, while women are expected to be reserved and submissive, particularly in sexual relationships (Macleod-Downes et al., 2008; Pettifor et al., 2012). Traditional masculinity, rooted in patriarchal power relations, often manifests in men asserting ownership over their female partners and using violence as a form of discipline or control (Saunders et al., 2023; Sikweyiya et al., 2020). The psychological consequences of such violence exacerbate the risk of mental health conditions like depression and anxiety among women (Machisa & Shamu, 2018)

Additionally, stigma associated with IPV, MH and HIV can be more pronounced in certain cultures, affecting individuals' willingness to seek help and adhere to treatment (Kakuma et al., 2010; Kalichman et al., 2009). Research conducted by the HSRC in South Africa indicated that 15.4% of participants experienced stigma related to their HIV-positive status, with females being more likely to report this than males (Cloete et al., 2022). HIV-related stigma can have negative consequences, such as leading to job loss or difficulty in finding employment, exacerbating poverty, limiting access to healthcare, and contributing to the social and economic exclusion of individuals living with HIV (Rao et al., 2012). IPV stigma continues to be a significant issue in some communities, with societal attitudes often placing blame on women for their victimization (Cloete et al., 2022). The stigma against women who have experienced IPV has a profound impact

on their recovery (Murvartian et al., 2024). Victims may face judgments such as being accused of choosing the wrong partner or provoking abuse by failing to adhere to traditional gender roles (Alvarado et al., 2018; Barnett et al., 2018; Furr, 2014; W. E. Thurston et al., 2016) . In terms of MH, a systematic review conducted in Africa revealed that the prevalence of internalized stigma among individuals with mental illnesses was found to be 29.05% (Alemu et al., 2023). Moreover, individuals with MH are often subject to stereotyping, which can lead to their exclusion from various societal opportunities, including employment and housing (Alemu et al., 2023).

1.3.5. Parenting practices among women living with co-occurring IPV, MH and HIV

The intersection of HIV, MH, and IPV presents complex and significant challenges to parenting practices among affected women. According to research, women living with HIV often experience elevated levels of caregiver depression and anxiety, exacerbated by community violence and the stigma associated with their condition. These factors contribute to harsher physical discipline and inconsistent parenting practices (Murphy et al., 2010; T. Rochat et al., 2017; Sherr et al., 2016). However, with the increase in ART and interventions focused on parenting among women with HIV, it is not clear to what extent this is still the case (Khoirunnisa et al., 2021). Additionally, IPV has profound impacts on parental functioning, with studies showing that women experiencing IPV and MH challenges may struggle with emotional availability and warmth due to the trauma inflicted by their abusive partners, which can impact parenting behaviours (Chung et al., 2021; Levendosky et al., 2003).

Parenting practices among women living with IPV-MH-HIV

Research studying the IPV-MH-HIV syndemic and the impact on parenting practices is very sparse. Studies, such as those by Thurston et al. (2021), indicate that the presence of HIV intensifies the relationship between depressive symptoms and harsh parenting practices in mothers also experiencing IPV (Thurston et al., 2016). This triple burden can increase parental stress, leading to harsher parenting practices and a greater likelihood of engaging in harmful parenting

practices. The combined physical health challenges, psychological stress, and socio-economic pressures can create a particularly vulnerable environment for negative parenting outcomes (Thurston et al., 2021).

Parenting practices among women living with MH-HIV

Research by Sherr et al. (2016) indicates that households with adults living with HIV exhibit higher levels of caregiver depression and exposure to community violence, which often results in harsher physical discipline and practices (Sherr et al., 2016). Moreover, mothers living with HIV were found to have higher levels of anxiety, leading them to engage less frequently in family routines and have poor communication and less consistent discipline, as reported by Murphy et al (2010). Furthermore, another review suggests that depression among parents with HIV often results in disturbances in parental attention and responsivity, and the stigma and stress caused by preoccupation with their life expectancy often contribute to depressive symptoms, which negatively impact parenting practices (Rochat et al., 2017).

Parenting practices among women living with IPV-MH

The experience of IPV has been associated with poorer mental and physical health, as well as parental functioning (Chiesa et al., 2018; Sousa et al., 2022). Rates of IPV are particularly high among women in relationships which means that large numbers of children living in these households are exposed to violence (Chung et al., 2021). Research conducted with women living with IPV-MH found that they experienced psychological distress which was brought about by the experience of domestic violence (Levendosky et al., 2003). The result of living with IPV-MH led to less sensitivity towards their children's needs, lowered capacity to engage responsively with the child, lower maternal warmth as well as physical and psychological abuse. (Fujiwara et al., 2012; Holmes, 2013; Levendosky et al., 2003; Madigan et al., 2015; Suardi et al., 2020).

Parenting practices among women living with IPV-HIV

At the time of the current study, I did not find research that examined the effects of women living with both IPV and HIV and how this combination affected parenting practices. However, literature has shown that mothers or caregivers living with either of the epidemics are more likely to engage in harsher and inconsistent parenting than those without these experiences. For mothers subjected to IPV, the use of physical discipline may sometimes be shaped by fear, as they attempt to protect their children or prevent further violence from the abusive partner.(Anderson & Van Ee, 2018). Additionally, in abusive relationships, women may experience extreme criticism from their partners regarding their parenting skills, leading to a loss of confidence in their abilities and potentially negatively impacting their parenting (Levendosky et al., 2003; Pels et al., 2015). In terms of HIV, research conducted in South Africa found that children orphaned by AIDS and living with AIDS-ill caregivers were more vulnerable to abuse than non-affected children (Chandan & Richter, 2009a). Physical illness can reduce positive parenting through limited child engagement, disrupted family routines, and an increase in parental absence and neglect (Hyde et al., 2008). Parenting challenges are compounded by the high levels of deprivation characteristic of most HIV-affected households in South Africa (Meinck, Cluver, & Boyes, 2015). Considering these factors, it can be argued that living with both HIV and IPV likely has a more detrimental impact on parenting practices.

1.4. Limitations of Syndemic Theory

While syndemic theory is valuable for understanding the interconnected impacts of IPV, MH challenges, and HIV on parenting, it is important to acknowledge that the theory has its limitations. Firstly, syndemic theory does not explicitly account for the mechanisms of resilience that can mitigate the impact of a syndemic. It is important to understand that there are protective factors that may reduce the impact of a syndemic on the affected population. These factors provide explanations for the social conditions that need to be in place to avoid the emergence of a syndemic (Wilson et al., 2014). Understanding resilience at the personal, social, and structural

levels is crucial for developing interventions that can help individuals and communities withstand and recover from the negative effects of these interacting epidemics (Wilson et al., 2014).

1.5. Protective Factors

While HIV, IPV, and poor MH can contribute to harsh and inconsistent parenting in certain situations, it is not an inevitable outcome. Several protective factors can mitigate these negative effects. Resilience, social support, and the capacity of mothers to function as emotional anchors during times of violence or distress are crucial (Chung et al., 2021; Graham-Bermann et al., 2007; Rotheram-Borus et al., 2015). In the context of maternal HIV and parenting, some studies have revealed that high levels of family cohesion and low conflict among HIV-positive mothers when compared to their HIV-negative counterparts (Rotheram-Borus et al., 2017). Additionally access to ART has been highlighted as a critical factor in strengthening the parent-child relationship, by improving the health of HIV- positive mothers and extending their lifespan, allowing them to nurture their children effectively (Moshoeshoe & Madiba, 2021). In Canada, a qualitative study found that there was a dynamic of mutual protectiveness between mothers experiencing violence and their children, with children reporting that despite the limited communication due to abuse, their mothers provided comfort and support during interactions (Lapierre et al., 2018). Similarly, a review found that mothers with depression, despite their challenges, were able to maintain positive parenting practices characterized by warmth, sensitivity, and responsiveness, largely due to social support networks and a strong intrinsic motivation to provide a better upbringing for their children (Silva-Rodrigues et al., 2022). Despite significant adversities among mothers facing these challenges, there is still potential for positive parenting.

1.6. Gaps in the research

Several critical gaps exist in the extant literature, some of which this doctoral research will aim to address. Firstly, there is a notable scarcity of syndemic research conducted in low- and middle-income countries with most of the existing studies having been carried out in resource-rich settings, specifically half of the studies on syndemics having been conducted in the United States, in urban settings (Mendenhall & Singer, 2020a). This doctoral research, set in South Africa, aims to fill this geographic gap and provide insights from a low- and middle-income country perspective. Although researchers like Hatcher et al. (2022) and Mendenhall (2021) have explored syndemics in South Africa, their focus has not specifically been on the HIV, IPV, and MH syndemic in relation to parenting practices. Hatcher's research, for instance, examined IPV, HIV and harmful substance use syndemic among heterosexual men. Furthermore, while harmful substance use, risky sexual behaviour have been the most frequently studied co-factors in syndemic research (Mendenhall & Singer, 2020a), this study uniquely focuses on the interplay of IPV, MH, and HIV and the impact on parenting practices among women.

Additionally, the existing literature is predominantly quantitative, which often limits the depth of understanding of the lived experiences of individuals affected by syndemics. This doctoral research also includes qualitative data, offering a richer, more nuanced view of how these epidemics influence parenting among women. Papers 2 (Chapter 5) and 3 (Chapter 6) of this research specifically aim to address this qualitative gap

Moreover, most studies measuring syndemics adopt an additive approach, exploring the association of the cumulative number of conditions with HIV behavioural outcomes, such as unprotected sex or prevalent HIV and other sexually transmitted infections (Tomori et al., 2018; Tsai & Burns, 2015). This doctoral study intends to bridge this gap by employing both additive and multiplicative models to identify the interaction effects within the syndemic. Paper 4 (Chapter 7) of this research will delve into these analytical approaches, providing a more comprehensive understanding of the complex interactions at play.

Chapter 3:

Methodology

Chapter 3: Methodology

The research objectives of this doctoral study were addressed using both quantitative and qualitative methods for data collection and analysis. This doctoral work seeks to contribute to the existing body of research demonstrating the extent to which the IPV, MH, and HIV syndemic impact parenting practices among mothers and caregivers in Mpumalanga South Africa. The analysis for each research objective followed a sequential approach, with a distinct data analysis plan for each manuscript. In this chapter, the methodology for each individual manuscript will be presented.

Objective1: To better understand the extent and nature of the available research on the syndemic of IPV, MH and HIV, a scoping review was conducted (Chapter 4).

Objective 2: To gain a comprehensive view of the lived experiences and coping strategies of women living with the IPV, MH and HIV syndemic, in-depth interviews and thematic coding was conducted. A narrative approach was taken to understand these experiences in depth. (Chapter 5)

Objective 3: To explore parenting among women living with the IPV, poor mental health and HIV syndemic, and the factors influencing the specific parenting practices among these women, qualitative interviews and thematic analysis was conducted, also using a narrative approach. (Chapter 6)

Objective 4: To identify the syndemic effects of IPV, poor MH and HIV on parental child maltreatment, quantitative secondary data analyses were conducted. (Chapter 7)

3.1. Mixed method approach

A concurrent triangulation mixed methods approach was used, where data was collected concurrently and the findings from the qualitative and quantitative studies were integrated during the interpretation phase (Creswell & Creswell, 2007). According to Zhang and Creswell (2013) and Creswell and Clark (2018), a mixed-method approach is a research design that uses both qualitative and quantitative methods to collect and analyse data in response to research questions and hypotheses (Creswell et al., 2018; Zhang & Creswell, 2013). The qualitative component used a narrative approach supported by arts-based methods

(Burns & Kaufman, 1983; Denov & Shevell, 2021; Ebersöhn et al., 2012; Mannay, 2016). The quantitative component was a secondary data analysis of a cross-sectional study conducted during 2022-2024. This PhD was nested within the INTERRUPT_VIOLENCE multigenerational, longitudinal study that was conducted between 2010-2012 with a third wave conducted in 2022-2024 (Meinck et al., 2023). The aim of the primary study was to investigate the intergenerational transmission of violence (Meinck et al., 2023). Although the PhD was nested in the bigger study, it had its own unique research questions and objectives established prior to the start of the main study.

The concurrent triangulation methodology was chosen in order to confirm, cross-validate and corroborate the findings from both methods (Creswell et al., 2018). The strength of this strategy is that the use of both methods concurrently has the potential of offsetting the weaknesses inherent in one method with the strengths of the other method (Creswell et al., 2018). The quantitative and qualitative data were collected concurrently, however the quantitative data collection started first and from there participants for the qualitative study were purposively sampled from the quantitative participants based on responses they had provided. In terms of data priority, ideally in concurrent triangulation strategies, the priority is often equal between the quantitative and qualitative data, however, for this PhD the qualitative data took priority. Integration of the data occurred at the data interpretation phase once all participants had been interviewed. Figure 4 represents the concurrent parallel mixed method approach with triangulation.

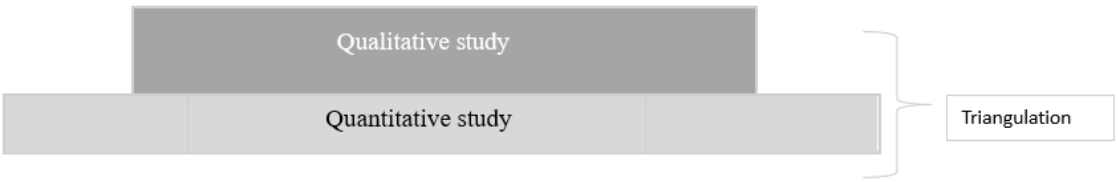

Figure 4: Concurrent parallel mixed methods approach with triangulation.

3.2. Mixed Method Research Plan

A scoping review of the available literature was conducted. A scoping review was considered the most appropriate method due to its effectiveness in mapping the existing evidence base (Armstrong et al., 2011; Peters et al., 2020). This review highlighted the need for the current research on the IPV, MH and HIV syndemic. The qualitative research presented in Paper 2 (Chapter 5) was instrumental in exploring the lived experiences and coping strategies of women living with the co-occurring epidemics of IPV, MH and HIV. Through this qualitative analysis, key themes, and patterns in the experiences of these women were identified. Building on the findings from Paper 2, Paper 3 (Chapter 6) focussed on examining how these experiences influenced the women's parenting practices. This research aimed to uncover some of the factors that influenced how the women chose to parent.

In Paper 4 (Chapter 7), a quantitative study was conducted to further investigate the findings from the previous qualitative studies (Paper 2 and 3) This study sought to make a case for syndemics by identifying whether the concurrent presence of more than one epidemic had a synergistic effect on maternal use of violence towards their children. Quantitative methods were employed to analyse the data, allowing for the calculation of the additive and multiplicative effects of the syndemic conditions on maternal behaviours. This quantitative study served to validate and expand upon the qualitative findings.

Table 1: Summary of Methodology for each study component

Study component	Study Design	Purpose of the study	Sample
Scoping review	Scoping Review	To map existing evidence on IPV, MH, HIV and parenting	28 peer-reviewed studies (2001–2022)
Qualitative Study 1	Narrative Qualitative study	To explore women lived experiences of the IPV, MH, and HIV syndemics	20 women INTERRUPT_VIOLENCE study
Qualitative Study 2	Narrative Qualitative study	To explore the impact of living with the IPV, MH and HIV syndemics on parenting practices among women caregivers	20 women INTERRUPT_VIOLENCE study
Quantitative study	Quantitative Study	To identify the syndemic effects of IPV, poor MH and HIV on parental child maltreatment	547 female caregivers

3.3. Methodology for Paper 1 (Chapter 4): Scoping Review

Paper 1 is a scoping review of the literature on the co-occurrence of IPV, MH and HIV and the impact on parenting practices.

Search strategy We retrieved published papers written in English from databases such as PubMed, Ebscohost, Scopus, ProQuest Thesis and Dissertation, Science Direct, Psych INFO, CINAHL, Proline, Interscience, the Cochrane Library, UNAIDS and UNICEF between 2001 and September 2023. A list of defined constructs and search terms, as detailed in Paper 1, (accepted for publication, **Chapter 4**) guided the search. Each database had a tailored search strategy that was adapted to the database input style.

The study selection followed a three-step process (Figure 5), this included 1) Title and abstract review 2) full text review and 3) data extraction. Four authors independently reviewed all identified study titles and abstracts, excluding duplicates and titles that did not meet the inclusion criteria. Abstracts that met the eligibility criteria underwent full paper assessment, which were resolved through telephonic between me and the reviewers, until a consensus was reached. The final stage included manually searching the reference lists of included articles for additional key studies that could be included.

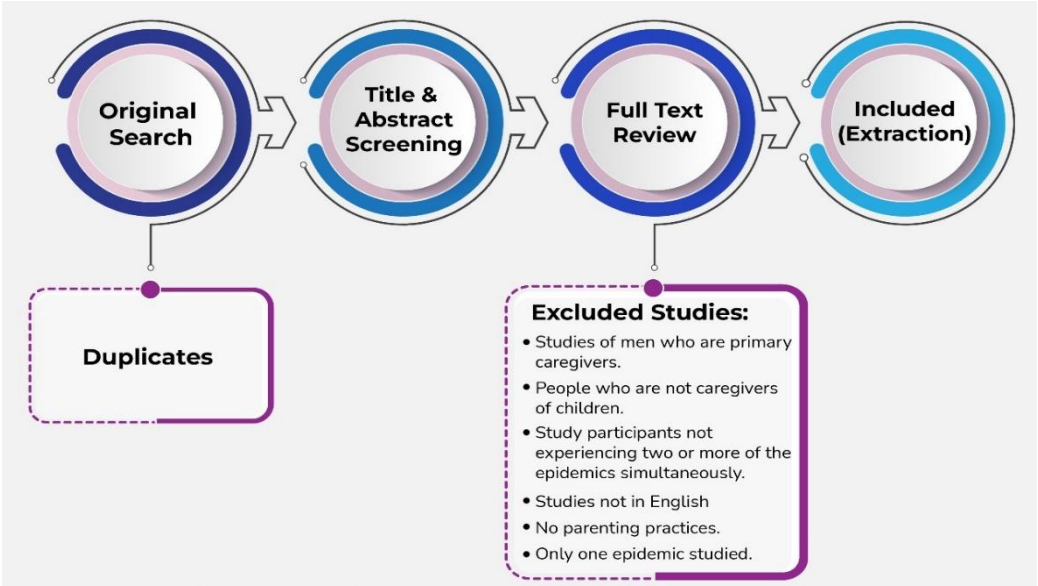

 Figure 5: Study selection flow diagram

3.3.1. Preliminary search

An initial test of the search strategy was conducted to ensure the identification of eligible papers for analysis. The results indicated that the search strategy was effective, yielding an adequate number of relevant papers. Although the number of papers was relatively small, it was sufficient to proceed with the review.

3.3.2. Data extraction

The following data were extracted and summarized by me and one of the reviewers in a table ***(Table 1***); year of publication, country, study design and sampling, characteristics of the study population including, age, socio-economic status, ethnicity, information about the study variables (measures used to collect data on IPV exposure, mental health outcomes, HIV prevalence, parenting practices), key findings and data analysis strategies used.

Table 2: Scoping Review Data Extraction Table

Year of Publication	Country	Study Aim	Study design	Study Population	Sample Size	Measures	Analysis	Epidemics	Findings

3.3. Data analysis and reporting

To analyse the final studies, I used thematic analysis. I systematically coded the data across the studies by identifying segments of text relevant to the research questions. Initially, the papers were separated according to their specific syndemic combinations. Each paper was then summarised based on the extracted data, capturing key findings and relevant details. The papers were then grouped into their respective syndemic categories and analysed to understand the specific dynamics within each combination.

Using MAXQDA22 software, I coded the summaries of the papers and developed themes based on the recurring patterns and insights for each group. MAXQDA is a qualitative data analysis software that functions similarly to other Computer Assisted Qualitative Data Analysis software such as ATLAS.ti and NVivo. It enables researchers to organise, code, and visualise qualitative data systematically, including transcripts, field notes, images, and audio-visual materials. In our research project, MAXQDA22 was the primary tool used for qualitative analysis, and I received formal training in its application as part of the project's methodological preparation.

One of the reasons MAXQDA was selected is its user-friendly interface. It also offers strong visualisation features and handles mixed data types, making it particularly useful for our work, which included both narrative and arts-based data. Importantly, while the software assisted in data management and organisation, all interpretive decisions, code refinement, and thematic development were conducted by me as the researcher, ensuring that the analytic work remained intellectually driven and grounded in the study's conceptual framework.

The identified themes included types of positive parenting practices, harsh and inconsistent parenting practices, MH disorders among mothers and caregivers, the mediating and moderating roles of the epidemics and impact of these factors on parenting practices. This systematic approach ensured a comprehensive thematic analysis, providing a thorough understanding of impact of the co-occurrence of the epidemics on parenting practices.

The PRISMA Reporting Checklist was used to ensure that all aspects of systematic reviews were reported accurately. This is reflected in **Table 3.**

Table 3: PRISMA Reporting Checklist (Page et al., 2021)

Section and Topic	Item #	Checklist item	Location where item is reported
RESULTS			
Study selection	16a	Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram.	
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.	
Study characteristics	17	Cite each included study and present its characteristics.	
Risk of bias in studies	18	Present assessments of risk of bias for each included study.	
Results of individual studies	19	For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots.	
Results of syntheses	20a	For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies.	
	20b	Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect.	
	20c	Present results of all investigations of possible causes of heterogeneity among study results.	
	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.	
Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.	
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.	
DISCUSSION			
Discussion	23a	Provide a general interpretation of the results in the context of other evidence.	
	23b	Discuss any limitations of the evidence included in the review.	
	23c	Discuss any limitations of the review processes used.	
	23d	Discuss implications of the results for practice, policy, and future research.	
OTHER INFORMATION			
Registration and protocol	24a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.	
	24b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.	
	24c	Describe and explain any amendments to information provided at registration or in the protocol.	
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.	
Competing interests	26	Declare any competing interests of review authors.	
Availability of data, code and other materials	27	Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review.	

Section and Topic	Item #	Checklist item	Location where item is reported
TITLE			
Title	1	Identify the report as a systematic review.	
ABSTRACT			
Abstract	2	See the PRISMA 2020 for Abstracts checklist.	
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	
METHODS			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	
Information sources	6	Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	
Selection process	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.	
Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process.	
Data items	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.	
	10b	List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.	
Study risk of bias assessment	11	Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process.	
Effect measures	12	Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results.	
Synthesis methods	13a	Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item #5)).	
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.	
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.	
	13d	Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.	
	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).	
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	
Reporting bias assessment	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).	
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	

3.4. Methodology for the qualitative study (Chapter 5 and 6)

3.4.1. Study Setting

The study was conducted in the Ehlanzeni District Municipality, Mpumalanga, specifically in Bushbuckridge (rural) and City of Mbombela (peri-urban) (Figure 6**)**. According to Statistics South Africa (Stats SA), the population of the Bushbuckridge Local Municipality was approximately 500,000 in 2016 (Statistics South Africa, 2018), whilst the City of Mbombela is said to have a population of 695 913 (Statistics South Africa, 2018). Furthermore around 20% of Mpumalanga's households reside in RDP/government-subsidized homes (Statistics South Africa, 2018). Moreover, Mpumalanga faces significant infrastructure and service backlogs, with access to water being the most pressing challenge (Statistics South Africa, 2018). A survey conducted by Stats SA in 2017 identified the lack of safe and reliable water as the biggest challenge by Mpumalanga residents with 29.1% citing it as their primary concern, followed by employment opportunities at 12.6%, and inadequate roads at 10.9% (Statistics South Africa, 2018).

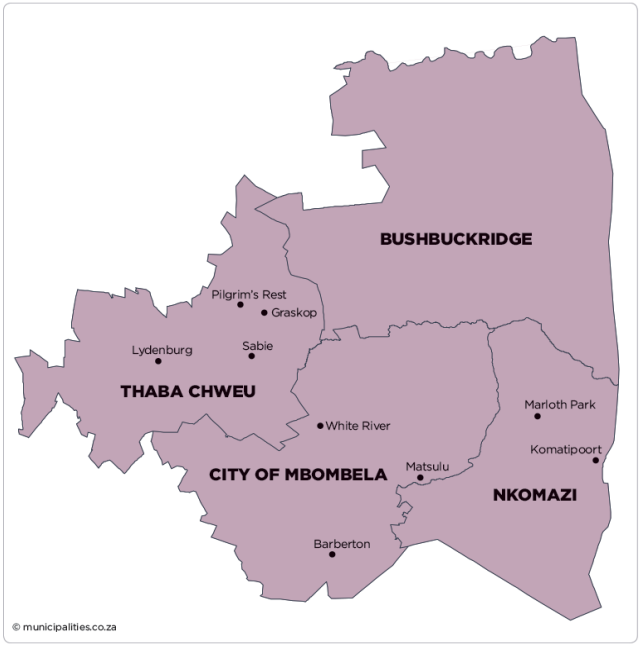

Figure 6: Mpumalanga, the study site.

Regarding the prevalence of the three epidemics, Mpumalanga was reported to have an estimated HIV prevalence of 17.3% in 2017 (Simbayi et al., 2017). The incidence rate in 2016 was 0.7% for the total population, with a higher incidence among youth at 1.7%. Notably, young women were more affected than young men with rates of 1.23% versus 0.87% respectively (Simbayi et al., 2017). In terms of IPV, a study found that 28% of women in Mpumalanga had been physically abused in their lifetimes by a current or ex-partner (Jewkes, 1999; Vetten, 2005). Additionally, a national study revealed that 29.2% of adults in Mpumalanga had experienced some common mental disorders at some point in their lives (Herman et al., 2009).

3.4.2. Participant selection

The selection of participants in the qualitative studies was conducted in three steps (see ***Figure 7***). The sample for the qualitative in-depth research was purposively drawn from the INTERRUPT_VIOLENCE study, comprising 20 women living with any two of the epidemics (IPV, MH and HIV). Detailed participant characteristics are included in Chapters 5 and 6 (Papers 2 and 3). Recruitment was based on referral flags (***Table 3)*** identified from participants' responses to the quantitative questionnaire. If participants were flagged for having experienced IPV, facing MH challenges, or being HIV positive, their responses were further investigated to determine if they experienced more than one of the conditions concurrently. Additionally, participants had to be primary caregivers of at least one child under the age of 18 to be invited for an interview. It is important to note, that even if some participants were not flagged for poor MH, those with either HIV or IPV experiences were still invited for an interview to identify any potential symptoms indicative of poor MH. Research indicates that both IPV and HIV are often associated with poor MH, justifying this approach (Lagdon et al., 2014). Furthermore, participants who declined referrals during the quantitative interviews were not excluded; they were still offered the opportunity to participate in the qualitative study.

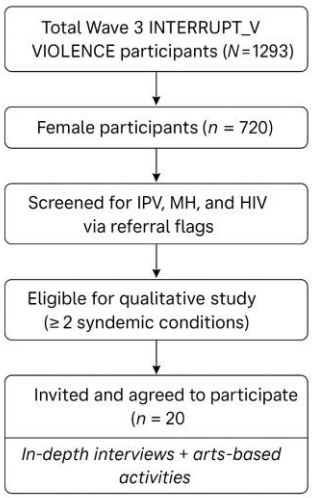

Figure 7: Participant selection

Table 4: Automatic referral flags based on participant responses in questionnaire

Referral Category	Action steps for fieldworker
CODE Black / Adult suicidality (disclosed or observed)	Discuss with participant that we think they need help with their mental health and the need for referral to Social Worker and health services. If they agree, make urgent referral to Social Worker. If they disagree, make referral to Social Worker, and discuss with her but highlight that they did not want further involvement.
CODE Purple / Domestic violence, no children in the home & no weapons (disclosed)	Participant has disclosed domestic violence. Offer support through Social Worker, if participant agrees, make referral to Social Worker; choose correct category based on whether weapons are involved.
CODE Purple / Domestic violence, no children in the home & weapons (disclosed)	
CODE Red / Sexual abuse or violence experienced by a current adult (disclosed)	Participant has disclosed sexual violence experience. Offer support through Social Worker, if participant agrees, make referral to Social Worker. If rape happened within the last 72 hours, tell participant they should be seen urgently at a clinic to receive post-exposure prophylaxis and if female pregnancy prophylaxis. IF participant agrees to see Social Worker, make this an urgent referral.
CODE Navy / Psychosis or mental health issues (disclosure)	Discuss with participant that you think it would be good for them to be referred to mental health services and suggest they talk to Social Worker. If they agree, make referral to Social Worker.
CODE H / Positive HIV test	participant has tested positive to HIV. Refer to the clinic for follow-up. Refer to Social Worker if they have any biological child/children to ensure they are followed up and HIV testing for child is arranged.

3.4.3. Qualitative data collection

The aim of the in-depth interviews was to firstly explore the experiences of the women living with two or more of the epidemics (IPV, MH and HIV) and to understand their coping strategies living with these interconnected epidemics. Additionally, I sought to uncover the underlying mechanisms that led to specific parenting practices among these women.

Interviews were conducted face-to-face, in a private space usually in the participants' homes at a convenient time for them. Each interview lasted approximately 60-90 minutes. I conducted the majority (90%) of the interviews, with assistance from two research assistants who were also conducting interviews for the INTERRUPT_VIOLENCE study. Arts-based methods were incorporated as part of qualitative research methods to offer participants active involvement in the research process. The use of non-verbal methods such as drawings, are increasingly recognized as ethical as they offer research subjects active participation in the research process (Burns & Kaufman, 1983). The arts-based methods used in the interviews included the Kinetic Family Drawing (KFD), River of life and the sandbox (Burns &

Kaufman, 1983; Denov & Shevell, 2021; Mannay, 2016; Weinrib, 2004). More details on these methods can be found in Chapter 5 and 6 (Papers 2 and 3). An example of the methods used is provided in ***Figures 8, 9 and 10.***



Figure 8: A Kinetic family drawing



Figure 9: A depiction of Sandplay activity



Figure 10: Road of life drawing

3.4.4. Research Philosophy

The guiding research philosophy of the qualitative study adopted a constructivist paradigm. In this paradigm reality is understood as a socially constructed and shaped by the observers' experiences. For the qualitative section of this thesis, it was essential to understand the meanings and interpretations that the participants assigned to their experiences. This approach focusses on the participants' stories and perspectives, acknowledging the influence of their backgrounds and experiences, and aims to develop a coherent narrative or pattern of meanings through the research process (Bleakley, 2005). The methods supporting this approach predominantly focus on collecting narratives through interviews, personal documents and storytelling (Bleakley, 2005). In this study, qualitative data analysis was centred on the participants narratives. A narrative approach was used focussing on the stories that participants tell to understand and describe their lives (Riessman & Quinney, 2005). Specifically, both lived and autobiographical approaches were used (Bruner, 2004; Connelly & Clandin, 2006). The lived narrative approach captured participants' stories about their lived experiences, emphasizing, everyday life and the personal, social aspects (Connelly & Clandin, 2006). The autobiographical approach involved participants recounting their life stories, providing a comprehensive view of their personal experiences. This method provided a comprehensive view of their personal histories and how their histories shaped their current experiences (Bruner, 2004).

3.4.5. Data analysis

The research assistants and I translated and transcribed the interviews verbatim from Siswati and Xitsonga to English. Transcriptions conducted by the research assistants were checked for accuracy by me. Thematic analysis, following Braun & Clarke's (2022) six-step process, was used to analyse both the arts-based methods and the in-depth interviews. This six-step analysis involved: 1) familiarizing self with the data, 2) developing initial codes, 3) searching for themes, 4) reviewing the themes 5) defining and naming the themes and 6) producing the report (Braun & Clarke, 2022). Familiarizing myself with the data involved reading and re-reading the transcripts to become deeply familiar with the content. Notes and initial observations were made during this stage to capture first impressions.

For the arts-based methods, both the questions related to the drawings and the pictures themselves were analysed. An initial broad coding framework was developed deductively

(top-down) based on the study's research questions (Creswell et al., 2018). Using MAXQDA22, broad codes were applied to all transcripts. Subsequently, I developed a system of fine codes inductively (bottom-up) from the data, deriving meaning from the data itself rather than imposing preformed ideas (Creswell et al., 2018)

Initially, I applied the broad codes to the transcripts, and then, with the help of my supervisor, fine codes were applied to further refine the analysis. Throughout the process, structured reflection and field notes served as an additional decision-making “audit trail.” These notes documented the rationale behind coding decisions and thematic developments, ensuring transparency and rigor in the analysis.

In the process of identifying the themes in the data, the codes were grouped into potential themes representing broader patterns of meaning within the data. These themes were then reviewed to ensure that they accurately reflected the data, checking their relevance to the coded data extracts and the entire data set. Each theme was then clearly defined and named. Finally, an analytical summary was developed on each study objective using illustrative quotes to support key emerging conclusions.

3.4.6. Reflexivity

An important aspect of qualitative research is the concept of reflexivity. Reflexivity is the process of examining one’s own beliefs, judgements and practices during the research process and how these may potentially influence the research (Creswell et al., 2018).

I acknowledge that my personal beliefs, cultural understanding and personal experiences may have shaped my interpretation and the presentation of the participant’s stories, potentially introducing some subjective biases. As a black, educated and middle-class women, my perspective on corporal punishment, as wrong, could have influenced the data analysis. This belief may have led me to not place enough emphasis on instances of corporal punishment as a cultural practice or as a way in which some parents believed they were showing love, potentially affecting the balance of the analysis.

Furthermore, my middle-class background could have also influenced how participants perceived me during the research process. They might have seen me as an outsider or as someone who does not fully understand their struggles and daily realities. This perception

could have impacted their willingness to share certain experiences or details, potentially affecting the depth and authenticity of the data collected.

To mitigate these potential biases and to help participants see me as someone who could be trusted and understand their realities, several strategies were employed. Firstly, concerted efforts were made to build rapport and trust with the participants by always engaging them in a respectful and empathetic manner. Additionally, culturally sensitive language and approaches were used during the interviews to ensure that participants felt more comfortable and understood. Furthermore, by using trauma-informed skills that I learned through the study and psychological supervision I was able to establish an empathetic and supportive interview environment. These skills included managing my own emotional responses, setting a calm tone before starting the interview, listening with empathy rather than sympathy, and carefully observing participant cues to avoid probing too deeply if they were uncomfortable.

Additionally, the research assistants and I kept detailed field notes after the interviews. These notes included reflective accounts of the interviews, capturing the interviewers' thoughts and reactions. This practice allowed us to document our immediate impressions and consider how perspectives might shape our understanding of the data. We also had reflective conversations periodically throughout data collection with the larger investigative team to further discuss insights and reflect on the findings. By systematically reflecting on these accounts, we aimed to achieve greater transparency and reflexivity in our analysis, aiming to present the participants' stories as truthfully as possible while acknowledging the influence of our own positionality.

3.5. Methodology for quantitative study (Chapter 7)

3.5.1. Nested Study design and study population

This quantitative study was a cross-sectional study using the Wave 3 data of the INTERRUPT_VIOLENCE study. The parent study is an independent follow up of the original 1664 male and female participants who participated in the Young Carers study (in 2010–2011 & 2011–2012) when they were adolescents. At the time of this PhD participants were aged 22-30 (Meinck et al., 2023). Only female participants or participants identifying as women were included in the secondary data analysis for this PhD. The primary study,

INTERRUPT_VIOLENCE, interviewed a total of 1,293 participants in Wave 3. From this cohort, 720 were women. For the purpose of this analysis, the focus was narrowed to the 547 women who were primary caregivers to children. **Figure 11** illustrates the participant selection, and the prevalence of IPV, poor MH and HIV among the participants. It also depicts the syndemic combinations that the women were living with, which form the basis of the analysis.

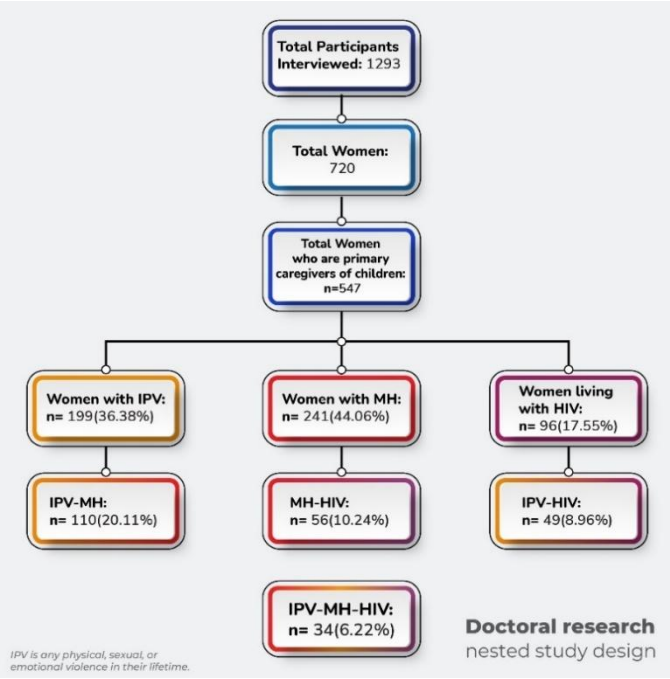

Figure 11: Doctoral research nested study design

3.5.2. Quantitative Data Collection Procedures

Data collection for the study was conducted using tablets provided to each field worker. Field workers received extensive training on using the tablets, logging data, and providing guidance to participants when necessary. Participants were given the option to complete the questionnaire with the help of an interviewer or independently. To maintain confidentiality, participants were only identified through a unique participant ID and no identifying information was included in the questionnaire. Data was later collated, with the confidentiality of the participants upheld. The use of mobile devices, such as tablets, has been shown to increase the accuracy of participant answers and provide greater confidentiality (Gorbach et al., 2013; Jaspan et al., 2007; Malotte et al., 2011). The questionnaires were approximately 90-180 minutes in length and were available in SiSwati, Xitsonga, and

English. All adult participants completed sections on sensitive topics, such as IPV victimization and non- partner sexual violence using audio-computer assisted self-interviewing (ACASI). This method included pre-recorded questions which participants listened to via headphones, allowing them to complete these sections without the help of an interviewer. Additionally, interviews were conducted in private, in a setting agreed upon with the fieldworker, to ensure that they could not be overheard or closely observed by others.

3.5.3 Ethical Considerations

The primary study, INTERRUPT_VIOLENCE, received approval from the Wits Human Research Ethics Committee (HREC) (M190949) (Appendix A), the Ethics Research Committee in the School of Science and Political Sciences at the University of Edinburgh (264227) (Appendix B), the Provincial Department of Health (MP-202012-003) (Appendix C), and the North-West University Health Research Ethics Committee (NWU-00329-20-S1) (Appendix D). Additionally, a full HREC approval for the secondary analysis was obtained (M220526) (Appendix E).

All researchers in the study received extensive training on research ethics prior to the study activities. Given the special considerations of researching violence, all aspects of this study adhered to the WHO ethical guidance on IPV research (World Health Organization, 2001).

The stigma and psychological risk of participants

One of the key risks of this study was the potential for stigmatisation and psychological harm to the participants due to the sensitive nature of topics being researched. Research on violence exposure and perpetration can place participants at risk, especially from their partners or other family members. To mitigate these risks, rigorous training of interviewers on ethical protocols, confidentiality, privacy and dealing with disclosures was particularly important to protect vulnerable participants. The study adhered to recommendations from experts on IPV (ISPCAN, 2016; R. Jewkes et al., 2012; WHO, 2005). These recommendations include not coercing those who are reluctant to participate, referring to the study by its local name— ‘Young Carers 3’—rather than a study on violence. Additionally, fieldworkers were trained to present the study as one focussed on the well-being of young adults and their children.

The mental health of the participants

Given that the study focussed on the syndemic of IPV, MH and HIV, it was inevitable that many participants were experiencing clinical levels of depression, anxiety, post-traumatic stress or suicidal ideation (See appendix F). It was critical to respond ethically and make every effort to provide referrals and support for participants exhibiting significant distress during the interviews. We aimed to ensure that the research was a positive experience for all participants, and that all consent was both voluntary and informed. The study also employed two full-time social workers to assist with managing any feelings of distress, handling referrals for ongoing counselling and support as required, and following the study's distress and referral protocol (See appendix F).

Violence disclosure

This study investigated violence victimisation and perpetration. According to the Children's Act (2005), mandatory reporting is required for all cases of child abuse. If a participant disclosed engaging in any violence towards a child, the study social worker was informed. This requirement was clearly stipulated in the consent form signed by the participants to ensure that they were aware of this obligation. Based on the distress protocol the social worker made a decision regarding which services to contact as well as the processes for referrals (See appendix F).

Participant's HIV status

Adult participants were offered an oral HIV self-testing kit, which included a test stick used to swab the participant's gums for saliva and a test tub with liquid. Interviewers received certified training to provide counselling to participants related to the test results and to address any anxiety participants might experience while waiting for their test results. Protocols were also established to link participants who tested positive for HIV to clinical care. Connections with local clinics were established prior to commencement of the study to ensure onward referral as needed.

Privacy and confidentiality

Maintaining participant privacy was of high importance, for both ethical reasons and also to increase the reliability of data collected. Efforts were made to maximize privacy during all interviews, which were conducted out of earshot in various locations, such as the study office, in cars, and mostly outdoors, under a tree. Research staff were trained in strategies to ensure privacy. This included explaining to family members that the interview was private

and changing the conversation to something else if a family member came into the room while something sensitive was being discussed

Confidentiality of data was also crucial. The research team was trained in data confidentiality procedures. All data handled by the study team was pseudonymised using unique identifier numbers, participants contact details and birth dates were removed from the dataset and stored separately for referrals and further follow-up. Data collected on the tablets were password protected and only accessible to the individual interviewer and project management staff. Signed consent forms were scanned, encrypted and uploaded and stored on the server, while the paper-based consent forms were stored in locked cabinets in the office.

Although MAXQDA22, the software used for qualitative data analysis, which includes AI-assisted features, no identifiable participant data were stored or shared by the software. All transcripts were de-identified before analysis, and the software was used strictly for manual, researcher-led coding and theme development. This ensured ethical handling of data in line with institutional and project-specific confidentiality standards.

3.5.4. Measures

Quantitative data were obtained through structured questionnaires with the use of validated measures (**Table 5**). The primary outcome of interest; physical and emotional violence was assessed using the International Society for the Prevention of Child Abuse and Neglect Child Abuse Screening Tool – Parent version (ICAST-P) (Runyan et al., 2009). The ICAST-P is designed to assess child abuse as reported by parents (Runyan et al., 2009). For the exposures of interest, IPV, MH, and HIV various scales were used. IPV victimization was assessed using the WHO domestic violence instrument (Garcia-Moreno et al., 2005). MH was assessed using multiple scales, GAD-7 for generalized anxiety (Löwe et al., 2008), the ASQ for suicidality (Horowitz et al., 2012), the PHQ-9 for depression (Adewuya et al., 2006; Kroenke et al., 2001) and the PTSD-8 for post-traumatic stress disorder (Hansen et al., 2010). HIV status was assessed using an oral swab self-testing kit and through self-reported HIV status.

Table 5: Detailed measures used for assessing IPV, MH outcomes and child violence

Measure	Item (s)	Response	Coding
Intimate Partner Violence Measures			
WHO domestic violence instrument (Garcia-Moreno et al., 2005)	**Has he or any other partner…** 1. Insulted you or made you feel bad about yourself. 2. Belittled or humiliated or made you feel small or ashamed you in front of other people. 3. Did things to scare or intimidate you on purpose (e.g. by the way he looked at you, by yelling and smashing things)? 4. Threatened to hurt you or someone you care about? **Has he or any other partner...** 1. Slapped you or thrown something at you that could hurt you? 2. Has he or any other partner pushed you or shoved you? 3. Has he or any other partner hit you with his fist or with something else that could hurt you? 4. Has he or any other partner kicked you, dragged you or beaten you up? 5. Has he or any other partner choked or burnt you on purpose? 6. Has he or any other partner threatened to use or actually use a gun, knife or other weapon against you? **Has he or any other partner…** 1. Physically forced you to have sexual intercourse when you did not want to? 2. Did you ever have sexual intercourse you did not want because you were afraid of what he might do? 3. Did he ever force you to do something sexual that you found degrading or humiliating?	Yes No	Any emotional abuse Any physical abuse Any sexual abuse Any reporting of emotional, physical or sexual abuse was coded as lifetime IPV
Mental Health Outcomes			
Patient Health Questionnaire- 9 PHQ (Adewuya et al., 2006)	1. Little interest or pleasure in doing things. 2. Feeling down, depressed or hopeless 3. Trouble falling asleep/staying. asleep, sleeping too much. 4. Feeling tired or having little energy 5. Poor appetite or overeating. 6. Feeling bad about yourself or that you are a failure or have let yourself or your family down. 7. Trouble concentrating on things, such as reading the newspaper or watching television. 8. Moving or speaking so slowly that other people could have noticed. Or the opposite, being so fidgety or restless that you have been moving around a lot more than usual. 9. Thoughts that you would be better off dead or hurting yourself in some way.	not at all (0); several days (1); more than half the days (2); nearly every day (3); refuse to answer (999)	0-4 none-minimal 5-9 mild 10-14 moderate 15-19 moderately severe 20-27 severe 0-9 were recoded to 0 indicating no or mild depression. 10-27 were recoded 1 indicating moderate to sever depression
Post Traumatic Stress Disoder-8 (Hansen et al., 2010)	1. Recurrent thoughts or memories of the event. 2. Feelings as though the event is happening again. 3. Recurrent nightmares about the event 4. Sudden emotional or physical reactions when reminded of the event. 5. Avoiding activities that remind you of the event. 6. Avoiding thoughts or feelings associated with the event. 7. Feeling jumpy, easily startled. 8. Feeling on guard.	not at all (0); rarely (1); sometimes (2); most of the time (3) ; refuse to answer (999)	Hyperarousal: a score of >=2 on any of the items in the cluster Avoidance: a score of >=2 on any of the items in the cluster Intrusion: a score of >=2 on any of the items in the cluster Binary variable 1: positive score in all clusters 0 : no symptoms across all clusters
Generalized Anxiety Disorder-7 (Löwe et al., 2008)	Over the last 2 weeks, how often have you been bothered by any of the following problems? 1. Feeling nervous, anxious or on edge 2. Not being able to stop or control worrying. 3. Worrying too much about different things 4. Trouble relaxing	not at all (0); several days (1); more than half the days (2); nearly every day (3); refuse to answer (999)	0-4 Minimal anxiety 5-9 mild anxiety 10-14 moderate anxiety

	5. Being so restless that it is hard to sit still. 6. Becoming easily annoyed or irritable 7. Feeling afraid as if something awful might happen		greater than 15 severe anxiety 0-9 were recoded to 0, indicating either no or only mild anxiety. 10 -21 were recoded to 1, indicating serious anxiety.
Ask Suicide Screening Questions (Horowitz et al., 2012)	1. Have you wished you were dead? 2. Have you been having thoughts about killing yourself? 3. Have you ever tried to kill yourself?	1) Yes 2) No	Yes to any recoded as suicidality
Violence against children			
International Society for the Prevention of Child Abuse and Neglect – Parent report version (ICAST-P) provide citation (Runyan 2009)	How often you have used each of these behaviours with (Name Child 1) in the past year. **Physical violence** 1. Shook him/her aggressively? 2. Hit him or her with an object (such as a wooden spoon, flip flop, stick, broom, cane, sjambok, or belt)? 3. Hit him/her on head? 4. Hit him/her on the bottom? 5. Twisted her/his ear? 6. Kicked her/him? 7. Have you ever pinched your child to cause pain? 8. Burned or scalded him/her? 9. Hit him or her over and over again with object or fist ("beat-up") **Emotional violence** 1. Shouted, yelled, or screamed at him/ her angrily. 2. Threatened to invoke harmful people, ghosts, or evil spirits against him/her? 3. Locked out of home? 4. Insulted him/her by calling him/her dumb, lazy or other names like that?	once or twice in the past year (2); several times a year (3); about once a month (4); several times a month (5); once a week or more (6);	Never vs once or more
	5. Threatened to hurt or kill him/ her? 6. Use public humiliating to discipline him or her? 7. Told him/her you wished s/he were dead or had never been born? **Neglect** 1. Withheld a meal as a punishment? 2. Your child was not given anything/enough to eat and/or drink even though food and water was available. 3. Your child was made to wear clothes that were dirty, torn, or inappropriate for the season even if you could afford to buy these		

Covariates

The covariates that were controlled for in the study included demographic variables, such as age, educational level, and number of children, as well as socio-economic status, which encompassed questions related to food insecurity and employment. Additionally, we also controlled for substance use disorder, rural vs peri-urban site, childhood experience of abuse, biological vs non biological parent and the number of children that the participant was a primary caregiver for.

3.5.5. Data Analysis

The analysis for Paper 4 was conducted in Stata 17.0 (Stata Corp). Firstly, we examined all the scales for internal consistency using Cronbach's alpha. Data were analysed in four steps. First, prevalence statistics were calculated for the outcome variables (maternal use of

physical and emotional violence) and the syndemic variables (IPV, MH and HIV). This included the prevalence of the co-occurrence of each of the epidemics, such as MH-HIV, IPV-HIV, MH-IPV, and IPV-MH-HIV. Second, bivariate and multivariate logistic regressions were conducted to explore the associations between the syndemic variables (IPV, MH and HIV), and each of the violence outcomes (maternal use of emotional and physical violence), while accounting for the potential confounders. Separate multivariate logistic regressions were performed for each outcome, with odds ratios and 95% confidence intervals reported for all analyses.

In the third step, two sets of marginal effects models were conducted (one for each child violence outcome) to test the additive effects of cumulative syndemic exposure on child violence outcomes via predicted percentage probabilities, with all covariates from stage 2 held at mean values. Finally, to test the assertion that concurrent health and social problems interact to increase maternal use of physical and emotional violence towards their children, the multiplicative interaction was computed. This involved calculating 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.

To measure interaction on the additive scale, three indices were computed based on odds ratio estimates: Relative Excess Risk due to Interaction (RERI), Attributable Proportion (AP), and Synergy Index (S). These indices assessed whether the combined effect of two exposures was more or less than the sum of their separate effects.

3.5.6 Limitations

The quantitative study had several limitations, which are comprehensively discussed in Chapter 7. Beyond those described in Chapter 7, additional limitations include the extensive duration of the quantitative interview, which lasted approximately 90-120 minutes. Furthermore, the mental health questions and HIV testing were positioned towards the end of the interview. By the time participants reached the mental health questions, they may have been fatigued, leading to inaccurate responses. For example, participants who answered "yes" to certain questions required follow-ups, which might have led them to start answering "no" to avoid further questioning from the interviewer, resulting in under-reporting. Additionally, because the HIV test was at the end of the interview, participants might have declined to test due to the length of the interview and the significant time they had already invested.

Chapter 4: Scoping Review

Silima, M., Christofides, N., Franchino-Olsen, H., Woollett, N., Wang, J., Ho-Foster, A., Maleke, K., Meinck, F. (2024) "*Co-occurring Intimate Partner Violence, Mental Health, HIV and Parenting Among Women: A Scoping Review,"* Trauma, Violence and Abuse https://doi.org/10.1177/15248380241268807



Review Manuscript

Co-occurring Intimate Partner Violence, Mental Health, Human Immunodeficiency Virus, and Parenting Among Women: A Scoping Review

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Abstract

Little research exists on the human immunodeficiency virus (HIV)-intimate partner violence (IPV)-mental health (MH) syndemic impact on parenting. The objective of this scoping review is to identify and summarize the available evidence regarding the syndemic relationship between HIV or Acquired Immune Deficiency Syndrome (AIDS), IPV, and poor MH among mothers and caregivers who identify as women. We conducted the review according to the Joanna Briggs Institute and Preferred Reporting Items for Systematic reviews and meta-analyses extension for scoping reviews guidelines, a comprehensive search was conducted from 2001 to September 2023. The inclusion criteria targeted studies examining at least two of the HIV, IPV, or MH epidemics among participants and their syndemic impact on parenting. Both qualitative and quantitative studies were included. Covidence software was used to screen and extract data. Twenty-three studies were included in the analysis. Most of the studies were conducted in the United States. Furthermore, all the studies used quantitative research designs, with most being longitudinal. Most of the research was concentrated on the IPV-MH syndemic with no research found on the HIV-IPV syndemic impact on parenting. Research on the HIV-IPV-MH syndemic found that an HIV diagnosis exacerbated the negative impacts of IPV-MH on parenting. Research on IPV-MH showed that this syndemic significantly influences parenting, leading to less nurturing and more punitive behaviors. Studies did not find a direct association between IPV and harsh parenting practices, the relationship was mediated by poor MH. Studies examining the HIV-MH syndemic found that anxiety and maternal depression were the most frequent MH disorders. The review revealed that living with the different syndemics, (IPV-MH-HIV, HIV-MH, and IPV-MH) adversely affects parenting practices, resulting in harsher parenting.

Keywords

syndemic, HIV or AIDS, intimate partner violence, mental health, parenting

Chapter 4

Co-occurring Intimate Partner Violence, Mental Health, HIV and Parenting Among Women: A Scoping Review

Abstract

Objective: Little research exists on the HIV-IPV-MH syndemic impact on parenting. The objective of this scoping review is to identify and summarise the available evidence regarding the syndemic relationship between HIV or AIDS, IPV and poor MH amongst mothers and caregivers who identify as women**.** Methods**:** We conducted the review according to the JBI and PRISMA-ScR guidelines, a comprehensive search was conducted from 2001 – September 2023. The inclusion criteria targeted studies examining at least two of the HIV, IPV, or MH epidemics amongst participants and their syndemic impact on parenting. Both qualitative and quantitative studies were included. Covidence software was used to screen and extract data. Results: Twenty-three studies were included in the analysis. Most of the studies were conducted in the United States. Furthermore, all the studies used quantitative research designs, with most being longitudinal. Most of the research was concentrated on the IPV-MH syndemic with no research found on the HIV-IPV syndemic impact on parenting. Research on the HIV-IPV-MH syndemic found that an HIV diagnosis exacerbated the negative impacts of IPV-MH on parenting. Research on IPV-MH showed that this syndemic significantly influences parenting, leading to less nurturing and more punitive behaviours. Studies did not find a direct association between IPV and harsh parenting practices, the relationship was mediated by poor MH. Studies examining the HIV-MH syndemic found that anxiety and maternal depression were the most frequent MH disorders. Conclusion: The review revealed that living with the different syndemics, (IPV-MH-HIV, HIV-MH and IPV-MH) adversely affects parenting practices, resulting in harsher parenting.

Keywords: syndemic, HIV or AIDS, Intimate Partner Violence, Mental health, Parenting

Introduction

HIV or AIDS (hereafter referred to as HIV), Intimate Partner Violence (IPV) and poor mental health (MH) are epidemics that influence the overall wellbeing and quality of life of women and in particular mothers and caregivers in a society (UNAIDS, 2023; World Health Organization, 2023a) .

The magnitude of maternal HIV, IPV and MH globally, is extremely high with widespread impact on society and as a result can be categorized as epidemics. In terms of HIV, there is a plethora of research that has shown that HIV is an epidemic, with over 39 million people globally living with HIV in 2022 and over half of these being women and girls (UNAIDS, 2023; World Health Organization, 2023a). Moreover, the widespread nature of IPV globally, and its significant health, social and economic impact highlight the epidemic nature of the issue (Garcia Moreno et al., 2013). The World Health Organization (WHO) has defined violence against women as a problem of pandemic proportions, with statistics showing that globally 1 in 3 women have experienced either physical or sexual violence in their lifetime by an intimate partner (World Health Organization, 2021). Furthermore, in South Africa IPV has been ranked as the second highest burden of disease after HIV, contributing substantially to disability adjusted years (DALYs) especially among women (Norman et al., 2010), In terms of poor MH, according to the research, one in eight people are affected by MH disorders globally with anxiety and depressive disorders being the most common among both men and women .(World Health Organization, 2022b). These epidemics especially when intersecting and co-occurring often lead to complex and long-term challenges for women, significantly impacting their lives and how they parent (Sherr et al., 2016; Suardi et al., 2020).

Women living with HIV often experience violence both in their homes and in healthcare settings which can hinder their ability to access and adhere to treatment. For women in violent relationships, the fear of violence often leads to non-disclosure of HIV status, increased anxiety and lower adherence to treatment(Orza et al., 2017) . Additionally, stigma related to each of these epidemics remains high. Research conducted by HSRC in 2022 indicated that 15.4% of participants had experienced stigma related to their HIV-positive status often resulting in their

exclusion from social activities (Cloet et al, 2022). The internalized stigma associated with IPV victimization, poor MH and HIV impacts women's health seeking behaviours, including treatment access and adherence (Alemu et al., 2023; Orza et al., 2017)Poverty often restricts access to healthcare services such as HIV testing, treatment programs such as PrEP (Njue et al., 2011; Orza et al., 2017). Additionally, poverty limits access to MH services which results in untreated mental and health conditions that worsen over time(South African National Department of Health, 2023). Furthermore, many women living with these epidemics face significant levels of institutionalized violence in primary healthcare setting settings. This institutionalized violence includes discrimination and mistreatment by healthcare providers which further discourages women from seeking necessary medical care. Studies have shown that women living with HIV often experience breaches of confidentiality, denial of services, and coercive practices within healthcare settings, particularly during the perinatal period (Bogart et al., 2013; S. Brown & Sprague, 2021; Famoroti et al., 2013; Mena Rosa, 2023; Pantelic et al., 2020).

Parenting is a multifaceted concept. Some researchers have described it as the provision of support, care, and love (Virasiri et al., 2011) and the shaping of a child's attitudes, behaviour, and emotional function (Pflieger & Vazsonyi, 2006). The current review adopts UNICEF's broad definition of parenting, which encompasses the array of interactions and practices associated with childcare (UNICEF, 2019). Parenting includes both positive aspects, such as the provision of secure environments for the child and responsive caregiving (Maccoby, 1992) as well as harsh and inconsistent aspects, such as harsh discipline and physical aggression which often involves yelling, spanking, and strict or rigid enforcement of rules towards the child (Surjadi et al., 2013; M. Wang & Qi, 2017; M. Wang & Wang, 2018). Child abuse on the other hand is a series of acts by a caregiver, parent or other adult that results in significant harm of the child, this can either be physical, sexual or emotional. Child neglect involves failure of the child's caregiver to provide for the child's basic needs (World Health Organization, 2002)

Child abuse represents a significant global public health issue (Stoltenborgh et al., 2013) with substantial numbers of adults reporting having suffered physical and emotional abuse or neglect during childhood (Stoltenborgh et al., 2013). The consequences of child abuse extend all the way to adulthood, with adults previously abused showing higher rates of poor MH than those who have not, especially depression, suicide attempts and substance use disorder

(Fergusson et al., 2013; Gilbert et al., 2009). Other issues include violence perpetration, increased risk of abuse victimization, high-risk sexual behaviours and unintended pregnancy (Abbasi et al., 2014).

Studies focused on the interaction between HIV, IPV and poor MH often use syndemic theory to analyse these relationships. According to the theory the synergistic clustering of these conditions influences the health burden of a specific population more than the summation of the additional symptom (Singer, 1996). The theory emphasizes the structural and environmental factors such as poverty, unequal gender relations as well as stigma that often exacerbate the co-occurrence of these epidemics (Singer, 1996). Much of the current research on syndemics has focussed on women in the United States (S. L. Illangasekare & Gilen, 2011; Meyer et al., 2011) and on men who have sex with men with a focus on violence victimization and HIV risk (Chakrapani et al., 2019; Safren et al., 2018), and more recently among heterosexual men (Hatcher, Turan, et al., 2022b). Current literature tends to focus more on the micro-level factors because of the immediate and observable nature of these factors. However, this emphasis can lead to limited understanding of the broader structural influences, such as economic policies and social inequalities, potentially oversimplifying the complex interactions in syndemics (Pirrone et al., 2021). Pirrone et al (2021) examined how context is conceptualized and studied in syndemic research, finding that context is often broadly defined, encompassing micro-level factors (e.g. living and working conditions) and macro-level factors (e.g. political and economic conditions). Gizamba et al (2023) further argue that understanding syndemics requires a comprehensive approach that includes micro, meso and macro-level factors (Gizamba et al., 2023). They highlight the importance of place-related contexts such as neighbourhood level influences, and advocate for the integration of diverse analytical methods, including geospatial analysis, to capture the complex, multi-level interactions that shape health outcomes (Gizamba et al., 2023)

According to Singer's original work, which was further elaborated on by Tsai and colleagues (2015), a syndemic requires two criteria, first disease or social conditions must occur within a particular context as a result of harmful social conditions, a phenomenon referred to as disease concentration. Second, these diseases or social conditions must interact within populations and individuals in a way that mutually exacerbates adverse health outcomes, known as disease interaction (Singer, 1996; Tsai & Burns, 2015).

Tsai and Burns (2015), note that few studies employ the correct analytical methods to demonstrate how co-occurring conditions synergistically affect HIV risk. Their systemic review found that most research takes a simplistic approach by merely quantifying the number of psychosocial issues rather than testing their interactions. Studies using syndemic theory have mostly looked at the additive or cumulative effects of the conditions rather than their synergistic or interactive associations, which are central to syndemic theory (Mendenhall et al., 2022; Tomori et al., 2018). Furthermore, Singer et al (2020) in their review of trends in syndemic research, revealed several methodological limitations in measuring syndemics. They note that the complexity of interactions between diseases, especially non-communicable diseases, makes it difficult to establish clear biological interactions and pathways. Although techniques such as regression and latent analysis are used, they often fail to fully specify these interactions, leading to challenges in the empirically supporting syndemic interactions (Singer et al., 2020).

Mendenhall et al (2022) also highlight the need for innovative scholarship in measuring syndemics emphasizing that the complex interactions among co-occurring conditions should be clearly defined and tested (Mendenhall, Kohrt, et al., 2022).

The interplay of HIV, IPV, and poor MH demands a syndemic approach to fully understand the impact on parenting. Such an approach considers the synergistic effect of co-occurring epidemics as more severe than the sum of their individual effects (Singer, 1996), going beyond additive to explore the interactive associations (Tomori et al., 2018).

Research has shown how HIV, IPV and poor MH can negatively influence parenting practices. For one there is a risk of psychiatric issues among women living with HIV, as a result of disease related stress such as poverty and stigma (Bachmann & Booysen, 2006; Kalichman & Grebler, 2010) . Furthermore, the compromised MH among mothers and caregivers living with HIV, often leads to harsh parenting such as neglect and in some cases aggressive behaviour towards the child (Murphy et al., 2010). In relation to IPV, research shows that mothers experiencing IPV are likely to resort to harsh discipline and in some cases, physical abuse, due to fear of aggravating the abuser or in other cases displaced anger (Chiesa et al., 2018). Furthermore, MH disorders in parents can result in less responsive and nurturing behaviours, affecting children's social and emotional adjustment (Elgar et al., 2004, 2007; S. H. Goodman & Gotlib,

1999). Focusing on mothers, who are often primary caregivers and disproportionately affected by these epidemics, is critical. The prevalence of HIV among pregnant women and the heightened risk for IPV and poor MH during and after pregnancy accentuate the need for more research in this area (Kieselbach et al., 2022; World Health Organization, 2022b)

Present study

The objective of this scoping review is to assess the extent of the literature on the HIV-IPV-MH syndemic amongst mothers and caregivers who identify as women and the relationship to parenting. We aimed to review the intersection of at least two of these epidemics and their impact on parenting. According to Arksey and O'Malley (2005), the aim of a scoping review is to rapidly map the key concepts that underpin a research area and to identify the main sources and type of evidence available (Arksey & O'Malley, 2005). A scoping review is aimed at determining the scope or coverage of a body of literature on a given topic and providing a clear indication of the volume of literature and studies available (Munn et al., 2018; Peters et al., 2020). Although a scoping review follows many of the same steps as a systematic review, it does not include a quality appraisal of the studies (Munn et al., 2018; Peters et al., 2020).

Methodology

The scoping review was conducted in accordance with the Joanna Briggs Institute (JBI) methodology for scoping reviews (Peters et al., 2020). Study methods and findings have been reported in line with the Preferred Reporting Items for Systematic reviews and meta-analyses extension for scoping reviews (PRISMA-ScR). Moreover, the scoping review has been registered on OSF registries and can be found at https://doi.org/10.17605/OSF.IO/4U67F. The research on the IPV-MH-HIV syndemic in relation to parenting practices is underdeveloped. A scoping review aims to identify and map existing evidence on a broader topic area, in this case the IPV, MH and HIV syndemic, without critically appraising individual studies, synthesising the evidence from different studies nor producing statements for decision making. This was conducted to identify knowledge gaps on this emerging research topic in order to help us identify what key factors and concepts are in relation to the syndemic under investigation (Munn et al., 2018). A systematic review is often used in instance where there is an established body of literature to

address specific research questions by synthesising the evidence and critically appraising the included studies (Munn et al., 2018).

Search strategy

A comprehensive approach to searching was used to find both published and unpublished studies. The search strategy was altered to account for varying syntax, limiters, and expanders in different databases. We piloted the search strategy to check for the appropriateness of the selected electronic databases and the keywords. An iterative process was undertaken during the search strategy as reviewers became more familiar with the evidence base, additional keywords and sources and other useful search terms were identified and incorporated.

The following databases and search engines were searched: PubMed, Ebscohost, Scopus, ProQuest, Science Direct, Psych INFO, CINAHL, Proline, Interscience, the Cochrane Library, UNAIDS and UNICEF. Scoping searches on Google Scholar were also conducted. Additionally, the reference lists of eligible papers were checked to identify further relevant studies. A subject librarian was consulted to assist in identifying relevant search terms. A full strategy undertaken with PubMed is detailed in supplemental table 1**.** This search strategy was used in all databases with the necessary adjustments made for truncations and Boolean operators. Following the search, all identified citations were collated and uploaded into Zotero and duplicates removed.

Eligibility criteria

We included both reviews and empirical studies. In terms of study design both qualitative and quantitative studies were considered. Due to limited resources that prevented the translation of non-English studies, only those published in English were included. Only studies written from 2001 up until September 2023 were included (searches concluded 30 September 2023), we chose 2001 because this period signifies the height of HIV/AIDS research, especially concerning prevention and vertical transmission. This timeframe also allowed for the examination of the era before and after the widespread availability of antiretroviral therapy, including studies on the comorbidities of HIV, IPV victimization, and MH. The participants in the studies had to have experienced at least two of the epidemics concurrently, it could be any combination of the epidemics (IPV-MH, HIV-MH, HIV-IPV or HIV-IPV-MH), and they had to identify as women and be caregiving for children. Although we were interested in the

HIV, IPV and MH syndemic, studies that did not measure the synergistic effect of the epidemics were also included, we included studies based on the co-occurrence of the epidemics. In terms of the outcome, we included studies that measured parenting practices as well as child maltreatment among women living with at least two of the epidemics.

Studies were excluded if they solely addressed one of the epidemics without exploring their collective impact on parenting. Similarly, research where the epidemics did not co-occur among the participants was omitted. Studies that included men or women who were not caregivers or men who were caregivers were excluded. Commentaries and non-empirical works that did not provide research findings on the interplay between these epidemics and parenting, were also excluded from the review.

Screening, data extraction and synthesis

Titles and abstracts were screened by four independent reviewers against the inclusion criteria in a review software, Covidence. Thereafter full-text screening of shortlisted studies was completed by the first author. When a discrepancy in the decision to include a study in the final review arose among the reviewers, the first author made the final decision. Specific reasons for exclusion of sources of evidence at full text that did not meet the inclusion criteria were recorded and reported in the scoping review. Data was extracted from the papers that were included after the full text review. The data extracted included the general study information (First author, year of study, the format of the study – book, article, thesis, review); study characteristics (setting, sample size, sample source, study design); sociodemographic information of participants (gender, age, socio-economic status, ethnicity) the study design; information about the study variables (measures used to collect data on IPV exposure, mental health outcomes, HIV/AID prevalence, parenting practices); key findings which matched the review question and information regarding analysis (metrics, adjustments, results). The included studies did not undergo a quality appraisal, as such an appraisal is typically not advised for scoping reviews. The purpose of a scoping review is to survey the landscape of available evidence, not to offer a synthesized and clinically pertinent response to a specific question (Peters et al., 2020).

Results

Search Results

As depicted in Figure 1 (see supplemental document A), the initial search identified 696 articles. Once duplicates were removed the search was reduced to 505 articles. After the initial abstract and title screening, 448 studies were excluded as they did not meet the inclusion criteria. The full-text review of the remaining articles was conducted by four authors, which resulted in 18 articles being included in the final analysis. Additionally, 5 more studies were found from the reference list of other studies, bringing the total to 23 articles included in the final analysis.

Characteristics of Included Studies

Information on the study characteristics is depicted in supplemental table 2. This includes study design, sample characteristics, sample size and strategy. The studies identified were mostly quantitative studies with one scoping review (Sousa et al., 2022) and one literature review (T. Rochat et al., 2017). Furthermore, majority of the studies were cross-sectional (A. B. Allen et al., 2014; Chen et al., 2022; Clark et al., 2022; Cross et al., 2018, 2018; Dubowitz et al., 2001; Fujiwara et al., 2012, 2012; Graham-Bermann et al., 2007, 2009a; Greene et al., 2018; Gurtovenko & Katz, 2020, 2020, 2020; Holmes, 2013, 2013; Howell et al., 2015; Lachman et al., 2014; Levendosky et al., 2003, 2003; Madigan et al., 2015; S. J. Mitchell et al., 2010; Murphy et al., 2010; Suardi et al., 2020; I. B. Thurston et al., 2021) with 7 being longitudinal (Chen et al., 2022; Clark et al., 2022; Dubowitz et al., 2001; Gustafsson et al., 2012; Madigan et al., 2015; Sherr et al., 2016; Stein et al., 2021) In terms of location, majority of the studies were from high income countries, with only two from Africa (A. B. Allen et al., 2014; Lachman et al., 2014; Sherr et al., 2016). Specifically, fifteen were from the USA (Chen et al., 2022; Clark et al., 2022; Cross et al., 2018; Dubowitz et al., 2001; Graham-Bermann et al., 2009a; Greene et al., 2018; Gurtovenko & Katz, 2020; Gustafsson et al., 2012; Holmes, 2013; Howell et al., 2015; Levendosky et al., 2003; S. J. Mitchell et al., 2010; Murphy et al., 2010; Stein et al., 2021) one was from Canada (Madigan et al., 2015), one was from Switzerland (Suardi et al., 2020), one from Japan (Fujiwara et al., 2012), two of the studies were from South Africa (A. B. Allen et al., 2014; Lachman et al., 2014), one study was conducted both in South Africa and Malawi (Sherr et al., 2016),one was a global scoping

review of available literature (Sousa et al., 2022) and one was a literature review (T. Rochat et al., 2017). The studies were published between 2001 and 2022. In terms of the sample characteristics, 13 of the studies included mother-child dyads (Chen et al., 2022; Clark et al., 2022; Cross et al., 2018; Dubowitz et al., 2001; Fujiwara et al., 2012; Graham-Bermann et al., 2009b; Greene et al., 2018; Gurtovenko & Katz, 2020; Holmes, 2013; Levendosky et al., 2003; Madigan et al., 2015; S. J. Mitchell et al., 2010; Suardi et al., 2020), two were caregiver-child dyads (Lachman et al., 2014; Sherr et al., 2016) which included the children's fathers, and four included mothers only (A. B. Allen et al., 2014; Howell et al., 2015; Stein et al., 2021) and the articles in the scoping review varied in sample (Sousa et al., 2022).
The sampling methods and strategies used in the studies varied. Most of the studies used convenience sampling techniques such as handing out of fliers at grocery stores, laundromats and apartment complexes (A. B. Allen et al., 2014; Cross et al., 2018; Levendosky et al., 2003; Suardi et al., 2020). Purposive sampling was also used (Fujiwara et al., 2012; Graham-Bermann et al., 2009b; Gurtovenko & Katz, 2020; Holmes, 2013; Madigan et al., 2015; S. J. Mitchell et al., 2010; Stein et al., 2021) and one study used both purposive and convenience sampling (Dubowitz et al., 2001). Furthermore, two studies used simple random sampling (Gustafsson et al., 2012; Howell et al., 2015; Sherr et al., 2016) and four used stratified random sampling (Greene et al., 2018; Lachman et al., 2014; I. B. Thurston et al., 2021). Three studies used both convenience sampling in the initial recruitment and then random assignment in order to assign participants to either treatment or comparison groups (Clark et al., 2022; Howell et al., 2015; Murphy et al., 2010) and one study used a three-stage stratified random sampling strategy (Chen et al., 2022). In terms of sample size, there was considerable variation across the studies, with the smallest study including 56 mother-child dyads (Suardi et al., 2020) and the largest one involving 2,477 caregiver-child dyads (Lachman et al., 2014).

The results of the included studies can be found in Supplemental table 3, this table includes the last name of the author, year the study was published, syndemic, and measures and measurement scales used in the studies and the results of the articles. Five studies examined the HIV-MH syndemic and its impact on parenting practices (A. B. Allen et al., 2014; Lachman et al., 2014; Madigan et al., 2015; Murphy et al., 2010; T. Rochat et al., 2017; Sherr et al., 2016) and one study investigated the IPV-MH syndemic and the moderating effect of HIV (I. B. Thurston et al., 2021). The remaining 17 studies focussed on the IPV-MH syndemic and its impact on parenting (Chen et al., 2022; Clark et al., 2022; Cross et al., 2018;

Dubowitz et al., 2001; Fujiwara et al., 2012; Graham-Bermann et al., 2009b; Greene et al., 2018; Gurtovenko & Katz, 2020; Gustafsson et al., 2012; Holmes, 2013; Howell et al., 2015; Levendosky et al., 2003; Madigan et al., 2015; S. J. Mitchell et al., 2010; Sousa et al., 2022; Stein et al., 2021; Suardi et al., 2020).

Co-occurring HIV-IPV-MH and impact on parenting

Thurston et al. (2021) found that the added burden of HIV moderates the association with depressive symptoms and parenting practices among mothers with recent IPV exposure (W. E. Thurston et al., 2016). The study compared mothers with IPV experience and HIV against those with only IPV. According to this study there was a significant association between depressive symptoms, HIV status and harsh parenting. Living with HIV in the context of IPV exposure is argued to have led to an increase in maternal stress which contributed to harsher parenting practices. Harsh parenting practices included inconsistency, poor monitoring, and corporal punishment. For mothers exposed solely to IPV, the association between depressive symptoms and harsh parenting practices was not significant. (W. E. Thurston et al., 2016)

Co-occurring IPV-MH and impact on parenting

Of the studies reviewed investigating the IPV-MH syndemic and its effect on parenting there was a strong emphasis on the mediating role of maternal MH. Nine of the studies particularly stressed the mediating role of depression between IPV and harsher parenting practices (Chen et al., 2022; Clark et al., 2022; Dubowitz et al., 2001; Fujiwara et al., 2012; Gustafsson et al., 2012; Holmes, 2013; S. J. Mitchell et al., 2010; Sousa et al., 2022; Stein et al., 2021) while two studies highlighted PTSD as a key mediator (Cross et al., 2018; Suardi et al., 2020). Additionally, three other studies found that both PTSD and depression served as mediating factors between IPV and harsh parenting practices (Graham-Bermann et al., 2009b; Howell et al., 2015; Levendosky et al., 2003). The prevailing evidence suggests a correlation between higher levels of IPV exposure and MH conditions such as depression and PTSD, which in turn influence harsh parenting behaviours. Support for this was also found in one study which looked at the efficacy of an intervention study with women who had experienced IPV, the study reported positive changes in maternal parenting practices linked to reduced levels of depression (Stein et al., 2021). Moreover, one study reported that ending a relationship with

the abusive partner was not completely effective in ending harsh parenting practices as the mental health challenges persisted beyond the end of the relationship (Fujiwara et al., 2012).

The types of harsh parenting behaviours reported in the studies looking at the IPV-MH syndemic included neglect, absence of praise (Fujiwara et al., 2012), diminished maternal warmth as well as both physical and psychological abuse (Holmes, 2013), lack of responsive parenting, reduced sensitivity to the child's needs and a decline in communication (Sousa et al., 2022; Suardi et al., 2020), the use of corporal punishment and decreased capacity for effective child supervision (Graham-Bermann et al., 2009b; Holmes, 2013), intrusive behaviour such as denying the child's autonomy in play or completing tasks (Gustafsson et al., 2012)

The studies exploring the IPV-MH syndemic found that the type of victimization experienced by the mother also had an impact on parenting outcomes, the results found that mothers who had experienced both physical and sexual abuse reported worse outcomes than mothers who had experienced one type of abuse or who did not have a history of child abuse. Women who had multiple forms of abuse in childhood and adulthood reported harsher parenting practices than mothers who reported no history of victimization or who experienced victimization only in childhood (Dubowitz et al., 2001).

Co-occurring HIV-MH and impact on parenting

Four studies found that there were higher levels of maternal depression in mothers and caregivers with HIV (A. B. Allen et al., 2014; Lachman et al., 2014; T. Rochat et al., 2017; Sherr et al., 2016) while another identified increased levels of maternal anxiety and stress in this population (Murphy et al., 2010). These MH disorders when combined with an HIV diagnosis, were correlated with harsh parenting practices such as harsh physical discipline (A. B. Allen et al., 2014; Lachman et al., 2014; Murphy et al., 2010; T. Rochat et al., 2017; Sherr et al., 2016). Some studies explored the mechanisms through which the HIV-MH syndemic negatively affects parenting. For instance, Allen et al. (2014) found that mothers using negative religious coping strategies exhibited parent-child dysfunction, characterized by poor communication, lack of emotional attachment, and unresolved conflicts (A. B. Allen et al., 2014). This type of coping involves interpreting difficult situations as a form of divine punishment or as one's own failings in religious terms, the later can contribute to increased

stress and negative psychological outcomes. Negative religious coping strategies were measured by Allen et al. (2014) using the Religious Coping Scale, which included items that reflected religious attitudes and practices, for instance a negative religious coping strategy from the scale would be, “I have been asking myself what I have done to God to punish me like this” (A. B. Allen et al., 2014). Rochat et al. (2017) noted that, particularly two years post-partum, mothers with the HIV-MH syndemic commonly used avoidant coping strategies such as distraction, emotional venting, and substance use (T. Rochat et al., 2017). These coping strategies were linked to parenting stress and diminished parental attention and responsiveness.

According Rochat et al. (2017) an additional factor exacerbating harsh parenting practices among women with the HIV-MH was HIV-related stigma. Mothers preoccupied with stigma and concerns about life expectancy experienced increased stress and depressive symptoms, which further undermined their parenting abilities (T. Rochat et al., 2017). According to Rochat et al. (2017) these cognitive processes such as ruminations and preoccupations related to stigma and life expectancy acted as mediators between an HIV diagnosis and harsh parenting (T. Rochat et al., 2017). In terms of observable parenting practices, mothers with the HIV-MH syndemic demonstrated poorer parent-child communication, less consistent discipline, and lower levels of child engagement in family routines (Murphy et al., 2010).

Discussion

The findings of the current review highlight the complex relationships existing between the HIV, IPV and MH epidemics and their collective impact on parenting practices. The review contributes significantly to the existing literature by identifying the limited literature available on the HIV-IPV-MH syndemic and its impact on parenting thereby directing focus to areas necessitating further research. Nonetheless, the review highlights important findings in relation to the syndemic impact on parenting. In relation to the HIV-IPV-MH syndemic, the findings revealed that amongst women experiencing IPV-MH, having HIV worsened the impact on parenting practices, where these women often engaged in harsher parenting practices. Furthermore, depression and PTSD were the most common MH disorders among

mothers and caregivers living with the IPV-MH syndemic, MH was a mediating factor between IPV and harsher parenting practices. Research on the HIV-MH syndemic found that there were higher levels of maternal depression and anxiety among mothers with HIV, which through maladaptive coping strategies and internalized stigma often led to harsher parenting practices.

HIV-IPV-MH and parenting practices

The findings in the current review align with previous research which found that HIV-IPV-MH are often co-occurring. In a systematic review, it was found that MH disorders are among the most common comorbidities among people living with HIV globally, with depression as the most common disorder (Brandt, 2009). This aligns with the research conducted by Thurston et al. (2021) as reported in our scoping review (I. B. Thurston et al., 2021). Furthermore, the broader literature suggests a significant impact of caregiver wellbeing and cumulative parental stressors, such as trauma, poor MH and health conditions like HIV, on parenting practices (Belsky, 1984). The latter can help to explain how HIV acts as a moderating factor in the relationship between IPV, poor MH, and parenting outcomes. Notably as evidenced by the current review there remains a notable dearth of research specifically examining the combined impact of these three epidemics on parenting. This gap is particularly critical to address, given the widespread prevalence of this triple syndemic among women, who often serve as primary caregivers of children. The implications of how these interrelated epidemics affect both women and their children are profound and necessitate further investigation.

IPV-MH and parenting practices

In terms of the IPV-MH syndemic the studies in the review highlight that maternal MH significantly mediates the impact of IPV on parenting practices. This finding highlights the need for interventions that address the MH of women affected by IPV, as their mental well-being is critical in determining parenting practices.

Depression and PTSD were reported as the prominent MH disorders mediating the relationship between IPV and harsh parenting practices. This is consistent with extensive research demonstrating a positive association between IPV and mental disorders (Castellví et al., 2017; Chuang et al., 2012; Coker et al., 2002; Desmarais et al., 2014; K. M. Devries et al.,

2013a; Khalifeh et al., 2015; Lacey et al., 2015; Oram et al., 2022; Ruiz-Pérez et al., 2017). A systematic review by Lagdon et al. (2014) further revealed that IPV victims face greater adverse MH effects, especially depression, PTSD, and anxiety, compared to those without such experiences (Lagdon et al., 2014).

The review also revealed that mothers and caregivers subjected to multiple victimizations in adulthood and childhood tend to adopt harsher parenting practices. This correlation might be attributed to the association of re-victimization with various psychological conditions, including mood and affective disorders, anxiety, PTSD, dissociation, and substance use disorder (Papalia et al., 2021; Scoglio et al., 2021; Sharratt et al., 2023; Walsh et al., 2021). Tailored, trauma-informed interventions that address unresolved and/or current trauma and promote adaptive coping strategies are necessary for this group. There is also a need to develop spaces that are preventative of the occurrence of trauma such as safer environments and spaces for women as well as a more responsive justice system.

HIV-MH and parenting practices

In terms of the co-occurrence of HIV-MH, the scoping review reveals a notable prevalence of MH challenges among PLWH, aligning with existing literature. Studies have consistently indicated that the mental and physical health of people living with HIV, especially in West, East, Southern and Central and Africa (WESCA) which has the highest HIV burden globally, is often compromised (James et al., 2018; Naghavi et al., 2017). Compared to the general population, people living with HIV are more susceptible to MH disorders such as depression, anxiety, suicidality, and substance use disorder (Brandt, 2009; Catalan et al., 2011; Chibanda et al., 2016; Clucas et al., 2011; E. Hughes et al., 2016; Lachman et al., 2014). This is corroborated by our review, which identified significantly higher rates of depression and anxiety in mothers living with HIV (A. B. Allen et al., 2014; Lachman et al., 2014; Murphy et al., 2010; T. Rochat et al., 2017; Sherr et al., 2016).

Furthermore, our review highlights that mothers and caregivers with living with HIV-MH often engage in harsher parenting practices. Key factors contributing to this include maladaptive coping strategies and preoccupation with HIV-related stigma. The stigma associated with HIV, both internalized and externally experienced, has been linked to depression (Serafini, 2015), which, as demonstrated in the review, adversely affects parenting

practices. For instance, Bhadra et al. (2020) found that stigma anticipation led participants to avoid social interactions, impacting their children's involvement in activities (Bhadra et al., 2020).

In terms of coping strategies, qualitative research conducted by Silima et al (2024) suggests that women living with HIV-MH often resort to family support, religious faith, and self-reliance to overcome these challenges (Silima et al., 2024a). These women reportedly use religion positively to draw strength and acceptance, in contrast to the negative religious coping strategies identified in our review (A. B. Allen et al., 2014). This positive use of religion and spirituality as a sustenance strategy amidst HIV challenges has been echoed in other studies (Bukhori et al., 2022).

While we found only 4 studies in the review which directly addressed the impact of the HIV-MH syndemic on parenting, this limited number reflects the existing research gap and highlights the need for further research. However, the evidence points to the central role of poor MH across various syndemic combinations, highlighting the importance of psychosocial support as a critical component in any intervention aimed at this demographic.

It must be recognized that the parenting practices observed in the studies of women living with the interrelated epidemics of IPV, MH and HIV often result directly from the trauma they have experienced in their own lives. This trauma can significantly impact their parenting practices and may have roots extending back to their own childhoods. Qualitative research by Silima et al (2024), on women living with these interrelated epidemics found that the majority of women had experienced trauma in their childhood, including instances of childhood sexual abuse (CSA) (Silima et al., 2024a; Taccini et al., 2024). A review by Lomanowska et al (2017) revealed that early adversities in childhood often affect parenting in adulthood (Lomanowska et al., 2017). Specifically research by Newcomb and Locke showed that chid maltreatment is associated with subsequent harsh parenting such as low warmth, aggression, and neglect (Lomanowska et al., 2017; Newcomb & Locke, 2001). Additionally, the cumulative impact of ongoing violence, stigma, and economic hardship exacerbates these epidemics, making it difficult for these women to provide stable and nurturing environments for their children (Sherr et al., 2016; Suardi et al., 2020). Despite the significant challenges faced by women living with the epidemics, these women demonstrate remarkable resilience

and agency in addressing the challenges in their lives and their children's lives. Women actively engage in community-based initiatives, peer support networks, and advocacy programs to combat the effects of the syndemic. For instance, interventions such as the Stepping Stones with Children training programme in Tanzania have shown that women and their children can build resilience, improve their relationships, and enhance their well-being through structured, supportive activities (Holden et al., 2019).

Understanding HIV-IPV-MH from a syndemic lens

None of the studies identified in the scoping review specifically examined the syndemic impact of the epidemics or measured the interactions between them. The studies reported on the moderating or mediating relationships. Evidently this suggests a gap in our understanding of how the combined presence of these intersecting epidemics exacerbates the challenges experienced by mothers and caregivers, leading to worse outcomes, than would be the case when the epidemics appear in isolation.

Limitations

Although this scoping review provides valuable insights, it must be noted that there were some limitations. Firstly, while the review used multiple large electronic databases to search for relevant articles for inclusion, we acknowledge that other relevant papers, particularly grey literature may have been missed during the search process. According to Dunaway et al (2022), grey literature often contains rich, diverse perspectives and insights that are sometimes absent in traditional academic publications (Dunaway et al., 2022). The exclusion of these materials may have resulted in gaps in the evidence base and may have overlooked the voices and experiences of those most affected by the issues under study. Moreover, we only included studies written in English, which may have excluded some relevant papers. Furthermore, there was only one study that explored the HIV-IPV-MH syndemic and the impact on parenting, thus our conclusions are based on this single study, which may not fully represent the complexities of the syndemic impact on parenting practices. The identified studies were also mostly from high-income countries, with limited research from regions with a high burden of the epidemics such as WESCA, thus limiting the generalizability of the findings to this particular context. The absence of qualitative studies is a major limitation, as

qualitative research is able to provide insights and an understanding of the complexities of the syndemic that are not easily captured through quantitative studies.

Implications and future research:

The review highlights the prevalence of MH disorders among women living with HIV and IPV experience. This indicates the importance of IPV and MH centred interventions, particularly those addressing depression, anxiety and PTSD. Furthermore, there is a need for psychological screening among those testing positive for HIV and for women who seek health services that show signs of IPV. Moreover, as recommended by the WHO (2017), interventions for women living with these interrelated epidemics should integrate care for them into existing health services (World Health Organization, 2017b). This can be achieved by establishing centres where women can receive medical care and psychological support in one location; incorporating routine screening for IPV and poor MH into regular health visits especially in HIV care settings and finally ensuring that services for mental health, sexual and reproductive health, and HIV care are both physically and operationally integrated. Additionally it would be equally important to create safe spaces within healthcare facilities where women can be free to disclose violence and receive care without fear of judgment (World Health Organization, 2017a).

Furthermore, there is a need for interventions that are trauma aware (Decker et al., 2016; Dhairyawan et al., 2013). Implementing trauma aware practices can create safe opportunities for women to seek help. A trauma-aware model ensures that the organizational culture is both safe for staff and clients, regardless of the disclosure of violence (Gormley et al., 2022). Key components include recognizing the widespread impact of trauma, understanding the potential recovery paths, and training staff to support survivors effectively. It is also essential to ensure the physical and emotional safety of service users by creating a welcoming and respectful environment and allowing participants in the intervention to control their level of engagement and content covered (Kahan et al., 2020).

Parenting interventions need to look at addressing the syndemic in tandem rather than in isolation and tailoring programmes specifically for parents living with the syndemic. An example of such interventions is the Equimundo parenting program which both violence

against women and violence against children simultaneously (Equimundo & Sonke Gender Justice., 2018).

Additionally, it must be recognised that the work that is already being conducted by women's right's organisations on these challenges is very under-resource (International Development Committee., 2024; The Equality Institute & Accelerator for GBV Prevention, 2023; UN Women, 2021). Women living with the epidemics are actively engaged in overcoming the challenges that come with living with these issues, their efforts often including grassroots advocacy, peer support programs and community-based interventions which are essential for mitigating the adverse effects of the syndemic(Htun & Weldon, 2012) . Moreover, it is critical to ensure that the efforts of these women are adequately resourced and supported through sufficient funding and resources for the initiatives (Connolly, 2017). It is also essential to support and expand existing community-based programs that address these epidemics through sustained funding and support as these programs play a critical role in immediate and long-term support for the women (Kohrt et al., 2018).

The findings of this review have highlighted a significant gap in research regarding the combined impact of the IPV-MH-HIV, IPV-MH and HIV-MH syndemics on parenting practices. The syndemic disproportionately affects women, who are often the primary caregivers, and as a result also detrimentally influences parenting. There is a critical need for further research exploring the synergistic interactions among these epidemics. A deeper understanding of these interactions is vital for designing efficient, holistic interventions and programs that are able to effectively address the consequences of these complex challenges.

Furthermore, the majority of existing studies originate from the USA, with limited research conducted in WESCA. Studies within this context are critical for the development of interventions that can be tailored to the unique challenges and resource limitations of the region, potentially allowing for more impactful solutions that either address multiple issues concurrently or prioritize the most pressing concerns.

We recommend more qualitative studies be conducted on the HIV-IPV-MH syndemic. Qualitative research is indispensable for capturing the lived experiences of affected women, offering rich, nuanced insights that quantitative data alone cannot provide. For instance,

qualitative work by Silima et al (2024) is a good example of how the syndemic affects the parenting experiences and practices of mothers and caregivers living with these epidemics (Silima et al., 2024a). Such research is invaluable in identifying key factors associated with the syndemic, thereby informing the development of more effective, targeted interventions.

The review also revealed that there is a need for more longitudinal research, to assist in a better understanding of the HIV-IPV-MH syndemic over time, a reliance on cross-sectional studies limits us from inferring causality, as well as understanding whether developed interventions are actually working.

Additionally we also recommend, future reviews on the subject matter to include grey literature which would include articles, films, interviews and other materials that provide diverse perspectives and critical insights, this would provide a more holistic view and ensure that the diverse experiences and insights of the women living with the epidemics are adequately represented (Dunaway et al., 2022). Furthermore, research that ensures the meaningful involvement of women living with these epidemics is crucial. Their participation in the design, implementation, and evaluation of studies will ensure that the research addresses their real needs and concerns (Dunaway et al., 2022).

Finally, it would be valuable to have more research that looks at the synergistic effects of the syndemic, as well as the multiplicative effects. A syndemic understanding is critical in developing tailored interventions that address the syndemic in tandem.
A syndemic framework for interventions has important implications for public health. Current public health practices often compartmentalize diseases, hindering the implementation of syndemic-based interventions (Douglas-Vail, 2016). Understanding the drivers of disease interaction and the contexts in which they occur allows for a strategic and innovative interventions that address clusters of the social and health conditions rather than individual disease (Singer & Clair, 2003) Clinicians and policy makers can develop holistic approaches to care that tackle multiple interconnected issues simultaneously. This perspective enables policy makers to use the insights from syndemic theory to create comprehensive health programs that integrate social determinants of health (Tsai & Venkataramani, 2016). Applying a syndemic lens in clinical setting requires addressing both the medical conditions and the non-medical determinants of health such as structural violence, stigma and socio-economic

factors. Interventions need to be context specific, addressing the unique interaction and driver in each setting (Mendenhall, Kohrt, et al., 2022). Mendenhall et al (2022) emphasize the need for modelling syndemic care in clinical contexts, which includes a comprehensive approach that spanning multiple levels of research and clinical practice (Mendenhall, Kohrt, et al., 2022). By integrating research and clinical practice across these domains, healthcare systems can develop more effective, context specific interventions that improve health outcomes for populations experiencing syndemic conditions (Mendenhall, Kohrt, et al., 2022).

In response to the need for further research in this area especially in low-and-middle income countries, the research team has already conducted additional studies, including qualitative and quantitative analyses studies (Silima et al., 2024a). These efforts aim to fill the gaps in the scoping review and contribute to a more comprehensive understanding of the IPV, MH and HIV syndemic.

Conclusion

The current review reveals that living with the different syndemics (HIV-IPV-MH; IPV-MH; HIV-MH) adversely affects parenting resulting in harsher and inconsistent parenting practices. Parenting interventions that seek to address the syndemic impact are critical, considering the public health importance of harsh parenting. Furthermore, more qualitative and longitudinal research on the syndemic would allow for more evidence-based interventions seeking to address the syndemic impact on parenting.

Supplementary Documents

Table 1

Scoping Review Search Strategy

1	"Mental Disorders"[MeSH Terms] OR "Mental illness"[Text Word] OR "Anxiety"[Text Word] OR "Depression"[Text Word] OR "Suicidality"[Text Word] OR "Post-traumatic disorder"[Text Word] OR "Ptsd"[Text Word] OR "Complex trauma"[Text Word] AND ((2001:2022[pdat]) AND (english[Filter]))
2	("HIV"[MeSH Terms] OR "Human immunodeficiency virus"[Text Word] OR "AIDS virus"[Text Word] OR "AIDS"[Text Word] OR "Acquired Immunodeficiency syndrome"[Text Word]) AND ((2001:2022[pdat]) AND (english[Filter]))

3	("Intimate Partner Violence"[MeSH Terms] OR "Spousal abuse"[Text Word] OR "Spouse abuse"[Text Word] OR "Family violence"[Text Word] OR "Abused mothers"[Text Word] OR "Domestic violence"[Text Word] OR "Domestic abuse"[Text Word] OR "Dating violence"[Text Word] OR "Partner abuse"[Text Word] OR "Partner violence"[Text Word] OR "Battered woman"[Text Word] OR "Family violence"[Text Word]) AND ((2001:2022[pdat]) AND (english[Filter]))
4	("Parenting"[MeSH Terms] OR "Child rearing"[Text Word] OR "Caregiving"[Text Word] OR "Mothering"[Text Word] OR "Maternal parenting"[Text Word] OR "Maternal behavior"[Text Word] OR "Child abuse"[Text Word] OR "Child neglect"[Text Word] OR "Child maltreatment"[Text Word] OR "Corporal punishment"[Text Word]) AND ((2001:2022[pdat]) AND (english[Filter]))
5	("Women"[MeSH Terms] OR "Mother"[Text Word] OR "Caregiver"[Text Word] OR "Women"[Text Word] OR "Female"[Text Word] OR "Maternal"[Text Word]) AND ((2001:2022[pdat]) AND (english[Filter]))
6	((("Mental Disorders"[MeSH Terms] OR "Mental illness"[Text Word] OR "Anxiety"[Text Word] OR "Depression"[Text Word] OR "Suicidality"[Text Word] OR "Post-traumatic disorder"[Text Word] OR "Ptsd"[Text Word] OR "Complex trauma"[Text Word] AND ((2001:2022[pdat]) AND (english[Filter]))) AND (("HIV"[MeSH Terms] OR "Human immunodeficiency virus"[Text Word] OR "AIDS virus"[Text Word] OR "AIDS"[Text Word] OR "Acquired Immunodeficiency syndrome"[Text Word]) AND ((2001:2022[pdat]) AND (english[Filter])))) AND (("Parenting"[MeSH Terms] OR "Child rearing"[Text Word] OR "Caregiving"[Text Word] OR "Mothering"[Text Word] OR "Maternal parenting"[Text Word] OR "Maternal behavior"[Text Word] OR "Child abuse"[Text Word] OR "Child neglect"[Text Word] OR "Child maltreatment"[Text Word] OR "Corporal punishment"[Text Word]) AND ((2001:2022[pdat]) AND (english[Filter])))) AND (("Women"[MeSH Terms] OR "Mother"[Text Word] OR "Caregiver"[Text Word] OR "Women"[Text Word] OR "Female"[Text Word] OR "Maternal"[Text Word]) AND ((2001:2022[pdat]) AND (english[Filter])))
7	((("Mental Disorders"[MeSH Terms] OR "Mental illness"[Text Word] OR "Anxiety"[Text Word] OR "Depression"[Text Word] OR "Suicidality"[Text Word] OR "Post-traumatic

	disorder"[Text Word] OR "Ptsd"[Text Word] OR "Complex trauma"[Text Word] AND ((2001:2022[pdat]) AND (english[Filter]))) AND (("Intimate Partner Violence"[MeSH Terms] OR "Spousal abuse"[Text Word] OR "Spouse abuse"[Text Word] OR "Family violence"[Text Word] OR "Abused mothers"[Text Word] OR "Domestic violence"[Text Word] OR "Domestic abuse"[Text Word] OR "Dating violence"[Text Word] OR "Partner abuse"[Text Word] OR "Partner violence"[Text Word] OR "Battered woman"[Text Word] OR "Family violence"[Text Word]) AND ((2001:2022[pdat]) AND (english[Filter])))) AND (("Parenting"[MeSH Terms] OR "Child rearing"[Text Word] OR "Caregiving"[Text Word] OR "Mothering"[Text Word] OR "Maternal parenting"[Text Word] OR "Maternal behavior"[Text Word] OR "Child abuse"[Text Word] OR "Child neglect"[Text Word] OR "Child maltreatment"[Text Word] OR "Corporal punishment"[Text Word]) AND ((2001:2022[pdat]) AND (english[Filter])))) AND (("Women"[MeSH Terms] OR "Mother"[Text Word] OR "Caregiver"[Text Word] OR "Women"[Text Word] OR "Female"[Text Word] OR "Maternal"[Text Word]) AND ((2001:2022[pdat]) AND (english[Filter]))))
8	((((("HIV"[MeSH Terms] OR "Human immunodeficiency virus"[Text Word] OR "AIDS virus"[Text Word] OR "AIDS"[Text Word] OR "Acquired Immunodeficiency syndrome"[Text Word]) AND ((2001:2022[pdat]) AND (english[Filter]))) AND (("Intimate Partner Violence"[MeSH Terms] OR "Spousal abuse"[Text Word] OR "Spouse abuse"[Text Word] OR "Family violence"[Text Word] OR "Abused mothers"[Text Word] OR "Domestic violence"[Text Word] OR "Domestic abuse"[Text Word] OR "Dating violence"[Text Word] OR "Partner abuse"[Text Word] OR "Partner violence"[Text Word] OR "Battered woman"[Text Word] OR "Family violence"[Text Word]) AND ((2001:2022[pdat]) AND (english[Filter])))) AND (("Parenting"[MeSH Terms] OR "Child rearing"[Text Word] OR "Caregiving"[Text Word] OR "Mothering"[Text Word] OR "Maternal parenting"[Text Word] OR "Maternal behavior"[Text Word] OR "Child abuse"[Text Word] OR "Child neglect"[Text Word] OR "Child maltreatment"[Text Word] OR "Corporal punishment"[Text Word]) AND ((2001:2022[pdat]) AND (english[Filter])))) AND (("Women"[MeSH Terms] OR "Mother"[Text Word] OR "Caregiver"[Text Word] OR "Women"[Text Word] OR "Female"[Text Word] OR "Maternal"[Text Word]) AND ((2001:2022[pdat]) AND (english[Filter]))))
9	((((("Mental Disorders"[MeSH Terms] OR "Mental illness"[Text Word] OR "Anxiety"[Text Word] OR "Depression"[Text Word] OR "Suicidality"[Text Word] OR "Post-traumatic disorder"[Text Word] OR "Ptsd"[Text Word] OR "Complex trauma"[Text

	Word] AND ((2001:2022[pdat]) AND (english[Filter]))) AND (("HIV"[MeSH Terms] OR "Human immunodeficiency virus"[Text Word] OR "AIDS virus"[Text Word] OR "AIDS"[Text Word] OR "Acquired Immunodeficiency syndrome"[Text Word]) AND ((2001:2022[pdat]) AND (english[Filter])))) AND (("Intimate Partner Violence"[MeSH Terms] OR "Spousal abuse"[Text Word] OR "Spouse abuse"[Text Word] OR "Family violence"[Text Word] OR "Abused mothers"[Text Word] OR "Domestic violence"[Text Word] OR "Domestic abuse"[Text Word] OR "Dating violence"[Text Word] OR "Partner abuse"[Text Word] OR "Partner violence"[Text Word] OR "Battered woman"[Text Word] OR "Family violence"[Text Word]) AND ((2001:2022[pdat]) AND (english[Filter])))) AND (("Parenting"[MeSH Terms] OR "Child rearing"[Text Word] OR "Caregiving"[Text Word] OR "Mothering"[Text Word] OR "Maternal parenting"[Text Word] OR "Maternal behavior"[Text Word] OR "Child abuse"[Text Word] OR "Child neglect"[Text Word] OR "Child maltreatment"[Text Word] OR "Corporal punishment"[Text Word]) AND ((2001:2022[pdat]) AND (english[Filter])))) AND (("Women"[MeSH Terms] OR "Mother"[Text Word] OR "Caregiver"[Text Word] OR "Women"[Text Word] OR "Female"[Text Word] OR "Maternal"[Text Word]) AND ((2001:2022[pdat]) AND (english[Filter])))
10	((("HIV"[MeSH Terms] OR "Human immunodeficiency virus"[Text Word] OR "AIDS virus"[Text Word] OR "AIDS"[Text Word] OR "Acquired Immunodeficiency syndrome"[Text Word]) AND ((2001:2022[pdat]) AND (english[Filter]))) AND (("Parenting"[MeSH Terms] OR "Child rearing"[Text Word] OR "Caregiving"[Text Word] OR "Mothering"[Text Word] OR "Maternal parenting"[Text Word] OR "Maternal behavior"[Text Word] OR "Child abuse"[Text Word] OR "Child neglect"[Text Word] OR "Child maltreatment"[Text Word] OR "Corporal punishment"[Text Word]) AND ((2001:2022[pdat]) AND (english[Filter])))) AND (("Women"[MeSH Terms] OR "Mother"[Text Word] OR "Caregiver"[Text Word] OR "Women"[Text Word] OR "Female"[Text Word] OR "Maternal"[Text Word]) AND ((2001:2022[pdat]) AND (english[Filter])))
11	((("Intimate Partner Violence"[MeSH Terms] OR "Spousal abuse"[Text Word] OR "Spouse abuse"[Text Word] OR "Family violence"[Text Word] OR "Abused mothers"[Text Word] OR "Domestic violence"[Text Word] OR "Domestic abuse"[Text Word] OR "Dating violence"[Text Word] OR "Partner abuse"[Text Word] OR "Partner violence"[Text Word] OR "Battered woman"[Text Word] OR "Family violence"[Text Word]) AND ((2001:2022[pdat]) AND (english[Filter]))) AND (("Parenting"[MeSH Terms] OR "Child rearing"[Text Word] OR "Caregiving"[Text Word] OR

	"Mothering"[Text Word] OR "Maternal parenting"[Text Word] OR "Maternal behavior"[Text Word] OR "Child abuse"[Text Word] OR "Child neglect"[Text Word] OR "Child maltreatment"[Text Word] OR "Corporal punishment"[Text Word]) AND ((2001:2022[pdat]) AND (english[Filter]))))) AND (("Women"[MeSH Terms] OR "Mother"[Text Word] OR "Caregiver"[Text Word] OR "Women"[Text Word] OR "Female"[Text Word] OR "Maternal"[Text Word]) AND ((2001:2022[pdat]) AND (english[Filter])))

Note: MeSH = Medical Subject Headings; pdat = publication date; [Filter] = specific database filter for language.

Table 2

Description of Included Studies

First Author and Year	Location	Study Design	Sample Characteristics	Sample Size and sampling strategy
Sherr 2016	South Africa and Malawi	Quantitative Longitudinal	**Caregivers Age:** Ranged from 17 to 87 Caregiver Education: 9.4% no education, 35,6% some primary education, 17.5% primary education completed, 13.8% Matric completed, 2.5% some tertiary education completed, 0% tertiary education completed. **Caregivers Gender**: 95% (n = 768) were female. **Child age:** between 4-13 **Health Status:** Three distinct groups of caregivers were identified based on their HIV status and the HIV status within their households: 19.8% of caregivers were HIV positive and 14.2% were HIV negative	The study started with a baseline of 952 caregivers along with their children. After applying specific inclusion criteria, which required fully completed child data at both baseline and follow-up, the sample was narrowed down to 808 child/carer dyads for this analysis. Sampling Method: Random Sampling The participants were part of the Child Community Care study and were recruited from community-based organizations (CBOs) in South Africa and Malawi. A list of 588 funded CBOs was created. These were then stratified by funder and geographical region.

				Random sampling generated 28 CBOs for inclusion in the study, 24 from South Africa and 4 from Malawi, proportional to each country's population size.
Thurston., 2021	United States	Quantitative Cross-sectional	Mothers 81% living with HIV and IPV **Age:** Mean age 36,66 **Educational Attainment (years):** mean 11.9 **IPV:** Had experienced IPV in the 6 months preceding study participation **Ethnicity:** Women of colour, 86.7% identified as black, 10% as multi racial, 3.3% as Hispanic/Latina **Relationship status:** 41.7% single or not dating anyone exclusively, 26.6% dating or having a partner but living separately.	• 30 Living with HIV and IPV (Cases and 30 experiencing only IPV (Controls) • Case Control Matching design • Sampling Method: Stratified random sampling.
Levendosky., 2003	United States	Quantitative Cross-sectional	Mother-child dyads **Mother's age:** Mean age of mothers- 27,9 years **Ethnicity:**	103Mother-child dyads 57% were sourced from local Headstart preschools, 17% from the Family Independence Agency (Department of Social Services), 7%

			42% African American 43% Were Caucasian 10% Latino 5% Biracial 1% Asian American 20% had no high school graduation, 23% had high school diploma and 57% had some collect or technical school experience or degree. **IPV Experience:** 43% reported being in a physically abusive relationship in the past year, 47% reported past abuse during their child's lifetime, with a 70% lifetime prevalence rate. verbal aggression was included (e.g., threats of violence), the lifetime prevalence rate increased to 78%.	from a local domestic violence shelter, and 18% from the general community. **Convenience Sampling:** Handed out fliers, at grocery stores, laundromats, apartment complexes and retail establishments.
Suardi., 2020	Switzerland	Quantitative Cross-sectional	Mother-child Dyads 59% (n=33/56) were married. 90% (n=50/56) of the mothers were in an intimate relationship with the father of the child or another partner at the time of participation.	56 mothers and children (aged 12-42 months) **Convenience sampling**: Participants recruited via flyers that were posted at domestic violence agencies and shelters as well as the Geneva

			53% (n=31) of the mothers were employed at the time they participated in the study. Nearly half (48%, n=27) of the parent couples were bi-nationals i.e. of more than one nationality.	University Hospitals and Faculties of medicine and psychology.
Madigan., 2015	Toronto, Canada	Quantitative	Mother-child dyads	490 Mother-child dyads

		Longitudinal	**Child's age**: Children were, on average, 2 months old at Time 1, 18 months at Time 2, and 36 months at Time 3.	**Purposive Sampling:** The study is based on families in Toronto and Hamilton who were recruited through a program called "Healthy Babies Healthy Children," run by Public Health. This program contacts the parents of all newborn babies within several days of birth. The inclusion criteria for families to be a part of the intensive data-collection sample were as follows: English-speaking mother The newborn weighed at least 1,500 grams One or more children less than 4 years old in the home Agreement to the collection of observational and biological data.
Holmes., 2013	United States	Quantitative	Mother-child dyads	1,161 mother-child dyads The study sample of 1,161 children was drawn

		Cross-sectional	**Child's age:** Children were between 3 and 8 years. **Mother's age:** The mothers' mean age was 29.69 years (SD = 6.72), with an age range of 15-67 years **Ethnicity:** 54% identified as White, 23% as African American, 16% as Hispanic, and 8% as other/multiracial. **Education:** 47.67% of the mothers had graduated high school, 22.56% had some post-high school education, and 29.77% had not graduated from high school. A little over half, 53.83%, reported living with a partner.	from the first wave of the NSCAW dataset, which included a total of 5,501 children investigated by Child Protective Services (CPS) for abuse or neglect between October 1999 and December 2000.
Fujiwara., 2012	Japan	Quantitative Cross-sectional	Mother-child dyads **Mother's age**: The mothers mean age was 35.8 and age range 19-56 **Relationship status:** 13.3% were married, 12.9% were living together but not married and 73.8% were divorced. **Children's gender:** 50.9% were boys 49.1% were girls	83 Mother-child dyads A total of 421 mothers initially agreed to participate. Final sample consisted of 340 mothers who completed the survey Purposive Sampling

Graham-Bermann., 2009	United States	Quantitative Cross-sectional	Mother-child dyads **Mother's age:** Mean age 33.10 **IPV experience:** experienced IPV within the past year Education: 16% having some high school education, 67% being high school graduates, 13% holding a college degree, and 4% having a graduate degree. **Relationship status**: 23% single, 8% living with a partner, 20% married, 30% separated, 17% divorced, and 2% remarried, 17% were still living with IPV perpetrator.	The sample size comprised 219 Mother-child dyads **Purposive Sampling:** Participants were recruited through various community settings in urban and rural communities in southeastern Michigan. Recruitment methods included social service agencies, flyers, and newspaper advertisements. The women had to have been exposed to IPV in the last year

Howell., 2015	United States	Quantitative Cross-sectional	**Mother's age:** Age range was from 21 to 54 years, with an average age of 31.8 years **Ethnicity:** 48% European American, 37% African American, 8% Biracial, 6% Hispanic American, and 1% Asian American. **Education:** A majority (59%) have completed at least some higher education 52% of the women had either previously lived in, or were currently living in, a shelter for abused women.	120 Mothers Random Assignment: Randomized control trial Participants were part of a larger, randomized control trial Recruited from local shelters for abused women, hospitals, mental health agencies, legal aid services and community centers using flyers, brochures and presentations. Interested women contacted the study via a toll-free number and underwent a brief pre-screening over the phone. Eligibility criteria included being a custodial mother who experienced IPV within the last 2 years and having a child aged 4 to 6. Participants were allocated to either the treatment or comparison group using a sequential block assignment approach.

Cross., 2018	United States	Quantitative Cross-sectional	Mother-child dyads **Ethnicity:** African American **Education:** 25% less than 12th grade, 28% high school graduate, 52% had some college or more. **Parental status:** 91% were the biological parent and legal guardian. 8% were other biological relation and legal guardian.	112 mother-child dyads, including 50 girls and 62 boys **Convenience Sampling**: Mothers were recruited from various departments of a large, urban public hospital and an adjacent paediatric hospital. The recruitment took place during normal clinic hours. Members of the research team approached potential participants to ask if they would be interested in a study on trauma exposure.
Stein., 2021	United States	Quantitative Longitudinal	**Mother's age:** Between 21 to 54 years, mean age 35.43 **Exposure to IPV:** All had been exposed to	Sample Size: 72 mothers Purposive Sampling

			Intimate Partner Violence (IPV) within the last two years. **Employment Status**: 47% were currently employed. **Relationship Status:** Nearly 82% were single at the time of the first interview. **Current Living Conditions:** Only 11.24% were living with a violent partner. **Education:** 70% some high school or less **Ethnicity:** 85% identified Mexico as their country of origin; the rest were born in the United States or Central America	Eligibility: Women were eligible if they had been exposed to IPV within the past two years and had a child aged five to seven. Participants were recruited through referrals from agencies that provide services to IPV-exposed women. Recruitment postings were made in local businesses, school campuses, and social service agencies across four communities in Southeast Michigan, Northern Ohio, and Southern Texas.
Mitchell., 2010	United States	Quantitative Cross-sectional	Mother-child dyads **Mother's age:** Mean age 22 years. **Average age at their child's birth:** 17.81 years. **Children's ages:** 3-5 years old **Ethnicity:** African American **Education:** 69% had at least a high school	Participants were recruited from 42 community-based programs serving a general population of mothers and children Sample consisted of 230 young African American mothers

			education. **Employment:** 43% were employed. **Living conditions: 61**% lived with their own mother or grandmother. **IPV exposure**: 62% slapped or hit, 27% sexually assaulted, 6% shot at, **Relationship status:** 76% were no longer romantically involved with their child's biological father	Purposive sampling
Gurtovenko., 2020	United States	Quantitative Cross-sectional	Mother-child dyads **Mother's age:** 28-56 years, mean age 39.06 **Child's age:** 6-12 years, mean age 9.33 **IPV exposure:** previous experience of IPV. **Ethnicity:** 49% White/Caucasian, 14.3% Black/African American, 6.1% Asian American, 4.1.% Native American, 4.1% Native Hawaiian/Pacific Islander, 22,4 Hispanic 22.4% Other race/ethnicity.	75 Mothers recruited as a part of a larger intervention study for families who experienced IPV **Purposive Sampling:** Were recruited from local domestic violence agencies in the Pacific Northwest region of the USA

			Education: 11% did not graduate from high school, 14% graduated high school, 47% attended some college, 19% graduated from college and 9% achieved some graduate stud. **IPV exposure:** On average mothers reported experiencing about 7 years of abuse, with average time having left abusive relationship being about 2 years. Time since end of relationship ranged from 4-144 months	
Sousa., 2022	Global	Systematic Scoping Review	Studies of women who had experienced IPV and were mothers	Sampling method: Initial search conducted in 2014 Fall and Summer and Fall of 2015 to ascertain feasibility. Final searches in 2016 and 2019 were confined to eight databases in ProQuest. Total of 136 studies included in the review
Greene., 2018	United States	Quantitative Cross-sectional	Mother-child dyads **Mother's age:** age at the birth of the target child was 26.1 years,	Sample Size: 308 mothers and their children Sratified random sampling to recruit participants from an existing study called the

			Child's age: Mean age was 55.4 months. **IPV experience:** 81% reported psychological IPV in the past year, mean severity score of 18.4%, among mothers reporting any psychological IPV. **Mental Health**: Mean maternal PTSD symptom score was 26.5% **Ethnicity:** 47% African American/Black, 30% Hispanic, 21% non-Hispanic Caucasian/White, and 2% other	Multidimensional Assessment of Preschoolers (MAPS). Participants attended two laboratory visits between 2011 and 2014 where a range of assessments were carried out including maternal interviews and questionnaires to assess children's mental health, family environment, and child-rearing practices.
Clark., 2022	United States	Quantitative	Mother-child dyads **IPV experience**: type of IPV experienced by mothers included physical, psychological, sexual, or injurious forms. **Education:** 40% had a high school GED or less, 60% had post-secondary education.	Convenience sampling: The study recruited participants through advertising to mothers of preschool-aged children. Flyers and informational postings were used to target agencies serving women who had recently experienced IPV Random assignment: 120 Eligible, mother-child pairs were sequentially assigned to either a treatment

				group (participating in the Moms Empowerment Program [MEP] and Preschool Kids Club [PKC]) or a no-treatment comparison group.
Chen., 2022	United States	Quantitative Longitudinal	Mother-child dyads **IPV experience:** 5% physical victimization, 30% physical and emotional victimization. **Relationship status:** 75% unmarried Mental Health: Mothers with self-reported depression symptoms	The data were collected from 20 cities with a population over 200,000 between 1998 and 2000, and subsequent follow-up surveys were conducted at different intervals when the children were 1, 3, 5, 9, and 15 years old. **Three stage stratified random sampling**: The initial sample consisted of 4,898 mothers. Follow-up response rates were generally high, with 4,231 mothers participating in the Year 3 survey, 4,139 in Year 5, and 3,515 in Year 9. At Year 15, 3,580 primary caregivers and 3,444 adolescents completed the survey. After accounting for missing values and

				constructing the final set of variables, the analytic sample was narrowed down to 2,065.
Dubowitz., 2001	United States	Quantitative Longitudinal	Mother-child dyads **Mother's age:** mean age 30.1% **Child age:** mean age 49 months **Ethnicity:** African American **Relationship status:** 31.7% were married	419 Mothers, Purposive and Convenience Sampling in multi sites: , recruited families from two locations: a southern state and an eastern city. Southern Sample: Families were identified from a statewide registry of high-risk newborns, based on medical and psychosocial risk factors. When the children reached the age of 4 to 5, two groups were identified from this high-risk cohort: A group of maltreated children. A comparison group of children with no known maltreatment (i.e., no Child Protective Services report).

				Eastern Sample: Families were identified when the children were less than 2 years old from three different types of pediatric clinics: Clinics for children at risk of human immunodeficiency virus (HIV) infection. Clinics for children with failure to thrive. General paediatric primary care clinics. Maltreatment was not a criterion for inclusion in the eastern sample.
Allen., 2014	South Africa	Quantitative Cross-sectional	HIV positive women with child between 6-10 **Maternal age**: mean age 33.12 **Child age:** mean age 8.23 **Education level:** 32.2% 12 years or more, 67,8% less than 12 years	N=361 **Convenience Sampling:** Recruited from local primary health clinics and immunology clinics in Tswhane South Africa by research assistants.

Gustafsson., 2012	United States	Quantitative Longitudinal	**Mothers** **Maternal IPV-** Conflicts Tactics Scale-Couple Form R (CTS-R) **Maternal Depressive Symptoms**: Brief Symptom Inventory **Maternal Parenting behaviours**: assessed during parent-child interaction at each home visit. Interactions were video-taped and coded using seven global rating scales, sensitivity/responsiveness, detachment/disengagement, intrusiveness, stimulation of cognitive development, positive regard, negative regard, and animation) adapted from those used by the National Institute for Child Health and Human Development Study of Early Childcare (National Institute for Child Health and Human Development Early Childcare Research Network, 1999)	Sample Size: 705 families. These families had both biological parents living in the home with the target child when the child was 6 months old, and they remained in the home until the child was 24 months old. Stratified random sampling

Murphy.,2010	United States	Quantitative Cross-sectional	Mothers, with HIV with children aged 6-12 **Mother's age**- 37.5 years (Age range = 24-54 years) **Ethnicity**: 81.2 self-identified as Latina, 15,9% as black, 1.4% white and 1.4% black and other. **Relationship status:** Half had never been married, 24/6% were currently married, 39.1% were currently living with a spouse or male partner. **HIV status:** Mothers were aware of their HIV status for on average 11-12 years. Children: 5.8% of mothers had one child, 24.6%had two children, 37.7% had three children and 31.9% had four or more children. **Education:** Mothers had completed on average 8.7 years of school.	Sample Size: 69 women Sampling strategy: Random assignment
Rochat., 2017	Global	Review	Literature Review	N/A
Lachman., 2014	South Africa	Quantitative Cross-sectional	Caregiver-child dyads **Caregiver age:** mean age 44.23 **Caregiver sex:** 88% were female	2477 caregiver-child dyads stratified systematic random sampling in rural and peri-urban sites.

			Child age: mean age 13.57 **Caregiver Aids illness:** 27.7%	

Table 3

Study outcomes for HIV, IPV and poor mental health syndemic and their impact on parenting practices

First author & year	Syndemic	Measures and Scales	Results
Sherr, 2016	HIV and MH	**Caregiver Mental Health:** Shona Symptom Questionnaire **Domestic and Community Violence:** Assessed through child-reported questions adapted from conflict tactics scales, capturing the frequency of domestic conflicts and witnessed community violence.	• Households with an HIV burden had higher levels of caregiver depression, exposure to community violence and harsh physical discipline. • Caregiver depression was higher in the two HIV-affected groups compared with HIV unaffected groups.

		Caregivers reported on household discipline practices, which were categorised into harsh psychological discipline and harsh physical discipline.	• Household HIV burden was associated with a significant difference in the physical violence experienced by children as a form of discipline.
Levendosky, 2003	IPV and MH	**Domestic Violence:** Severity of violence against women scales (SVAWS) **Retrospective report of childhood abuse and neglect:** Childhood Trauma Questionnaire **Negative life events in the past year:** Life Stress Scale **Depression and PTSD**: Beck Depression Inventory (BDI) & Post- Traumatic Stress Scale	• Domestic violence was significantly directly related to women's psychological functioning, marked by depressive and post-traumatic symptoms. • Psychological distress in mothers who experienced IPV, partly resulting from domestic violence and life stressors, had indirect effects on parenting. • Women traumatized by the violence reported lower parenting effectiveness and more insecure child attachment.

		Parenting Effectiveness: Parenting style survey **Parent-Child Interaction:** Eyberg Task **Mother-child attachment:** Attachment Q-set	
Suardi, 2020	IPV and MH	**Maternal Life-events and interpersonal violence exposure:** Brief Physical and Sexual Abuse Questionnaire (BPSAQ) and the Traumatic Life Events Questionnaire (TLEQ) **Maternal Posttraumatic stress disorder:** Clinical administered PTSD scale and the Post traumatic symptoms checklist-short version PCL-S **Maternal IPV-PTSD** was related to IPV at the hands of an intimate partner rather than non-violent events.	• Lower IPV-PTSD severity and higher Maternal Reflective Functioning (MRF) were associated with greater maternal sensitivity during mother and child interactions. • Mothers with more severe IPV-PTSD symptoms were less sensitive to their children's needs.

		Maternal Alexithymia: Toronto Alexithymia Scale (TAS-20) **Mother-child interactive behaviour:** CARE- Index	
Madigan, 2015	IPV and MH	**Maternal Abuse History:** Adapted version of the Childhood experiences of violence questionnaire (CEVQ) **Maternal Depression:** Centre for Epidemiologic Depression Scale (CESD) **Responsive Parenting:** Mother-child dyads participated in three 5-minute tasks	• Mother's history of physical abuse indirectly affected mothers' ability to engage in responsive parenting. • This indirect effect operated through maternal depressive symptoms. • Mothers who had a history of physical abuse and subsequent depressive symptoms were less able to engage responsively with their children.
Holmes, 2013	IPV and MH	**IPV experience:** Conflict Tactic Scale **Maternal Mental Health:** Composite International Diagnostic interview short form (CIDI-SF) **Maternal Warmth:** Home observation for	The presence of IPV was significantly related to deteriorating maternal mental health.

		measurement of the environment (HOME) Child Maltreatment: Parent-child Conflicts Tactic Scale (CTS-PC)	• Poor mental health conditions in the mother were shown to result in a range of harsh parenting outcomes, • Lower Maternal Warmth: Women who were exposed to IPV and who subsequently experienced poor mental health demonstrated lower levels of warmth towards their children. • Physical and Psychological Abuse: Mothers with poor mental health were found to engage in more frequent physical and psychological abuse towards their children. • Lack of Direct Association: The study didn't find a direct link between IPV and aggressive behaviour in children or between IPV and physical abuse, which emphasizes the importance of maternal mental health as an intermediary factor.
Fujiwara, 2012	IPV and MH	**Childhood Abuse History:** Childhood trauma questionnaire adapted for Japanese	• Specifics in Parenting: Scores for neglect, no playing, and no praising were significantly

		context **Experience of Domestic Violence:** Index of Spouse Abuse **Maternal mental health:** Classified into dissociative, depressive, or traumatic symptoms. Based on DSM-IV participants responded to questions related to the symptoms on a 1 to 4 Likert Scale. **Maternal parenting:** Japanese version of maltreatment and the home observation for measurement of the environment scale. Assessed using five statements on physical abuse, psychological abuse, neglect, and positive interactions with the child.	lower post-separation with abusive partner, but no change was noted in physical abuse. Psychological abuse by the mother increased post-separation. Factors Affecting Parenting: Violence-related factors from the partner (specifically, child maltreatment by the husband/partner) were positively associated with a reduction in the mother's total score for harsh parenting post-separation. • Child Abuse History (CAH), DV, and mental health issues did not show an association. CAH didn't show a link with a decrease in the mother's mistreatment of her child. Results showed that parting ways with an abusive spouse was not entirely effective in interrupting the cycle of child maltreatment passed down through generations. Mental health issues in the parent, like dissociation or depression, are thought to serve as the intermediary that perpetuates this cycle of abuse.

Graham-Bermann, 2009	IPV and MH	**Child emotional and behavioural issues:** Child Behaviour Checklist **Conflict Tactics Scales:** Measuring the frequency and severity of IPV they experienced in the past year. **Maternal Depression:** Beck Depression Inventory **PTSD:** Post-traumatic Stress Scale for family violence **Parenting style, focussing on warmth and effectiveness**: Anxiety and Parental Childbearing Style Scale (APCSS)- Parenting style, focusing on warmth and effectiveness **Family functioning, problem solving and**	• A large proportion of the mothers were clinically depressed, with only 26.5% not showing signs of depression. • Scores on post-traumatic stress (PTS) also indicate a frequency of symptoms ranging from 3-11 times, suggesting poor mental health among the mothers. Disciplinary Approaches • Corporal punishment was a common disciplinary method, with 58% of mothers reporting using it in the past month. • Time-outs and grounding were less commonly used, with only 18% of mothers reporting these non-violent methods. Emotional Availability • Emotional warmth and availability were notably higher among mothers with lower depressive symptoms.

		effective involvement: McMaster Family Assessment Device FAD	• However, even among severely depressed mothers, many instances of emotional warmth were observed. Involvement in Educational Activities • 41% of mothers reported helping their children with homework at least three times a week. • Mothers with better mental health were more likely to be involved in their children's education Parent-Child Communication • Open communication between parent and child was positively correlated with maternal mental well-being • Mothers in the "Struggling" and "Depressed" cluster were less likely to discuss sensitive topics like HIV and intimate partner violence with their children. Supervision and Monitoring • Mothers experiencing high levels of intimate partner violence had a decreased capacity for effective child supervision.

			• Lack of supervision was correlated with increased risk for child maltreatment.
Howell, 2015	IPV and MH	**Maternal Depressed mood:** Conflict Tactic Scale (CTS2) Maternal IPV severity Centre for Epidemiologic studies depression scale (CES-D) **Maternal Posttraumatic stress:** Posttraumatic stress diagnostic scale (PDS) **Parenting practices**: Alabama Parenting Questionnaire	• Mothers who had experienced IPV and had mental health conditions specifically depression and post-traumatic stress disorder (PTSD), affected their parenting practices. • More likely to engage in harsh parenting practices.
Cross, 2018	IPV and MH	**Lifetime Exposure to different trauma:** Traumatic events inventory (TEI) **Current PTSD symptoms:** Modified PTSD symptoms scale **Risk of perpetrating physical child abuse:** Child abuse potential inventory	• Mothers reported high rates of adult exposure, including being attacked by a spouse or intimate partner (53.57%). • Maternal trauma was significantly positively correlated with maternal PTSD symptoms. • Both maternal trauma and PTSD symptoms were significant predictors of increased child abuse potential,

		Parenting Stress: Parenting stress index includes parent-child dysfunctional interactions and difficult child.	
Stein, 2021	IPV and MH	**Depression:** Centre for Epidemiologic Studies Depression Scale (CES-D) **PTSD:** Post-traumatic Diagnostic Scale (PDS I**ntimate partner violence exposure**: Conflict Tactics Scale-2 (CTS-2) **Maternal positive parenting practices:** Alabama Parenting Questionnaire (APQ)	• Participation in the Maternal Empowerment Programme (MEP) led to a greater reduction in depressed affect compared to the control group. • Lower levels of post-traumatic stress symptoms were significantly correlated with decreased levels of depression over time. • Positive changes in parenting practices, specifically higher levels of positive parenting and maternal acceptance of children's negative emotions, were significantly associated with lower levels of depression.

Mitchell, 2010	IPV and MH	**Maternal Depression:** Center for Epidemiologic Studies Depression Inventory (CES-D) **Maternal Parenting:** Parent Practices Interview Measured the mothers' self-reported disciplinary actions and views on child-rearing. **Quality of home environment children were exposed to in terms of stimulation and**	• Young African-American mothers direct experiences of violence were associated with more aggression and depressive symptoms, which were in turn associated with more frequent use of harsh discipline.

		support: Home Observation for Measuring the Environment (HOME) Inventory	
Gurtovenko, 2020	IPV and MH	**Mother's PTSS (Posttraumatic Stress Symptoms):** Posttraumatic Stress Diagnostic Scale (PDS). **Mother's Vagal Suppression (RSA):** Quantified by measuring RSA during a baseline and during parent-child interaction. **Mother's Reported ER (Emotion Regulation):** Measured using the Parent Meta-Emotion Interview (PMEI). Audiotaped interviews lasting 45-60 minutes. **Parenting Practices:** Assessed using the Coping With Children's Negative Emotions Scale (CCNES).	• Mothers with Post-Traumatic Stress Symptoms (PTSS) were found to engage more in non-supportive parenting, especially if they had low levels of vagal suppression. • RSA was found to moderate, and Emotional Regulation (ER) to mediate, these relationships. For instance, Respiratory Sinus Arrythymia (RSA) influenced how PTSS affected non-supportive parenting: the impact varied depending on RSA levels. Similarly, ER served as an explanation for how PTSS influenced supportive parenting; the emotional regulation of the mother determined whether she engaged in supportive parenting practices despite high PTSS.

Sousa, 2022	IPV and MH	• Parenting practices - looking at attachment, warmth, nurturance and communication.	• The mental health effects of IPV have a direct impact on the quality of parenting, often mediated through maternal depression. • Not all studies found a direct relationship between poor mental health due to IPV and impaired parenting.
Greene, 2018	IPV and MH	**IPV exposure: Revised Conflict Tactics Scale**: to measure Maternal PTSD: PTSD Checklist- civilian version (PCL) **Family life stress and child rearing practices from the child's birth to the present:** Family Socialization Interview -Revised (FSI-R)	• 22% of mothers reported experiencing physical IPV in the past year. • Mothers exhibited varying levels of PTSD symptoms and parenting styles, with a significant portion practicing authoritative but non-punitive methods. • Physical and psychological IPV correlated strongly with maternal PTSD. • Maternal PTSD was positively associated with restrictive/punitive parenting styles.

			• Pathways: IPV directly led to maternal PTSD. Maternal PTSD directly led to both restrictive/punitive parenting
Clark, 2022	IPV and MH	**Maternal Depression:** The Center for Epidemiologic Studies Depression Scale (CES-D)	• Strong correlations were observed between depression at Time 1 and Time 2, and between depression and harsh parenting.

		Negative Parenting: The Alabama Parenting Questionnaire (APQ)	• IPV was positively correlated with maternal depression at both time points. • Time 1 maternal depression predicted harsh parenting at Time 1, but not at Time 2. • Higher levels of IPV exposure were positively correlated with maternal depression, which in turn influenced negative parenting behaviours.
Chen, 2022	IPV and MH	**Intimate Partner Violence (Baseline):** This was measured in terms of physical and emotional victimization that mothers experienced in the past month. **Maternal Depression Symptoms (Year 3):** Composite International Diagnostic Interview Short Form (CIDI-SF).	• Findings from 2,065 mothers found that 5% reported physical victimization and 30% reported emotional victimization at the start of the study. • Physical punishment of children at Year 5 was related to maternal depression at Year 3 and emotional victimization initially.

		Physical Punishment (Year 5): Mothers reported on five parenting behaviours that involved physical discipline, such as spanking, hitting with an object, slapping, pinching, and shaking. These were rated on a scale from 0 to 7 based on the frequency in the past year. Scores were recoded and summed, with higher scores representing greater frequency of physical punishment.	• Physical and emotional victimization at baseline had a direct positive effect on maternal depression at Year 3.
Dubowitz, 2001	IPV and MH	**Maternal History of Victimization:** a study developed measure was used. Measured when children were 4-5 years old using an 11-item dichotomous questionnaire. Categories were divided into timing (childhood/adolescence vs adulthood vs both) and type (physical vs sexual vs both). Parenting Measures	• Significant differences found in harsh parenting and maternal depression. • Mothers victimized both in adulthood and childhood reported higher levels of depression and harsher parenting practices. • Results were consistent when looking at type of victimization, with mothers who had experienced both physical and sexual abuse reporting the worst outcomes.

		Verbal aggression and minor violence tactics by mothers: Conflict Tactics Scale **Maternal Depression:** assessed using the Centre for Epidemiologic Studies Depression Scale, a 20-item dichotomous measure	• No impact found on children's physical health and cognitive development based on maternal history of victimization.
Gustafsson,2012	IPV and MH	**Maternal IPV-** Conflicts Tactics Scale-Couple Form R (CTS-R) **Maternal Depressive Symptoms:** Brief Symptom Inventory **Maternal Parenting behaviours:** assessed during parent-child interaction at each home	• Higher levels of reported IPV when the child was 6 months old were associated with an increase in maternal depressive symptoms when the child was 15 months old. These increased symptoms of depression, in turn, were associated with harsher and more

		visit. Interactions were video-taped and coded using seven global rating scales, sensitivity/responsiveness, detachment/disengagement, intrusiveness, stimulation of cognitive development, positive regard, negative regard, and animation) adapted from those used by the National Institute for Child Health and Human Development Study of Early Child Care (National Institute for Child Health and Human Development Early Child Care Research Network, 1999)	intrusive parenting behaviours when the child was 24 months old. • Suggesting an indirect pathway: IPV affects maternal depression, which then impacts parenting practices.
Murphy, 2010	HIV and MH	**General Anxiety:** Rand Mental Health Inventory's anxiety subscale Health-Related Anxiety: Health-Related Anxiety Scale **Parenting Stress:** Parenting Stress Index's "Difficult Child" subscale	• Mothers living with HIV and their young children, had higher levels of maternal anxiety and this was associated with poorer parenting skill.

		Parent-child Communication: Parent-child communication scale (Miller, Forehand & Kotchick, 1999) Family Routines Subset of the Family Routines Questionnaire **Parenting Dimension:** Parenting Dimensions Inventory (PDI)	• Mothers who were more anxious about their own health and functioning, and more stressed in their parental role, were more likely to exhibit poorer. parenting skills _ • Mothers reported that they engaged children less frequently in family routines, had poorer parent-child communication, and had less consistent discipline.
Rochat, 2017	HIV and MH	Review : Specific tools not mentioned	• Parental depression, common among parents with HIV, leads to disturbances in parental attention and responsivity, which are crucial to sensitive parenting. • Mothers recently diagnosed with HIV are preoccupied with stigma and life expectancy, affecting their stress levels and contributing to depressive symptoms that further negatively impact their parenting practices. • Cognitive processes, such as ruminations and preoccupations about these negative aspects, mediate the relationship between HIV

			diagnosis and parenting, affecting both attention capacity and responsiveness. • Avoidant coping strategies are common among mothers with HIV, particularly in the first two years post-partum. These strategies include distraction, escape, denial, emotional venting, self-blame, lack of control, and substance use. • Mothers often use these avoidant coping strategies to manage the stress of living with HIV in stigmatised contexts where they have limited access to support. • Avoidant coping is associated with parenting stress and reduced parental attention and responsivity, affecting parent–child communication and the mental health of both parent and child. • In the longer term, avoidant coping tends to increase, particularly between 6–21 months post-partum, and is associated with deficits in parenting practices, lack of parental involvement, and poor parenting style.

Allen, 2014	HIV and MH	**Socio-demographic factors:** Measured SES of the women, five questions regarding their home, Mother's psychological functioning obtained via maternal report, to determine illness severity. **Maternal psychological characteristics:** Maternal Depression: Centre for epidemiologic studies-depression scale (CESD) **Maternal General coping:** Brief COPE. Maternal Religious Coping: Religious coping Scale **Maternal Parenting characteristics**: Parenting stress Index (PSI) to derive both parenting stress and parent-child dysfunction.	• HIV illness was associated with greater parent-child dysfunction and greater parenting stress, but illness was not associated with either positive or negative parenting style. • Illness plays a role in maternal perceptions of dysfunction in the mother-child relationship and perceived stress but may not influence a mother's overall parenting orientation toward positive or harsh strategies. • Maternal depression was related to increased parenting stress and parent–child dysfunction.

		Parent's self-reported reactions to negative child affects in distressing situations: Coping with Children's negative emotions scale. **Child assessment:** Obtained via maternal report. **Children's adaptive functioning:** Vineland Adaptive Behaviour Scale. **Children's internalizing and externalizing behaviour:** Child behaviour checklist (CBCL)	
Lachman, 2014	HIV and MH	**Parenting; Alabama Parenting Questionnaire** Short form (APQ-SF) **Child AIDS orphanhood:** Verbal Autopsy Questionnaire (VA)	• Families with caregivers who are ill with AIDS or have children orphaned by AIDS generally have less positive parenting practices. This is compared to families not affected by AIDS.

		Depression: Centre for Epidemiological Studies Depression Scale (CES-D) **Child behaviour problems:** Strengths and Difficulties Questionnaire (SDQ)	• Other Factors: These families also have more financial hardship, more depression among caregivers.
Thurston, 2020	HIV-IPV-MH	**Parenting practices:** Alabama Parenting questionnaire **HIV status: Question:** What was the result of your most recent HIV test? **Depressive Symptoms:** Center for Epidemiological Studies Depression Scale (CES-D) **PTE (natural disaster, accident, life-threatening illness, sudden death of a loved one:** The life events checklist	• HIV status significantly moderated the relationship between depressive symptoms and negative parenting. • The presence of HIV amplifies the association between depressive symptoms and negative parenting among mothers experiencing IPV. The group of mothers living with both HIV and IPV are more vulnerable to adopting negative parenting practices when also dealing with depressive symptoms.

		Child Maladaptive Functioning: Strengths and Difficulties Questionnaire (SDQ)	• The added physical health burden of living with HIV in the context of recent IPV exposure likely increases parental stress, which contributed to more use of harsh • parenting practices.

Chapter 5: Qualitative Results

Silima M, Christofides N., Franchino-Olsen H., Woollett N. , Meinck F. (2024) *"I've accepted it because at the end of the day there is nothing, I can do about it"*: A qualitative study exploring the experiences of women living with the HIV, intimate partner violence and mental health syndemic in Mpumalanga, South Africa 4 (5) https://doi.org/10.1371/journal.pgph.0002588 (Silima et al., 2024a)



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"I've accepted it because at the end of the day there is nothing, I can do about it": A qualitative study exploring the experiences of women living with the HIV, intimate partner violence and mental health syndemic in Mpumalanga, South Africa

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Abstract

In South Africa, Mental Health (MH), HIV, and Intimate Partner Violence (IPV) form a syndemic, that disproportionately affects women. These challenges are often co-occurring and create complex adversities for women. Recognising these intersections and the broader socio-cultural dynamics at play is crucial to understanding the layered experiences of these women and developing effective interventions. This research explores the experiences of the women living with at least two of the epidemics (HIV, IPV and or MH) and how they cope. A qualitative study design was used and 20 women (22–60 years) were recruited from Mpumalanga, South Africa. To be eligible for the study the women had to have experienced at least two of the epidemics. Data were collected through home-based interviews, arts-based activities, and analysed thematically using MAXQDA (2022) software. MH challenges were prevalent among all the participants and were linked to both IPV and HIV, resulting in symptoms such as anxiety, depression, and suicidal thoughts. In relation to the HIV-MH link, MH challenges in this combination included feelings of denial, sadness and anxiety related to participant's HIV diagnosis. A bidirectional relationship also existed in the IPV-MH group where pre-existing MH challenges among women increased their vulnerability of having violent partners, whilst IPV also increased MH challenges. In the IPV-MH-HIV group early childhood violence exposure was linked with MH challenges and later victimization and vulnerability to HIV. Participants primarily used religion, acceptance, occasional alcohol, and family support as coping strategies. Particularly in IPV situations, alcohol use/misuse was the most prevalent coping strategies. The study highlights the syndemic relationship between HIV, IPV and MH challenges among South African women living in a peri-urban community, with a central emphasis on MH challenges. Interventions should

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Chapter 5

"I've accepted it because at the end of the day there is nothing, I can do about it": A qualitative study exploring the experiences of women living with the HIV, intimate partner violence and mental health syndemic in Mpumalanga, South Africa

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In South Africa, Mental Health (MH), HIV, and Intimate Partner Violence (IPV) form a syndemic, that disproportionately affects women. These challenges are often co-occurring and create complex adversities for women. Recognising these intersections and the broader socio-cultural dynamics at play is crucial to understanding the layered experiences of these women and developing effective interventions. This research explores the experiences of the women living with at least two of the epidemics (HIV, IPV and or MH) and how they cope. A qualitative study design was used and 20 women (22-60 years) were recruited from Mpumalanga, South Africa. To be eligible for the study the women had to have experienced at least two of the epidemics. Data were collected through home-based interviews, arts-based activities, and analysed thematically using MAXQDA (2022) software. MH challenges were prevalent among all the participants and were linked to both IPV and HIV, resulting in symptoms such as anxiety, depression, and suicidal thoughts. In relation to the HIV-MH link, MH challenges in this combination included feelings of denial, sadness and anxiety related to participant's HIV diagnosis. A bidirectional relationship also existed in the IPV-MH group where pre-existing MH challenges among women increased their vulnerability of having

violent partners, whilst IPV also increased MH challenges. In the IPV-MH-HIV group early childhood violence exposure was linked with MH challenges and later victimization and vulnerability to HIV. Participants primarily used religion, acceptance, occasional alcohol, and family support as coping strategies. Particularly in IPV situations, alcohol use/misuse was the most prevalent coping strategies. The study highlights the syndemic relationship between HIV, IPV and MH challenges among South African women living in a peri-urban community, with a central emphasis on MH challenges. Interventions should holistically address these challenges, with particular focus on MH challenges, cultural sensitivity, and promotion of healthy coping strategies.

Keywords: Maternal HIV/AIDS; Coping, Mental Health; Intimate partner violence; South Africa

Introduction

Women living with HIV or AIDS (hereafter referred to as HIV for brevity) and experiencing intimate partner violence (IPV) often face various mental health (MH) challenges. Research indicates that there is a higher prevalence of MH disorders among people living with HIV. Specifically, conditions such as depression, post-traumatic stress disorder (PTSD), anxiety, psychosis, and alcohol misuse are observed, which are often attributed to psychological stress, antiretroviral medication side effects, social stigma, discrimination, and lifestyle factors. (Brandt, 2009; Remien et al., 2019). Particularly, women living with HIV are also more likely to experience coexisting MH conditions and exhibit poorer overall MH than men (Oram et al., 2022). The increased vulnerability is highlighted in established research which indicates existing gender disparities in MH conditions such as depression (Noble, 2005) anxiety (McLean & Anderson, 2009) and PTSD (Breslau, 1997; Breslau & Anthony, 2007). Furthermore, in the context of HIV these gender disparities in MH conditions may further be exacerbated (Orza et al., 2015). Complicating matters further, IPV contributes to adverse MH outcomes, including anxiety, depression, PTSD, and increased suicide risk (Oram et al., 2022). The primary mechanism that links IPV to the latter MH outcomes is IPV-induced traumatic stress (K. M. Devries et al., 2013b; Seedat, 2012). Moreover research also shows that IPV and MH disorders often have a reciprocal relationship, where one can increase the risk of occurrence of the other (K. M. Devries et al., 2013b; Seedat, 2012). The compromised cognitive and emotional resources that often accompanies MH disorders can make

individuals more vulnerable to manipulative or abusive behaviors, thereby increasing their risk of becoming victims of IPV (Woollett & Hatcher, 2016). Previous research has also established a reciprocal link between IPV and HIV, indicating that those subjected to IPV have a 48% higher risk of HIV infection compared to their counterparts who haven't faced such violence. The heightened risk can be attributed to factors such as coercive sex by an abusive partner and their propensity for engaging in risky sexual behaviours and reduced condom use (Sulivan, 2019).

The interconnectedness between HIV, IPV and MH disorders can be better understood using syndemic theory as proposed by Merril Singer (Singer, 1996). Singer defines a syndemic as the complex interplay existing between different epidemics, especially in the context of social inequality and health disparities (Singer, 1996). While SAVA primarily focused on the intersection of substance abuse, violence, and AIDS, our study expands this to encompass a broader range of MH challenges. HIV has long been long been recognized as an epidemic globally (UNAIDS, 2023; World Health Organization, 2023a), however, we argue that IPV and MH conditions can also be categorized as epidemics. In South Africa IPV is a significant public health issue, ranking as the second highest burden of disease after HIV or AIDS. It also contributes substantially to disability adjusted years (DALYs) especially among women where IPV and child sexual abuse are common (Norman et al., 2010). In terms of MH conditions, there has been a significant global increase, with a 13% increase over the past decade. Additionally, these conditions are now responsible for one in every five years lived with a disability (World Health Organization, 2023b). These trends highlight the epidemic nature of both IPV and MH.

The emphasis of the syndemic theory is that epidemics do not exist in isolation, but rather are often interconnected and co-occur or cluster in social groups as a result of harmful social conditions such as poverty and stigma. These conditions often interact in ways that contribute to an increased overall burden of disease. The Substance Abuse, Violence and AIDS (SAVA) syndemic was first identified by Singer, he argued that contextual factors such as poverty, inadequate housing, family instability, drug related violence worked in conjunction to exacerbate the conditions of SAVA simultaneously (Singer, 1996) . Much research has been conducted on the SAVA syndemic, yet there is still very limited data on the HIV, IPV and MH as a syndemic. As shown, the intersection of HIV, IPV, and MH disorders can exacerbate the health outcomes associated with these conditions.

Coping strategies of women with the HIV, MH and IPV syndemic

Understanding how women living with the HIV-IPV-MH syndemic cope in the face of these intertwined epidemics is critical. Research has shown that the coping strategies used by people living with HIV and those experiencing IPV have a link to the emergence of MH consequences (L. Goodman et al., 2003; Krause et al., 2008). Therefore, exploring the coping strategies of these women could highlight important strategies that have the potential to protect their psychological and physical wellbeing. Research shows that psychological reframing of negative events and social support have proven essential for women experiencing MH and HIV management, while acceptance and hope serve as a popular coping strategies for all three epidemics (Brandão et al., 2020; Burgess & Campbell, 2014; Medley et al., 2009; Sreelekshmi, 2015). Furthermore, adhering to HIV treatment has been found to be a key coping strategy for women living with HIV, largely driven by their sense of responsibility to their family and in particular their children (Burgess & Campbell, 2014). In the IPV context, coping strategies are more diverse, according to a systematic review of US studies, it was found that religious or spiritual reliance and active abuse resistance were common whilst self-criticism and substance misuse were less common (Rizo et al., 2017). Contrary to this, a systematic review of South African studies found that many of the women who had experienced IPV used avoidance and distraction as a way to cope and this included substance abuse/misuse (Sere et al., 2021). Seeking help has also been found to be a coping strategy among some IPV survivors, however this varies and is dependent on the severity of the victimization as well as resources available to the woman (Rizo et al., 2017). A comprehensive understanding of the root causes that lead to specific coping strategies, can help us in developing interventions that can target specific issues so as to activate more adaptive coping strategies. Identifying coping strategies of people living with HIV, IPV and MH syndemic has important implications for healthcare providers and can lead to a more holistic approach to managing the epidemics.

Present Study

The primary objective of the present study was to explore the experiences of women navigating life with the intersections of HIV, IPV and MH challenges in a peri-urban community in Mpumalanga South Africa. We aimed to analyse the interplay of the epidemics and better understand the coping strategies used by the women. Furthermore, we sought to

identify variations in coping strategies based on the different combinations of the epidemics experienced by the women.

Methods

Study Design

To answer the study objectives a qualitative study design was used. The use of this approach was important in that it helped in exploring the research aims in more depth. We were able to have a deeper understanding of the participants experiences, perspectives and attitudes in relation to living with the HIV, IPV and MH syndemic. Furthermore, using a narrative approach helped to emphasize the personal experiences of the participants which in turn allowed for their individual stories to take centre stage. By focusing on these narratives, we were able to attain rich, detailed data and as a result enhance the depth of the research findings. A narrative inquiry is a type of qualitative research method that uses the stories of the participants as the primary source of data (Bleakley, 2005). The methodology has been used across various fields to explore culture, history, identity and people's lifestyles through the narrators' experiences (Lieblich et al., 1998). In particular the approach includes investigating human experiences through narratives or producing the data in a narrative format (Hoshmand, 2005).

Study Setting

The current study was conducted in a peri-urban area within the Enhlanzeni District Municipality of Mpumalanga Province, South Africa from October 2022 to February 2023. Mpumalanga province has an estimated population of approximately 4 million people (Simbayi et al., 2017), with the primary languages being spoken being siSwati, isiZulu, Xitsonga and isiNdebele (South African High Commission (Ottawa), 2019). The study site is often categorized as a township, and primarily consists of brick houses. Common challenges in the community include inconsistent supply of basic services such as water and electricity with much of the infrastructure being informal. Unemployment is also rife, with the most common forms employment being domestic work, bricklaying and farming. The HIV prevalence in the district is reported to be 19.% among the adult population (Gómez-Olivé et al., 2013; Simbayi et al., 2017). In terms of IPV, 28% of women in Mpumalanga have reported experiencing physical abuse from their current partner at some point in their lives

(Seabi, 2009). Moreover, a national study found that 29,2% of adults in Mpumalanga indicated that they had experienced common mental disorders at some point in their lives lifetime (Herman et al., 2009).

Sample

Twenty participants were purposively selected for the study. Selection of the participants was based on their responses to specific questionnaire items from the Interrupt_Violence Study (Meinck et al., 2023). Participants were between the ages of 20-60 years and had to screen positive for HIV, IPV and/or MH challenges. Participants did not have to have experienced all three epidemics to be included in the study; any combination of the two epidemics was sufficient for inclusion.

During the quantitative interview, there were automatic referral flags that were produced if a participant disclosed behaviours, thoughts, or feelings of concern (S1 Table). The Flags were used to create voluntary and mandatory referrals to the study social worker. To identify participants who had experienced at least two of the epidemics, we noted participants with two or more flags for the epidemics of interest, indicating they had self-reported some combination of MH, IPV, and HIV. Thereafter we did a detailed analysis of the participants' responses to the individual items for MH, IPV and HIV in the questionnaire. The participants were categorised into groups based on their questionnaire responses. In terms of MH challenges participants answered questions in the following screening tools: National Institute for Mental Health's Ask Suicide Screening Questions (ASQ) for suicidality risk (Horowitz et al., 2012), Generalized Anxiety Disorder Screener for adult for anxiety (Löwe et al., 2008) , Patient Health Questionnaire for depression (Adewuya et al., 2006) and Post Traumatic Stress Disorder-8 (PTSD-8) for PTSD (Hansen et al., 2010). For IPV experience, participants needed to have answered yes to any of the questions in the WHO instrument for physical and sexual violence experience (Garcia-Moreno et al., 2005). HIV status was determined either through self-reporting or identified during the voluntary HIV test administered by the interviewer.

Furthermore, the participants in the study were either mothers or primary caregivers for a child or children aged 17 or younger at the time of enrolment. This was because the data from the current study stems from a larger study which focussed on the experiences of parenting a child under the age of 17.

Data Collection tools and procedure

The lead author alongside two research assistants conducted in-depth interviews which lasted between 60 to 90 minutes with each participant during October 2022-February 2023. The interviews were conducted in the participants' preferred languages of SiSwati or Xitsonga and took place face-to-face in a private space at a time convenient for the participants. The interviews allowed for probing into participants' experiences with IPV, living with HIV, and navigating MH challenges. We explored their past and current experiences with IPV, the impacts of HIV diagnosis and its disclosure, and the community's potential stigma towards HIV. Furthermore, their MH journey was explored in the context of these intersecting epidemics.

To stimulate rich conversation, we used arts-based techniques such as the Kinetic Family Drawing (KFD), River of Life, and Sandbox (Burns & Kaufman, 2013; Denov & Shevell, 2021; Mannay, 2016). Based on the depth of data obtained from the interview, some participants were asked to participate in more than one activity, which contributed to the data's richness. The probes used for the arts-based techniques can be found in S2 Text. The decision regarding which participants engaged in more than one activity was participant driven, in some cases where a participant had challenges with an activity, we switched to another activity. Conversely if a participant engaged well with one activity and this provided rich data, a second activity was used to help organize the story more effectively and to explore deeper into specific events.

With the KFD, participants drew two pictures representing their family of origin and current family dynamics, helping them to recall memories and build rapport with the interviewer (Burns & Kaufman, 2013; Ebersöhn et al., 2012). In the River of Life activity, participants visually drew their life journey, showing significant positive and negative events (Denov & Shevell, 2021). The Sandbox activity, inspired by sandplay therapy, provided participants a with medium to create three-dimensional scenes, that facilitated an artistic narrative of their experiences (Mannay, 2016; Weinrib, 2004). To capture the story, multiple photos were taken of the participants' sandbox from various angles and at different times especially when participants changed the positioning of the figures during the interviews. The participants were also audio recorded while they were describing the scenes in the sandbox. This allowed us to capture the story as it unfolded.

Ethical considerations

The study received ethical clearance from the Human Research Ethics Committee (HREC) of the University of the Witwatersrand (M220526), ensuring adherence to recognized ethical standards for research. The main Interrupt Violence study was also ethically approved (M190949) by HREC, University of Edinburgh (No: 264227) and Provincial Department of Health Mpumalanga (MP-202012–003). All participants provided voluntarily written informed consent to participate and to have the interview audio recorded. The consent forms were distributed and explained to the participant prior to data collection in their preferred language, and they clearly outlined the objectives of the study, the nature of the participant's involvement, and how the collected data would be used and stored to maintain confidentiality. Participants were also informed of their right to withdraw from the study at any time without any repercussions. To protect participants' confidentiality, unique, non-personally identifying ID numbers and pseudonyms replaced participants' real names in all research materials. Photographs were taken of participants' artwork, with their explicit consent, to supplement data analysis. All data, including these photographs, were securely stored. Recognizing the sensitive nature of the study and the potential for psychological risk, we implemented a distress protocol. This protocol guided the interviewer in responding sensitively to a participants' emotions during and after the interview, ensuring timely provision of follow-up resources and support. A full-time social worker from the Interrupt_Violence study was also readily available for necessary or mandated referrals. We had 10 mandatory referrals; 5 non-mandatory referrals and 5 participants did not require a referral. Mandatory referrals included cases such as participants experiences of domestic violence including a weapon, suicidality symptomology especially in situations where there was a child in the home. Non- mandatory referrals included any instances where the participant felt that they would benefit from speaking to the social worker, this ranged from issues regarding accessing their social grants, accessing psychological assistance for their MH challenges and challenges of food insecurities.

Data management and analysis

All interviews were translated, transcribed, and analysed using Braun & Clarke's six-step thematic analysis (Braun & Clarke, 2022). The initial coding framework was deductively developed based on the study's objectives and an early review of transcripts (Creswell & Creswell, 2007). Subsequently, a codebook was developed, which included the coding structure used to represent different themes and patterns found in the data.

The research team then applied the codes using several transcripts, ensuring they were relevant and appropriate to capture the data and that they captured the study's focus. For this analysis, we used MaxQDA 2022 software. Furthermore, an initial six transcripts were reviewed collectively by the research team to ensure the collected data's depth and richness. This exercise helped us to fine-tune our exploration areas, identify points requiring clarity, and identify any emerging themes (Kalff, 1980; Lowenfeld, 1950).

Findings

Characteristics of participants

The participants in the study were grouped into three categories based on their experiences with HIV, IPV and MH challenges. The first group consisted of seven participants, whose ages ranged from 24 to 45 years. Each participant in this group had experienced or were living with all three of the epidemics as disclosed in the questionnaire (HIV-IPV-MH syndemic). The second category included eight participants between the ages of 23 and 57. These individuals had experienced the HIV-MH syndemic. Lastly, the third group had five participants, aged between 22 and 49, who were living with the IPV-MH syndemic. For more detailed specifics on each of the participants refer to Table 1 below. Pseudonyms have been used to conceal the identities of the participants.

Table 1: Participant characteristics and epidemic combinations.

Participant	Age	Number of Children	Relationship Status	Education Level	Employment Status	Additional Information
Epidemic combination: HIV, MH and IPV						
Noxolo	28	Three	In a relationship	Grade 7	Unemployed	Noxolo is currently experiencing violence with the current partner. She shared MH challenges, with

						symptoms linked to depression and anxiety
Diana	43	One	In a relationship	Grade 1	Unemployed	Diana experienced IPV in the past with the current partner, although at the time of the interview the violence had ceased. She shared MH challenges with symptoms linked to depression.
Silindile	38	One	In a relationship	Grade 10	Part-time employment	Silindile's experiences of IPV were from a previous partner. She shared MH challenges with symptoms linked to suicidality.
Nokuthula	26	Two	In a relationship	Grade 11	Unemployed	Nokuthula's experiences of IPV were from a previous partner, the father of her first child. She shared MH challenges with symptoms linked to depression.
Sphe	28	Two	In a relationship	Grade 12	Unemployed	Sphe's was in a violent relationship at the time of the interview. She shared MH challenges with symptoms linked to depression.
Lerato	24	One	In a relationship	Grade 8	Unemployed	Lerato's experience of IPV is with her previous partner. She shared MH challenges with symptoms linked to suicidality and depression.
Paula	45	Three	In a relationship	Grade 6	Unemployed	Paula has a history of violence with the current partner However, at the time of interview the violence had ceased. She shared MH challenges with symptoms linked to depression
Epidemic combination: HIV and MH						
Nono (CG 7379)	41	Four	Widowed and single	No schooling	Part-Time Employment	Nono shared MH challenges with

						symptoms linked to anxiety and suicidality.
Rejoice	25	One	In a relationship	Grade 12	Casual Work	Rejoice shared MH challenges with symptoms linked to depression and anxiety.
Xoli	23	Three	Single	Grade 11	Unemployed	Xoli shared MH challenges with symptoms linked to depression and anxiety.
Ntombi	26	One	In a relationship	Grade 12	Part-time employment	Ntombi shared MH Challenges with symptoms linked to depression, she was also clinically diagnosed with Trichophagia
Phindi	48	Five	Married	Grade 12	Unemployed	Phindi shared MH challenges with symptoms linked to suicidality.
Pauline	42	Three	In a relationship	Grade 8	Full-time employment	Pauline shared MH challenges with symptoms linked to depression
Nelly	57	Two	Single	Grade 6	Unemployed	Nelly shared MH challenges with symptoms linked to depression and anxiety
Adelaide	46	Five	Married	Grade 7	Part-time work	Adelaide shared MH challenges with symptoms linked to suicidality and anxiety.
Epidemic combination: IPV and MH						
Palesa	22	Two	Single	Engineering Diploma	Unemployed	Palesa is caregiving for her sister's children. At the time of the interview, she was not in a violent relationship, her history of IPV is from previous partners. She shared MH challenges with symptoms linked to depression.
Nomie	28	Two	In a relationship	Grade 5	Unemployed	Nomie was in a violent relationship at the time of the interview. She shared MH symptoms linked to depression.

Cindy	49	Two	Married	Grade 8	Unemployed	Cindy has a history of violence with her current partner, however at the time of the interviewer the violence had ceased. She shared MH symptoms linked to depression and anxiety
Londiwe	42	Three	Married	No schooling	Part-time employment	Londiwe has a history of violence with her current partner, however at the time of the interviewer the violence had ceased. She shared MH challenges with symptoms linked to suicidality and depression.
Ntomfuthi	28	One	Single	Grade 12	Part-time employment	Ntomfuthi has a history of violence with her previous partner, however at the time of the interview she was single. She shared MH challenges with symptoms linked to depression.

Intersecting Epidemics and participant's experiences

Our study found that the interaction between the epidemics often created a mutually reinforcing dynamic that escalated the overall burden on the individuals affected.

Experiences of living with HIV-MH syndemic

Our findings highlighted a significant relationship between MH challenges and HIV. An exploration of the women's experiences revealed that an HIV diagnosis often triggered feelings of denial and a struggle with accepting their status for instance, when Nono (41) was asked to share how she felt when she was first diagnosed with HIV, she responded:

"It was very painful to even accept it, but I had to accept it and let it pass. But to be honest I only really started to accept and get healing maybe six years after I was diagnosed. You know it's hard when you know all the sexual partners you have had in your life, for me it was only two people so it hurt for this to happen to me. But it was only after I was positive that people told me about his history, it was then that I heard of all his past sexual partners who had died from HIV. When I found out I was always crying, constantly crying. Asking myself for how long I will I have to suffer like this.".

Furthermore, for many of these women, an HIV diagnosis triggered symptoms linked to depression, anxiety, and in extreme cases, suicidal ideation. Ntombi, (26), conveyed the anxieties accompanying her HIV positive status,

"It stresses me when, I think of what will happen when he [son] is grown up. I worry a lot especially when I think of times when I will not be around anymore. My heart is sore and I'm constantly scared."

For those participants who reported suicidal ideation, it was often in situations where their children had also acquired HIV. Silindile's (38) son, for example, was born with HIV, when asked which of all of the challenges, she had encountered is the most difficult for her to accept, she responded*:*

"I would say the most difficult for me is the HIV status because it directly affects my son. I don't even know where to begin with solving that situation. How will I ever tell my son, he won't even understand how he contracted this virus. This is the thing that breaks my heart the most, even now, sometimes I just have these feelings of wishing I could kill myself. Every time I think about his father, I just wish I had never met that man, if it were up to me, I would have never even walked in the same direction as that man."

Additionally, the perceived burden and the accompanied denial of an HIV diagnosis often significantly impacted their decision-making regarding treatment initiation. Paula, (45), shared how her HIV status and the emotional toll it took delayed her initiation of treatment:

"I wasn't ready to accept... so I waited five years after being diagnosed, I felt I needed to counsel myself before I could start taking treatment. There was a time where I did something... I would go fetch pills at the clinic and throw them away afterwards, then I fell sick. ***Interviewer:*** *"What happened afterwards?"* ***Paula:*** *"I do not remember exactly who it was, maybe it was the nurse, they told me not to stop taking the pills. They asked me who I want to leave my children with. I went back to the clinic and I never stopped taking them."*

Experiences of living with IPV-MH syndemic

For the participants who had experienced IPV, we found that many of them also reported symptoms indicative of anxiety and depression. Cindy (49) had been in an abusive relationship with the father of her children for many years, she shared how being in this relationship put her in a constant state of fear and worry:

***Interviewer**: "So, were there other times in your life where you felt constantly scared or worried?" **Cindy: "**Yes, it was during that time of the abuse. I would worry all the time about what will happen to my children if I leave. I would look around at other people's lives and feel like I was the only one going through this and I didn't understand why my life was the way that it was. I was so afraid of this man; I thought one day he will kill me."*

Furthermore, Palesa (22), detailed how her abusive relationship created a constant state of anger in her, which she unconsciously directed towards her son. She shared:

"It was difficult, I won't lie, I was angry, I was an angry mother, very angry. Even when he [son] would try and speak to me, I would just insult him to the point that I would even regret it afterwards. I would get pissed off by my partner and take it out on the closest person to me and usually, it was my son he would do a small thing, like spill water, and I would overreact. Like, I realised that the way I was hitting him was not normal. I would take out a lot of pain on him, but I learned that he doesn't know anything, he is a baby".

On the other hand, some participants reported the relationship between MH and IPV as bidirectional where they felt that their MH challenges also lead to violence in their relationship. Nomie (28) shared how her challenges with anger which spurred from her childhood trauma often impacted on her intimate relationships at times leading to violence:

"I'm one person who is quick to anger. I've always been an angry person. I have serious anger issues especially when I think about how my parents can just abandon me like that as a child. If someone does something to me, I get very angry and I want us to hit each other". ***Interviewer:*** "*Oh, and have you ever hit each other?* ***Nomie: "****With this one [current partner], no it hasn't happened. I've noticed that he holds back even when I try to provoke him so that we can fight he holds back a lot. So, I tend to push him so that he can get to the point where he hits me so that I can also hit him back. But he holds back and doesn't hit me. [laughs]. But with the others? like my ex. We used to fight a lot. When we would start fighting everything would be all over the place, you'd see this table turned upside down. Ah we would beat each other."*

Experiences of women living with HIV-IPV-MH syndemic

In our study, the women among the group who had experienced all three intersecting epidemics, spontaneously shared their experiences of childhood sexual abuse (CSA), which appears to have contributed to MH challenges in adulthood especially in situations where they disclosed to caregivers and were not believed. It must be noted however, that the lack of disclosure in the other groups, does not preclude the existence of CSA in the histories of the other women who did not disclose. Although we did ask participants about experiences of violence during childhood, we did not explicitly ask about sexual abuse. This could mean that

some participants may have chosen not to disclose such experiences. Nonetheless we did find that the MH challenges amongst this group were very severe. Lerato (24), reported:

"When I was living with my uncle and aunt it was not good. They used to abuse me. My uncle used to force me to have sex with him. He was abusing me. This river is where I used to go to be alone and wish that I could die. And in terms of the railway, I tried to tie myself with a rope and kill myself on the railway. But I didn't manage. And even now there are times when I still feel like this. Recently I even tried to kill myself."

When discussing her adult relationships, Lerato shared how she was in an abusive relationship with the father of her child*:*

"Ah that one used to hit me a lot. He would come home drunk and he would beat me. He didn't do anything for me and my son. I had to do everything for us" **Interviewer:** "*Is there anyone that you told about what was happening?"* Lerato: "*No, I didn't tell anyone. I'm not used to telling people about my problems because I generally don't trust people.*"

Sphe (28), who also had an experience of CSA, shared how the experience left her confused and experiencing severe MH challenges, she shared:

"This is when I was raped [pointing at drawing], I lived with the effects of the rape even though I didn't know or understand what rape was. My family kept telling me that I hadn't experienced what I knew I went through and that really traumatised me. I even started experiencing memory loss and when that happened it was like it validated them and they started saying I am crazy that's why I was accusing that boy of raping me. My life after that was not okay, I was constantly scared and paranoid."

Because of this experience Sphe was isolated from her family, which she believed made her susceptible to dating an abusive partner. When speaking about her partner Sphe recalled:

"Things between me and my partner started changing and I think they changed because he started learning more about my life and he found out that I am basically an orphan and I have nobody and I rely mostly on him. And that's when he became toxic" ***Interviewer:*** *"Can you tell me a little bit more about what you mean when you say that he was toxic?* ***Sphe:*** *"One day, he asked me why he has never seen anyone in my family coming to visit me in all the time that we had been dating and that's when I told him about my family background. I told him that I do have family but we aren't close and we don't visit each other. From there on he started changing as he realised that I am alone and that's when he became toxic and abusive."*

IPV-HIV syndemic

In relation to the IPV-HIV syndemic, although there was no direct link that didn't include MH challenges, we did find participants who made their own association, participants shared that they believed that they had contracted HIV because of their abusive partners who had been cheating on them incessantly, Silindile (38) expressed:

"You know, what hurt me the most when I first found out was because I felt like I didn't deserve to have this thing [HIV]. Two sexual partners in my whole life. The reality of this really hurt me… I was loyal to my partner. I mean you stay with someone and you tell yourself that you are committed but on the other hand you are with a partner who is running the streets. And then I discovered I was HIV positive."

Coping strategies

Participants from the different groups had varied ways of coping with living with the syndemic and other challenges in their lives. Some of the coping strategies included their own resilience and having the inner belief that they could overcome any obstacle. Religion and church also played a crucial role.

HIV-MH syndemic and coping strategies

Women living with the HIV-MH syndemic shared that a combination of self-reliance, family support, hope, and religious faith was how they coped. In terms of self-reliance, Rejoice (25) highlighted the significance of having to rely on herself to cope and overcome her adversities:

"*I guess the support system was mine. Yes, I had uncles and everything, but I believe that Rejoice helped herself out of this, even though somehow that hurt me, but it is also what kept me together to carry on."*

Furthermore, hope, coupled with a solid support system, was emphasized as a crucial component for coping by other participants. Xoli (23), who was born with HIV, and struggled with MH symptoms linked to depression spoke about her hope as well as the support she received from her family in helping her survive to this point*:*

"Having the hope that things will get better and being able to confide in my aunt and having her support... I have learned that I can overcome anything no matter how difficult it is."

For some of the women, religious faith and their trust in a higher power were instrumental in navigating their challenges. Their conviction provided both comfort and resilience amid adversity. Nelly (57), who not only contracted HIV from her husband but also grappled with the loss of a child and socio-economic challenges stemming from unemployment, leaned on her faith for comfort She expressed:

"In everything that I do, I say, God, you are the alpha and omega in my life, you will not forsake me. I know in the end you will make my life better."

IPV-MH syndemic and coping strategies

For women struggling with the IPV-MH syndemic, two primary coping strategies emerged: the use of substances as described earlier for women living with the HIV-IPV-MH syndemic as a means of escape and distraction and clinging to the hope of a brighter future. Londiwe (49), who suffered severe IPV at the hands of her husband, shared that she coped by being hopeful that things would change, she reflected,

"It was the hope that everything would eventually be fine. I hoped that one day things would turn out okay."

On the subject of substance use as way for mental detachment, Nomie (28) noted:

"I just drink at home; I drink and then I sleep. I usually drink if I want to distract myself and I just don't want to think. ***Interviewer:*** *"What do you want to distract yourself from?"* ***Nomie:*** *"Honestly, everything hey, relationships, life, work, everything. I sometimes feel like nothing is going right in my life. I try do this and it doesn't work out, then I try something else and it also doesn't work, so I find myself feeling discouraged. Usually if I don't drink, I'll end up smoking dagga. But I like dagga because when I smoke, I don't think about anything; I just sleep."*

IPV-MH-HIV syndemic and coping strategies

The women living with the IPV-MH-HIV syndemic, when probed on how they coped with these intersecting epidemics, shared that acceptance, an unwavering commitment to their children, and, for some, substance misuse as a means of temporary relief. Many participants conveyed that alcohol, albeit briefly, provided some form of escape from their lives. Lerato's (24) narrative paints a vivid picture of her struggle with her HIV diagnosis and her journey towards acceptance. She shared:

"I've accepted it because at the end of the day there is nothing, I can do about it".

When we probed deeper into the length of her acceptance journey, she touched upon the solace she sought in alcohol not only in relation to her diagnosis but also her childhood trauma experiences:

"It took a very long time. And during that time all I wanted to do was be at the tavern and drink because I didn't want to think about what had happened. I wanted to distract myself. I would just go to the tavern, drink and come back and pass out. If I passed out after a drunk night it was better because I wouldn't think about anything."

Diana (43) also shared her story, not only about living with HIV but also grappling with a childhood marred by abuse. The relative who fathered her first child had sexually assaulted her during her younger years. Further complicating her life was the consistent physical and emotional abuse she endured from her husband and the longstanding MH challenges that plagued her from childhood. In search of relief, Diana turned to alcohol. She recounted:

"He would hit me when he was drunk... Then I came back home and decided to never go back there. That was the time that I started drinking alcohol, I was too stressed. I gave my life away to alcohol, it felt as though what I was doing was the right thing. I felt good when drinking. I drank so much to a point that had I not stopped drinking, I would have been dead by now".

However, amid these challenges, the women's commitment to motherhood provided a sense of hope for them. Silindile highlighted this sentiment, asserting:

"I think it's my children that give me the go forward, because the last thing I want is for my children to struggle." Nokuthula (26) also shared the following when asked how she coped with her challenges, *"My children are the reason that makes me wake up every morning, raise my head, and say thank God for giving me another day to live. Then in my life, the people that I have as my priority, are my children and my brother".*

Overall, we found that acceptance was a cross-cutting coping strategy observed across all the different epidemic combinations. Nokuthula (26), who had experienced all three epidemics had the following to say:

"After being raped, the only thing I was scared of was a man. I did not want a man near me; they disgusted me. So, after getting raped for a second time, they ran tests on me, and that's where I found out that I have HIV. It became difficult for me to accept and live with it. It was difficult, very difficult. But as time went by, I decided and accepted that I am living with this

thing for the rest of my life and to accept what that man did to me, so why should I be miserable because of it? I think I have to live with the fact that I am HIV positive and I contracted this through rape, and I won't change it."

Moreover, Xoli (23) who was living with the HIV-MH syndemic, shared how she had to accept her diagnosis,

"It has really affected my family because my younger sister and I were born with HIV. At first it was difficult to accept, but eventually I accepted that I have to take my medication and go to the clinic in order to live longer."

Finally, Cindy (49), who was living with the IPV-MH syndemic, shared that when she was being abused by her husband, what helped her cope was hope that he would change as well as acceptance of the situation because of her dependence on him, she reported:

"I hoped that one day things would turn out okay. I was afraid to go to social workers or the police because I didn't want him to get arrested because if he got arrested what would we eat. In life you have to accept everything that happens to you. You have to accept and let it pass and understand that this is life."

Our findings showed that substance use was more commonly mentioned in the combinations involving IPV, whilst hope, self-reliance, family support, and religious faith were prominent coping strategies in the HIV-MH syndemic.

Discussion

The experiences of women living with the HIV, IPV, and MH syndemic are complex. The study identified intersections and the synergistic interactions between HIV-MH, IPV-MH, and the relationship between IPV-HIV-MH. Our findings suggest that HIV, IPV and MH challenges interact in ways that exacerbate the severity and impact of each condition and we therefore propose that the co-occurrence of these epidemics constitutes a syndemic. Notably, beyond substance use, other MH challenges were evident among the participants, warranting an expansion of the SAVA syndemic concept. We found that among participants living with the HIV- MH syndemic, an HIV diagnosis was met with denial, symptoms related to depression, anxiety and suicidality and delayed treatment initiation. In the IPV-MH syndemic group, participants reported symptoms related to anxiety and depression in relation to the abuse they experienced, participants also reported a bi-directional relationship between IPV and MH with IPV worsening MH and MH challenges increasing women's vulnerability to IPV. Participants experiencing all three epidemics reported a history of CSA, which was

associated with MH challenges over their life course and experiences with IPV from past and current partners. Participants coped with their circumstances mostly through acceptance of the situation and religion, while others used excessive substance use to help them cope and detach. In the groups where IPV was not present, participants relied on family, friends, religion and other social support.

The experiences of women living with the HIV-MH syndemic

In the HIV-MH interaction, the syndemic nature is evident. We found that an HIV positive diagnosis often triggered MH symptoms linked to depression and anxiety among participants and in many cases also exacerbated the symptoms. This was particularly apparent especially in cases of vertical HIV transmission where maternal guilt, which was often intensified by internalized stigma significantly increased the risk of severe MH challenges such as suicidal ideation. This complex interplay aligns with findings from KwaZulu Natal study which identified a significant prevalence of suicidal ideation among pregnant women diagnosed with HIV (T. J. Rochat et al., 2013). Additionally research from Mpumalanga reported that the factors associated with suicidal ideation among HIV positive pregnant women included, major depression, partner disclosure status, stigma, age, and partner aggression (T. J. Rochat et al., 2013; V. J. Rodriguez et al., 2018; Zegeye et al., 2018). Despite the existing research on HIV positive pregnant women and suicidal ideation, our study identifies a gap in the literature specifically related to maternal suicidal ideation in the context of vertical transmission.

Furthermore, the current study is unique in that it emphasizes the role of internalized stigma within the syndemic. Our findings show that internalized stigma not only amplifies the maternal guilt often associated with vertical transmission but it also intensifies overall MH challenges faced by people living with HIV. Evidently despite the advancements in HIV treatment as well as widespread prevalence, HIV stigma still persists. This finding is significant as it highlights the importance of tackling the medical aspects of HIV, as well as the societal and psychological barriers such as stigma, which significantly contribute to these complex intertwined epidemics.

Moreover, many participants in this group reported initial feelings of overwhelming fear of death and denialism, which led to delays in seeking HIV treatment. Evidently the psychological impact of an HIV diagnosis exacerbated their MH challenges, which in turn

impeded them from seeking timely medical intervention. This is in line with other research which has found a positive relationship between poor MH and delayed medical intervention (Rane et al., 2018). Such findings highlight the need for psychological screenings alongside HIV testing. Incorporating psychological screenings alongside HIV testing presents multiple advantages. Firstly, it could enable early identification and management of potential MH challenges and as result possibly averting the worsening of both mental and physical outcomes. Secondly, the screening could also serve to address the psychological barriers such as anxiety, fear and denialism that often hinder timely HIV treatment (Rane et al., 2018). By implementing psychological screening as part of HIV testing, this can mitigate the syndemic impact of these health challenges.

The experiences of women living with the IPV- MH syndemic

Women experiencing the IPV-MH syndemic often displayed symptoms indicative of anxiety and depression. For some participants these MH challenges existed before their IPV experience. This aligns with prior research indicating that pre-existing MH challenges can predispose individuals to IPV victimization (K. Devries et al., 2017; Williams et al., 2008b; Woollett & Hatcher, 2016). Conversely for other participants IPV was a salient trigger or exacerbated MH challenges, creating a cyclical relationship where IPV and MH challenges intensify each other. This bidirectional relationship where each condition aggravates the other is indicative of a syndemic. The MH repercussions of IPV have been thoroughly reported on in the literature, with conditions ranging from PTSD and depression to anxiety and eating disorders [53, 55, 56]. Evidently the relationship between IPV and MH goes beyond co-occurrence. When these two epidemics intersect, they also mutually exacerbate the other, often resulting in a compound impact on the women.

The HIV-IPV intersection

In the present study, we didn't find an exclusive overlap between IPV and HIV, as all participants reported concurrent MH challenges. It appeared that any existing IPV-HIV connection was invariably connected with MH challenges. Research indicates that an HIV diagnosis can increase stress at both the individual and relationship level. This heightened stress can adversely impact women's mental health, potentially increasing their vulnerability to becoming involved in an abusive relationship [9, 57]. Other studies indicate that the influence of HIV on IPV is notably accentuated in women already struggling with IPV in

their relationships, as their partners, often with a heightened antisocial disposition, might react more aggressively to an HIV diagnosis disclosure (Sulivan, 2019).

While we did not find evidence of a standalone IPV-HIV overlap, the data consistently highlighted the omnipresence of MH challenges, intersecting with the other two epidemics. A deeper look at the experiences of women living with the IPV-HIV-MH syndemic is critical at this point.

The experiences of women living with IPV-HIV-MH syndemic

Among this group of women with the IPV-HIV-MH syndemic, a prominent shared experience was the history of CSA. The trauma from CSA has been identified as a potential precursor to adult MH challenges, given its long-lasting detrimental effects on psychological well-being (Bulik et al., 2001; Herbert et al., 2021; Scoglio et al., 2021). Many of the participants reported symptoms indicative of depression, anxiety, and suicidality, which align with previous findings on the profound impact of CSA on survivors' psychosocial development (Bulik et al., 2001; Fergusson et al., 2013).

Furthermore, research indicates that CSA survivors face an elevated risk of sexual revictimization in later life, including within stable relationships (Dube et al., 2001). This revictimization can manifest as various forms of IPV, such as psychological and physical abuse (Herbert et al., 2021). The latter indicates a cyclical pattern where early trauma can lead to MH challenges which in turn increase vulnerability to IPV (Williams et al., 2008b).

Regarding the HIV component, while none of the participants directly linked their HIV diagnosis to violence, some believed that their acquisition resulted from their abusive partners' extramarital affairs. This perspective underscores the intersectionality of these epidemics: the compounded vulnerabilities from CSA and MH challenges potentially leading to relationships characterised by IPV, and within these relationships, an increased risk of contracting HIV.

It must be noted, however, that these relationships are not strictly linear but bidirectional. For instance, while CSA can predispose individuals to MH challenges (Fergusson et al., 2013), which might then lead to violent relationships and an elevated HIV risk (Herbert et al., 2021; Sulivan, 2019), the reverse can also hold true. MH challenges might manifest first, making the child more susceptible to CSA. Similarly, an HIV diagnosis might precipitate or exacerbate violence in relationships (Sulivan, 2019). Recognizing this intricate web of

bidirectional influences underscores the need for a nuanced and multifaceted approach to understanding and addressing the overlapping epidemics faced by these women.

Coping Strategies

According to Lazarus and Folkman (1984) two primary coping modalities can exist: problem-focused and emotion-focused coping (Biggs et al., 2017). The former encompasses efforts to alter the environment or the problem itself, while the latter aims to alleviate emotional distress (Biggs et al., 2017). Most of our participants leaned towards emotion-focused coping strategies. The coping strategies used by women living with different combinations of the IPV, HIV and MH syndemic revealed several patterns and similarities. Acceptance emerged as a cross-cutting coping strategy observed across all combinations. Participants in the HIV-MH group expressed religion and belief in God as important in coping with challenges. Additionally, substance use was commonly mentioned in combinations involving IPV. Furthermore, the reliance of social support to cope was found in the groups who did not experience IPV. Research focusing on coping strategies among women dealing with IPV revealed that victims found their families, friends, and neighbours to be supportive and reliable resources for assistance (Sere et al., 2021). Our study, however, did not find that participants experiencing IPV relied on family and social support structures as a way of coping, in such situations. Some theories have posited that the reason for this could be that often in IPV situations the perpetrator is likely to isolate their partner from their friends and family (Goodson & Hayes, 2021).

The notion of acceptance although cross-cutting across the groups, its manifestation differed based on the unique combination of adversities each participant faced. When considering HIV and acceptance, our findings resonate with prior research in the field. For example, a study by Sreelekshmi (2015) involving 150 HIV-positive individuals highlighted the prevalent use of emotion-focused coping techniques (Sreelekshmi, 2015). A significant 65.7% of participants identified acceptance as their primary coping approach. However, for some participants who had experienced IPV, the acceptance conveyed often leaned towards resignation. This type of acceptance was deeply entrenched in feelings of desolation and helplessness. Moreover, in the literature, acceptance in the face of IPV has also been characterised as a form of denial or avoidance which is often linked to PTSD symptomology

(Chadambuka, 2022; Foster et al., 2015; T. J. Rodriguez, 2011). On the other hand, there were some participants that seemed to have accepted and normalized the violence. In relation to the latter, research has also found that in some contexts young women may perceive violent men as more desirable partners and as being real men, in such situations, IPV is not only normalized but is also seen as a necessary component in romantic relationship (Hunt et al., 2023; Zembe et al., 2015).

As mentioned, substance misuse, especially in the context of IPV was a recurrent theme amongst participants. This observation is echoed by Mehr et al. (2023), who define substance misuse as the consumption of substances in high quantities or inappropriate contexts (Mehr et al., 2023). Their research highlights that those subjected to IPV frequently resort to substance misuse as a way to manage the emotional and physical trauma they endure and as a form of self-medication. Our findings are in line with this, particularly among women who had experienced the combinations including IPV. Our findings add and expand to the literature on coping strategies among women living with the different combinations of HIV, IPV and MH epidemics, as we not only identified which strategies were more prevalent but also how their manifestations differed based on the unique combinations of epidemics each woman faced.

Understanding how women cope with these often-co-occurring epidemics is imperative as it provides an opportunity to better inform clinical practice, as well as contribute to the development of comprehensive, evidence-based strategies for prevention, support, and treatment. Furthermore, our findings also highlight the significance of considering the impact at the community and interpersonal levels in IPV research. They also affirm the perspective that IPV should be treated as a communal issue rather than an individual problem.

Limitations

Although the current study provides valuable insights, it is not without its shortcomings and limitations. The first limitation is related to translation of the interviews. Some researchers argue that translation during the research process has the potential to introduce a level of bias as translation involves some subjective interpretation (Edwards, 1998). It includes cultural interpretation and an understanding of the context, and herein is where the bias is often introduced (Hodges, 2016). It is thus critical to incorporate ethical translation practices in research to limit such biases. These include using translators who are not only proficient in the language but are also familiar with the context and the environment. (Qoyyimah, 2023).

For the current research, interviews were conducted in Siswati and Xitsonga and subsequently transcribed and translated into English. Though this posed a potential limitation as some nuances may have been lost in translation, efforts were made to ensure accuracy and preserve the essence of the participants' responses. The measures included, having transcribers who were fluent in the language the interview was conducted in as well as English. Secondly the interviewers were also familiar with the community, with two of the interviewers having worked in the area for over a decade on various other research projects. Finally, in cases where there was no direct translation for a particular word or phrase, an explanation in English was provided in brackets.

Another limitation concerns the method used for categorizing participants into different epidemic combinations. While this approach initially provided a structured framework for analysis, it might have introduced some degree of arbitrariness, where in some cases some participants may not have met the criteria of the questionnaire leading them to not being categorized as experiencing a particular MH challenge. However, to refine this categorization, we re-categorized the groups, based on the information gathered from the qualitative interviews. For example, participants not initially flagged for MH challenges in the questionnaire but who later revealed symptoms indicative of such during the interviews were re-categorized accordingly. This additional layer of categorization aimed to capture more accurately the complexities of each participant's experiences.

Although there is much debate about what constitutes as sensitive research, according to Lee and Renzetti, any topic can be deemed as sensitive, however there are some topics that are likely to cause more distress in individuals than others such as HIV/AIDS, MH issues, death and bereavement (Davis et al., 2004). Research on personal experiences of violence and childhood trauma can be classified as sensitive (Fraga, 2016). The sensitive nature of the topics discussed in the interviews may have influenced the participant’s willingness to fully share and be open, thus leading to potential underreporting due to discomfort or fear of stigma. To address this, interviewers assured participants of the confidentiality of their responses, and assurance that they would receive help if they felt distressed during the interview. Ensuring participants anonymity and confidentiality increased the likelihood of participants providing more truthful and genuine responses (Kang & Hwang, 2023).

Reflexivity in qualitative research is imperative, this involves the ongoing, cooperative and multifaceted activities where researchers actively critique and assess the ways in which their

personal perspectives and backgrounds can potentially affect the research (Olmos-Vega et al., 2023). We acknowledge that our personal beliefs, cultural understanding, and personal experiences may have shaped our interpretation as well as the presentation of the participants' stories and as a result potentially introducing subjective biases. As an attempt to mitigate this, the research team had regular debriefing sessions throughout the study, where we discussed and challenged each other's viewpoints, which helped in ensuring a more balanced perspective on the data. Furthermore, the interviewers also kept detailed field notes after the interviews which were reflective accounts of the interviews including the interviewer thoughts and reactions to the interview.

Furthermore, the potential for response bias due to the interview-led nature of the interviews was another limitation. However, to mitigate this, experienced qualitative interviewers were used and trained to maintain neutrality and foster a non-judgmental and supportive environment.

Finally, while the study's focus on the South African peri-urban and rural context provides in-depth and context specific insights especially due to the limited data in such settings, this also implies that the findings may not be directly transferable to other settings. The experience of women in this specific context are shaped by unique socio-cultural, economic, and environmental factors which may differ significantly from those in other provinces or countries.

Despite the limitations outlined, the study holds substantial value, particularly in understanding the experiences of women in South African peri-urban and rural contexts. It also lays a foundation for further research, suggesting the need for more studies with diverse samples to broaden the understanding of these complex experiences in varied settings.

Implications of the research and next steps

The findings of the current study highlight the importance of addressing the interconnected epidemics of HIV, IPV and MH in a comprehensive and integrated manner. A key implication is the need for holistic care approaches that are geared towards tackling these interlinked epidemics rather than treating them in isolation. A holistic approach has the potential to improve prevention and response strategies, ultimately contributing to beneficial outcomes in public health (Tsagkarliotis & Rachaniotis, 2023). A good example of this is the SHARE

multicomponent intervention in Uganda which has effectively managed to reduce HIV incidence and IPV in women (Wagman et al., 2015) .

Furthermore, taking into consideration the diversity in coping strategies observed in the participants, there is a need to support positive coping strategies while providing targeted interventions for harmful coping strategies such as substance misuse among women living with the syndemic. An example is the coping strategies intervention implemented at the ART clinic of the All-India Institute of Medical Science in New Delhi. The intervention aimed to enhance positive coping mechanisms and quality of life among people living with HIV through informational support, adaptive coping strategies, social support, and positive living (Khakha & Kapoor, 2015).

Furthermore, our study highlights the importance of considering the unique contexts and backgrounds of individuals when designing and implementing public health interventions. In particular, the role of cultural and socio-economic factors in shaping the experiences of HIV, IPV and MH epidemics requires context-specific strategies.

Moreover, the high prevalence of MH challenges identified in the current sample highlights a need for enhancement of MH care especially in peri-urban and rural areas, where MH services are close to non-existent (Mehr et al., 2023). Strengthening MH services in these areas would serve as a critical aspect in addressing the syndemic effectively. Research highlights the importance of community-based MH interventions as pivotal especially in low-resource communities. For instance, Malawi has integrated their Health Surveillance Assistants to deliver MH interventions into the community's already existing social and cultural structures (J. Wright, 2021). Similarly, in South Africa there is an ongoing effort through the Mental Health integration program aimed at enhancing integration of MH services in the primary health care system. However, despite the innovativeness of this program, the effectiveness is significantly hindered by inadequate funding, poor administrative coordination and low MH awareness among officials and the general population (Lovero et al., 2019).

Future research should focus on the development of interventions that can address the co-occurrence and the multi-faceted nature of these epidemics. This includes the exploration of the efficacy of integrated care models and the potential of Mobile-health solutions in increasing accessibility to MH and support services, especially in resource limited settings.

There is also a need for more qualitative research on the IPV, MH and HIV syndemic. Whilst there is an abundance of quantitative research in this area (Levendosky et al., 2003; Murphy et al., 2010; Sherr et al., 2016; I. B. Thurston et al., 2021), qualitative research is critical in providing a deeper and more nuanced understanding of the syndemic.

Conclusion

Our study highlights the intricate hardships faced by women navigating combinations of HIV, IPV, and MH epidemics and how the combination of epidemics worsens each of these. MH challenges were a consistent factor, whether associated with HIV, or IPV. A deeper understanding into these women's multifaceted experiences is vital for developing targeted strategies that address their specific needs, thus enhancing their overall quality of life.

Chapter 6: Qualitative Results

Silima, M., Christofides, N., Franchino-Olsen, H., Woollett, N., Meinck F., (2024) "Qualitative study exploring parenting among mothers and female caregivers living with the IPV, mental health and HIV syndemic in South Africa" BMJ Open https://doi:10.1136/bmjopen-2024-086478

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Qualitative study exploring parenting among mothers and female caregivers living with the IPV, mental health and HIV syndemic in South Africa

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Abstract

Background: In South Africa, women disproportionately bear the burden of intimate partner violence (IPV), HIV or AIDS, and poor mental health.

Objective: This study investigated parenting practices among women affected by IPV, HIV and poor mental health syndemics.

Study setting: The study was conducted in two sites, a peri-urban area and a rural area in Mpumalanga, South Africa.

Study design: A qualitative research design using a narrative approach with in-depth interviews supported by arts-based methods was used. Data were analysed thematically using MAXQDA (2022).

Participants: 20 women aged 20-60 who screened positive for HIV, IPV and/or poor mental health in a larger three-generational cohort study were selected.

Results: Living with the syndemics exacerbated socioeconomic challenges that often translated into an inability to meet basic child needs. Socioeconomic challenges also led to more harsh parenting practices among women living with IPV-Mental Health and HIV-Mental Health syndemics. Due to lack of trust from family members, women living with the HIV-Mental Health-IPV syndemic were often separated from their children. These women exhibited less harsh parenting practices than the women in the other syndemic groups when they did see their children. A history of childhood trauma, leading to overprotective parenting, was common across the groups except for the IPV-Mental Health group. Women in the IPV-Mental Health group often had strained relations with their children's fathers, affecting their engagement and connection with their children.

Conclusion: The study underlines challenges experienced by women with IPV-Mental Health, HIV-Mental Health and HIV-Mental Health-IPV syndemics. The overlap of these epidemics strains women's relationships and affects women's parenting practices detrimentally resulting in an inadequate provision for children's needs.

Keywords: Caregivers; HIV & AIDS; MENTAL HEALTH.

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Chapter 6

A qualitative study exploring parenting among mothers and female caregivers living with the IPV, mental health and HIV syndemic in South Africa

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Abstract

Background: In South Africa, women disproportionately bear the burden of intimate partner violence (IPV), HIV or AIDS, and poor mental health. **Objective:** This study investigated parenting practices among women affected by the IPV, HIV and poor mental health syndemics. **Study Setting:** The study was conducted in two sites, a peri-urban area and a rural area in Mpumalanga, South Africa. **Study Design:** A qualitative research design using a narrative approach with in-depth interviews supported by arts-based methods was used. Data were analysed thematically using MAXQDA (2022). **Participants:** Twenty women aged 20-60 who screened positive for HIV, IPV and/or poor mental health in a larger three-generational cohort study were selected. **Results:** Living with the syndemics exacerbated socio-economic challenges that often translated into inability to meet basic child needs. Socio-economic challenges also led to more harsh parenting practices among women living

with the IPV-Mental Health and HIV-Mental Health syndemics. Due to lack of trust from family members, women living with the HIV-Mental Health-IPV syndemic were often separated from their children. These women exhibited less harsh parenting practices than the women in the other syndemic groups when they did see their children. A history of childhood trauma, leading to overprotective parenting, was common across the groups except for the IPV-Mental Health group. Women in the IPV-Mental Health group often had strained relations with their children's fathers, affecting their engagement and connection with their children. **Conclusion:** The study underlines challenges experienced by women with the IPV-Mental Health, HIV-Mental Health, and HIV-Mental Health-IPV syndemics. The overlap of these epidemics strains women's relationships and affects women's parenting practices detrimentally resulting in an inadequate provision for children's needs.

Keywords: HIV/AIDS; Mental Health; Intimate Partner Violence; Parenting; South Africa

Strengths and limitations

1. The use of arts-based methods allowed for deeper and detailed discussions and open conversations around highly sensitive topics.
2. The quantitative study's earlier initiation allowed trust to be established with participants a year before the qualitative study, making it easier to build rapport during the qualitative phase.
3. Sensitive nature of the topics being discussed may have led to lack of disclosure in some instances.

4 Although validated scales for mental health were used to identify participants with poor mental health, this approach may have included individuals who endorsed symptoms but did not meet the strict cut-off criteria for a specific mental health challenge. This could have led to some misclassification.

Introduction

In South Africa, women disproportionately bear the burden of HIV, intimate partner violence (IPV), and poor mental health, which can significantly affect their parenting (R. Jewkes & Dunkle, 2010; Nguse & Wassenar, 2021; UNAIDS, 2020). Syndemic theory offers a lens to understand how these overlapping epidemics interact and amplify health burdens (Singer, 1996). This theory posits that multiple comorbidities, fuelled by structural and environmental factors, have a synergistic effect that worsens the overall health impact on a population more than the sum of individual conditions (Singer, 1996). Singer's early work on syndemic theory primarily focused on the co-occurrence of substance abuse, violence, and AIDS (SAVA) among marginalized communities in the United States(Singer, 1996). The current study expands on SAVA to include poor mental health. This expansion is not new, as Tsuyuki and colleagues (2017) studied the syndemic of substance use disorder, violence, and mental health among HIV-infected individuals (Tsuyuki et al., 2017). However, very little research has investigated the impact of these syndemics on parenting practices.

Conceptual Framework: IPV, Mental Health and HIV as a syndemic

Existing literature confirms the frequent co-occurrence of the IPV, poor mental health and HIV epidemics (Hatcher et al., 2015; Hossain et al., 2023; Lachman et al., 2014; Woollett & Hatcher, 2016). The relationship between HIV and poor mental health is bidirectional, meaning that HIV can lead to poor mental health outcomes, and poor mental health can increase the risk of acquiring HIV (Remien et al., 2019; Weiser et al., 2011a). The high prevalence of poor mental health conditions among people living with HIV is often associated with poorer physical health, lower quality of health services, and poor adherence to antiretroviral treatment (ART) (Kidia et al., 2015; Meade & Sikkema, 2005; Woollett et al., 2017). Furthermore, having poor mental health can increase the risk of HIV acquisition through both direct and indirect mechanisms (Centers for Disease Control and Prevention, 2015). Adolescents and adults with serious mental illnesses who are sexually active may be more likely to engage in high-risk behaviours, including inconsistent condom use, having multiple sexual partners, engaging in transactional sex and consuming alcohol before sex, which may increase the likelihood of unprotected sex (Abayomi et al., 2013; Bonfils et al., 2015; Guimarães et al., 2014). Additionally, IPV can precipitate mental health challenges such as PTSD, anxiety, depression,

suicidal thoughts, and substance use disorder (Baker et al., 2021; Beydoun et al., 2012; S. J. Brown, Mensah, et al., 2020; Charak et al., 2021; Gibbs et al., 2018). Studies have shown that women experiencing IPV are at higher risk of developing these mental health challenges due to the chronic stress and trauma associated with ongoing abuse, as well as the possible isolation from social support systems (K. Devries et al., 2013, 2019; Herbert et al., 2021). Conversely, poor mental health can make individuals more susceptible to IPV due to factors such as low self-esteem, emotional dependency, and difficulty recognizing abusive behaviours (Khalifeh et al., 2015; Martin et al., 2006). Moreover, the relationship between IPV and HIV involves both biological and socio-cultural pathways (Rigby & Johnson, 2017). Biologically, forced or coercive sexual intercourse with an HIV-infected partner can lead to HIV and other sexually transmitted infections (Durevall & Lindskog, 2015). Socio-culturally, violence and the fear of violence compromises the women's ability to negotiate condom use, which can lead to inconsistent condom use and thereby increase HIV risk (Zembe et al., 2015).

An important aspect of syndemic theory is that structural and environmental factors impact the disease clustering and often exacerbate the syndemic conditions (Singer, 1996; Tsai & Burns, 2015). These include poverty, gender inequality, stigma, and lack of access to resources and services that could improve the health and wellbeing of individuals (Mendenhall & Singer, 2020a; Singer et al., 2017b). Financial stress and lack of resources can exacerbate mental health challenges, due to the higher levels of stress as a result of financial insecurity, job instability, and poor living conditions, which are significant risk factors for depression and anxiety (Ardington & Case, 2010). Furthermore, financial dependence on a partner can significantly reduce one's bargaining power within the household making it difficult to leave an abusive situation (Chisholm et al., 2016). In addition, people living in poverty may engage in risky sexual behaviours to meet their basic needs, which can elevate their risk of contracting HIV (Bandali, 2011; Trickey et al., 2024). Cultural factors, such as gender norms and expectations, also influence the epidemics (Macleod-Downes et al., 2008; Perrin et al., 2019; Sia et al., 2016). For instance in many societies, traditional gender roles can reinforce power imbalances, making women more vulnerable to IPV and less able to negotiate safe sex practices, increasing their risk of HIV (Sia et al., 2016). Additionally, stigma associated with IPV, poor mental health, and HIV can hinder individuals' willingness to seek help and adhere to treatment leading to further isolation, untreated conditions, and exacerbation of both physical

and mental health challenges (Cloete et al., 2022; Kakuma et al., 2010; Kalichman et al., 2009).

Other factors, such as adverse childhood experiences, can also increase the risk of the co-occurrence of the epidemics. Additionally, adverse maternal experiences in childhood not only elevate the risk of poor mental health in adulthood but also increase the likelihood of experiencing IPV and acquiring HIV (Herbert et al., 2021; Scoglio et al., 2021), which, as previously noted, significantly impact parenting practices. Child sexual abuse is alarmingly prevalent in South Africa (Ward et al., 2018b). A nationally representative cross-sectional study among 5631 households found that 9.99% of boys and 14.61% of girls reported experiencing sexual violence in their lifetime, with physical abuse, emotional abuse, and neglect strongly associated with sexual violence (Ward et al., 2018b). Trauma from child abuse is a significant factor contributing to adult mental health challenges such as PTSD, depression, and anxiety (Herbert et al., 2021; Scoglio et al., 2021; Ward et al., 2018b). The mental health challenges as a result of the abuse may increase the survivors' risk of being involved in violent relationships and as a result elevate their HIV risk (Herbert et al., 2021; Sulivan, 2019). Survivors of abuse often struggle with establishing healthy relationships due to the trauma, which can lead to low self-esteem, emotional dependency, and difficulty in setting boundaries (Herbert et al., 2021). This dynamic, combined with the impaired ability to negotiate safe sex, significantly heightens the risk of HIV infection among these individuals (Sulivan, 2019).

Parenting practices among women living with the HIV, IPV, and Poor Mental Health syndemic

Parenting is influenced by various factors, including the characteristics and experiences of parents and the context in which they are raising their children (Ulferts, 2020). Mothers living with HIV encounter unique challenges (Sherr et al., 2017; Silima et al., 2024a). Some evidence indicates a heightened risk of psychiatric vulnerability among women with HIV, especially in sub-Saharan Africa (Brandt, 2009), which is exacerbated by disease-related stress and structural challenges such as poverty (Bachmann & Booysen, 2006; Kalichman & Grebler, 2010), gender inequity (Brandt, 2009), and limited mental health services.(Saxena et al., 2007) Maternal HIV can negatively impact both infected and uninfected children's developmental, psychological, and physiological well-being (Chandan & Richter, 2009b).

These adverse outcomes arise partly from compromised parenting due to maternal stress and mental health deterioration, potentially leading to neglect or aggression towards the child (Murphy et al., 2010). This is especially significant in sub-Saharan Africa, where 1.36 million pregnant women were living with HIV as of 2010 (Allen et al., 2022).

IPV further complicates the parenting landscape. High rates of IPV among heterosexual couples indicate that many children are raised in households where one parent is perpetrating violence against the other, in most cases it is the male partner against the female caregiver(Chung et al., 2021). Early exposure to IPV negatively impacts children's mental health, resulting in trauma, depression, and anxiety (Committee on Psychosocial Aspects of Child and Family Health, Committee on Early Childhood, Adoption, and Dependent Care, and Section on Developmental and Behavioral Pediatrics et al., 2012; Shonkoff et al., 2012). A meta-analysis of 118 studies revealed a 50-63% likelihood of children developing internalizing problems and clinical disorders due to violence exposure(Kitzmann et al., 2003). IPV impacts children's emotional regulation and introduces environmental stressors that may result in mood swings and low self-esteem among the children, thereby making the parenting experience more difficult (Cater et al., 2015; Haj-Yahia et al., 2021). Additionally, mothers experiencing IPV are more likely to resort to harsh discipline, sometimes escalating to physical abuse, both to placate their abusers and as a result of displaced aggression (Anderson & Van Ee, 2018). The emotional toll, often manifesting as depression, affects the quality of mother-child interactions and can erode mothers' confidence in their parenting capabilities (Chiesa et al., 2018; Levendosky & Graham-Bermann, 2001).

Poor mental health adds another layer of complexity to parenting. Maternal depression is significantly associated with more hostile and harsh parenting (Meinck, Cluver, et al., 2017; Silk et al., 2009). With 10-20% of women experiencing depression in their lifetime and more than 30% having persistent depressive symptoms (Elgar et al., 2007; Williams et al., 2008b).

It must be noted, although HIV, IPV, and poor mental health can lead to harsh parenting, there are protective factors that can buffer these socio-emotional outcomes. Resilience, social protection, and the ability of some mothers to act as emotional anchors during moments of violence or distress can mitigate the impact of IPV (Graham-Bermann et al., 2007; Rotheram-Borus et al., 2012). For mothers living with HIV and poor mental health, access to antiretroviral therapy, social support, and effective mental health services can improve

parenting quality and mitigate negative impacts on children (Tengku Mohd et al., 2019; J. Wang et al., 2018).

The cultural significance of parenting in South Africa

Parenting practices in South Africa are deeply influenced by cultural norms and values (Miljof et al., 2020). The extended family often plays a crucial role in parenting, with grandparents, aunts, uncles, and older siblings actively involved in the upbringing of children (Hatch & Posel, 2018; Miljof et al., 2020; Statistics South Africa, 2023a). According to Statistics South Africa (2023), households with more than four children are more likely to have children cared for by extended family members (84.5%). Furthermore, the same survey found that a fifth of all children did not live with both their parents, and most children lived with only their mothers and other extended family members (42.0%) (Statistics South Africa, 2023a). This collective approach to parenting is rooted in the African concept of "Ubuntu," which emphasizes compassion for others and the interconnectedness of all people (Berg, 2012). Traditional gender roles also influence parenting, with women generally seen as the primary caregivers responsible for day-to-day nurturing and education of children, while men provide financial support (Hatch & Posel, 2018). Fragmented families in South Africa can be attributed to labour migration and low marriage rates especially among African women, who are also less likely to live with the child's father if they are not married (Hall et al., 2012; Hatch & Posel, 2018). The historical and socio-political context of South Africa, particularly the legacy of apartheid and ongoing socio-economic challenges, significantly shapes parenting practices(Roman et al., 2016). The psychological impact of the apartheid-era trauma has affected parenting as parents who experienced trauma may struggle with emotional regulation, influencing their ability to engage in consistent and nurturing practices (Roman et al., 2016). Additionally, during colonialism, corporal punishment was institutionalized as a method of maintaining order and discipline in both schools and homes (Ferrari, 2002). As a result, many South African homes today still view corporal punishment as integral to teaching children respect for authority and obedience (Ferrari, 2002; Motau, 2019). Despite the legislative ban on corporal punishment, many mothers continue to practice this form of parenting (Sloth-Nielsen, 2020). A qualitative study found that parents disagreed with the law and held positive attitudes towards corporal punishment, viewing it as effective for disciplining children (Motau, 2019). Mothers often used corporal punishment to correct children's behaviour, lacking knowledge of alternative disciplinary methods(Motau, 2019).

The use of corporal punishment is deeply embedded in cultural and historical contexts, passed down through generations as a normative practice (Motau, 2019).

Present Study

The current study aims to explore parenting among women living with the different syndemics (specifically, HIV-Mental Health; IPV-Mental Health; and HIV-Mental Health-IPV) and how these syndemic conditions influence parenting practices. This research moves beyond examining each syndemic in isolation to highlight how their interrelated and compounded effects further complicate parenting. In a context where millions of children and mothers grapple with these complex epidemics, a nuanced understanding of these interactions offers valuable points for targeted interventions.

Methods

Study Design

The study employed a qualitative study design using a narrative approach. A narrative approach focusses on exploring the stories of individual's experiences as narrated by the participants themselves in their unique contexts and environment (Ntinda, 2018). The basis of the approach is that people's narratives provide a rich and nuanced insight into their life experiences (Ntinda, 2018). The use of qualitative methods allowed for a comprehensive exploration of how participants, living with the intersecting epidemics of HIV, IPV, and poor mental health, approached parenting and how these epidemics influenced their parenting experiences.

Study Setting

We conducted the study in two sites within Mpumalanga Province, South Africa, from October 2022 to February 2023. In 2022, Mpumalanga Province reported an estimated population of approximately 4,720,497 people (Statistics South Africa, 2022a). The primary languages spoken include siSwati (27.67%), isiZulu (24.1%), Xitsonga (10.4%), and isiNdebele (10%) (South African High Commission (Ottawa), 2019). In 2019 there were 1.26

million people living in poverty across the district (Department of Cooperative Governance & Traditional Affairs, 2020), with high levels of unemployment at 36.69% (Department of Cooperative Governance & Traditional Affairs, 2020). Recent data based on a population-based household survey indicated an HIV prevalence of 20.8% among adults aged 15 years and above (Human Sciences Research Council, 2023), with approximately 38% physical IPV prevalence among girls and young women in Mpumalanga (Leddy et al., 2019). Furthermore, data analysis conducted on a sample of 4,351 adult South Africans from various ethnic groups indicated a lifetime prevalence estimate of all common mental disorders, with Mpumalanga at 29.2% (Herman et al., 2009). Additionally, the study location has a notable lack of mental health services, within only one clinic offering counselling services and one psychologist available within this facility.

Sample

A purposive sampling approach was used to recruit twenty women between the ages of 20 and 60 years, using specific survey items from the Interrupt_Violence Study as the screening criteria (Meinck et al., 2023). These survey items assessed participants' experiences with HIV, poor mental health, and IPV. The inclusion criteria required the women to have experiences with at least two of the three epidemics: IPV, poor mental health or HIV. The experiences of IPV could be current or past, while poor mental health needed to be current. Poor mental health was assessed using several tools: the four-item Ask Suicide Screening Questions (ASQ) (Horowitz et al., 2012), the seven-item Generalized Anxiety Disorder Questionnaire (GAD-7) (Löwe et al., 2008); the nine-item Patient Health Questionnaire (PHQ-9) for depression (Adewuya et al., 2006) and the 8-item Post Traumatic Stress Disorder Questionnaire (PTSD-8) (Hansen et al., 2010). For IPV, participants had to respond “yes” to any of the questions in the World Health Organization instrument (Garcia-Moreno et al., 2005), for physical, emotional and sexual violence victimization experiences. HIV status was either self-reported by the participant or assessed through voluntary HIV testing conducted by the fieldworker. Additionally, participants had to self-identify as caregivers for a child or children under the age of 17. This was determined by asking participants in the survey, “For how many children are you a caregiver for like a parent?” Participants who answered more than zero were further asked about their relationship with the child, with common responses being mother, aunt or grandmother. Men were not included in the study because it is usually

women who are the primary caregivers for children in South Africa and who are disproportionately affected by the epidemics under investigation

Patient and public involvement

The research question and aims of the current study were informed by the priorities, experiences of the participants in the community. The findings from the main study, which was a longitudinal study found that the adolescents that were initially interviewed had experiences of violence and subsequent mental health challenges. These findings informed the follow up research question, which sought to explore how these past experiences impacted them in the present. However, participants were not involved in the design of the study or the recruitment process. Results were disseminated through the community advisory board, where members actively engaged in discussions on how the findings could be used to resolve community challenges.

Data collection tools and procedure

Through in-depth open-ended interviews using an interview guide comprising of twenty questions, we were able to elicit detailed narratives from the participants, capturing their perspectives, emotions around parenting. All the interviews were conducted face-to-face by two research assistants and a PhD candidate, either in the participants' homes or at a location of their choice, with each interview lasting 60 to 90 minutes. The local languages of Xitsonga and SiSwati were used during the interviews which were audio recorded, translated, and transcribed verbatim by trained transcribers. The translation process was rigorous to ensure the accuracy and cultural relevance of the transcripts with bilingual transcribers, fluent in both the local languages and English, who were also responsible for the translations. In instances where there was no equivalent word in English, the transcribers included the siSwati or Xitsonga word and provided an explanation in English to maintain the meaning of cultural phrases. Additionally, the research team reviewed the translated transcripts alongside the original audio recordings to verify the accuracy of the translations.

Participants were given a ZAR50 ($2,71) grocery store gift card as compensation for their participation in the study. This amount was chosen as it is not deemed to be coercive in the setting (rural and peri-urban Mpumalanga). Each interview explored childhood experiences of the participants which included experiences of childhood abuse, relationships with mothers and women caregivers and their intimate relationship dynamics. Critical to the study was also

the participants' relationship with their children, their feelings about being a parent and any challenges related to parenting.

The in-depth interviews were supported through the use of arts-based methods. The interviewers were trained in the arts-based methods by one of the co-investigators, a therapist and researcher with expertise in psychology, play therapy, and art therapy. The arts-based methods were used to stimulate and encourage dialogue among the participants. Participants were presented with three activity options: Kinetic Family Drawing (KFD), River of Life, and Sandbox. The KFD is a method that taps into participants' memories and childhood experiences (Burns & Kaufman, 2013). It is also useful for providing insight into perceptions of family dynamics (Ebersöhn et al., 2012). In relation to the KFD, participants engaged in two drawing activities: one representing their family of origin and another depicting their current family engaged in an activity. They explained the content of both drawings to the interviewer using open-ended questions (Burns & Kaufman, 2013). The River of Life method facilitated participants' reflection on their life events, as they drew a road symbolizing their life journey and marked significant events (Denov & Shevell, 2021). The sandboxing method which drew from sand play therapy, involved participants creating three-dimensional scenes in a tray filled with sand using various figures. They were encouraged to freely select figures and construct their own world in the sand, expressing their thoughts and interpretations (Mannay, 2016; Weinrib, 2004). Each figure held personal significance for the participants, serving as a tool for deeper communication (Mannay, 2016; Woollett et al., 2023). Data saturation was assessed through the iterative process of data collection and analysis. This iterative process involved collecting and analysing the data in cycles. After each round of data collection, the data was immediately reviewed and analysed to identify emerging themes and patterns. Based on this preliminary analysis, subsequent data collection efforts were adjusted to explore the themes in greater depth or to investigate any new areas that may arise. After each round of interviews, the research team reviewed the findings to identify recurring themes and patterns. As data collection progressed, we observed that no new themes or insights were emerging, and the information provided by participants began to repeat. This repetition, or redundancy, indicated that we were not gaining any new insights from additional data, suggesting that data saturation had been reached.

Moreover, the consistency of the themes across multiple interviews reinforced our confidence that we had comprehensively captured the participants' experiences. While formal discussions

on data saturation were not explicitly conducted among the study team, the iterative nature of our data collection and analysis provided a clear, practical indication that data saturation had been achieved.

Research trustworthiness

To ensure the quality of the research we adhered to the criteria of credibility, transferability, dependability and confirmability (Lincoln & Guba, 1986). Credibility was ensured through deep engagement with the local community. Our qualitative interviewers spent five months in the community, engaging with the participants to build trust and gather rich data. Prior to the qualitative interviews, the main study and quantitative interviewers had also established rapport with the participants, having been in the community for two years. The research team was highly qualified and interdisciplinary, including a social worker, a trauma therapist, and experts on violence against children, IPV research, and community engagement. To support peer debriefing, the management team held weekly sessions with the interviewers. These sessions allowed the team to discuss ongoing interviews, strategize, and address any challenges related to data collection and provide emotional support to the interviewers. To ensure dependability, a detailed proposal was developed outlining the qualitative data collection process, and the interviewers maintained thorough field notes. Intercoder agreement and reliability were ensured through team reviews of the initial six transcripts, guaranteeing consistent application of the codes.

To ensure confirmability, reflexivity played a critical role. Weekly debriefing meetings served as a platform for the research team to reflect on the research process, discuss any biases, and examine how our backgrounds might influence data collection and interpretation. Field notes were taken following each interview to assist in the research process, serving as a record of the researcher's thoughts and reactions. These notes facilitated ongoing reflection on how the researcher's role might influence the study's findings and interpretations. Furthermore, each team member continually reflected on their positionality. The research team comprised of individuals with diverse backgrounds, including two black women with post graduate qualifications (one Master's student and a PhD candidate), one black man who was a Masters student, and three white women with PhD qualifications. The researchers acknowledged their middle-class status and post-graduate qualifications while working in these communities marked by severe poverty. This self-awareness was essential to understand how our socio-

economic status, race, gender and educational background could impact our interactions with participants and the data collected. For instance, being interviewed by a man may have influenced the willingness of some of the female participants to disclose certain experiences. By actively reflecting on these factors during the weekly debriefing meetings and throughout the research process, the team aimed to mitigate potential biases and enhance confirmability of the study's findings. To ensure transferability, we provided detailed descriptions of the study context and participant characteristics, allowing readers to understand whether the findings might apply to their own settings.

Data management and analysis

A typology of participants was developed deductively using the syndemic theory. A broad coding framework was developed based on the research objectives and an initial thematic review of selected transcripts (Creswell & Creswell, 2007). This framework was informed by key concepts from syndemic theory, such as the interactions between IPV, mental health and HIV and the contextual factors that lead to the clustering of the epidemics, and served as a guide for coding the data (Singer et al., 2017b). We then identified inductive codes based on a deep reading of the transcripts and by comparing and contrasting the findings between the categories of participants based on the syndemic theory.

Thematic analysis, following the six-step process outlined by Braun and Clarke (2006), was used to analyse the interviews (Braun & Clarke, 2006). The steps included familiarizing ourselves with the data, searching for emerging themes by examining the coded data to identify broader patterns of meaning, reviewing themes to ensure that they accurately reflected the data, and applying the themes to the data during the write-up (Braun & Clarke, 2022).

Results

1. Characteristics of participants

The study included 20 participants, between the ages of 22-60, with a mean age of 36 years. Seven participants experienced the co-occurrence of all three epidemics (HIV-Mental Health -IPV). Their ages ranged between 24 and 45 years, and they were caring for one to four

children. Eight participants were living with the HIV-Mental Health syndemic. This group was more varied in age, spanning from 23 to 57 years, with caring responsibilities ranging from one to five children. Five participants were living with the IPV-Mental Health syndemic. These women were between 22 and 49 years old and were caring for two to five children. Across all the groups, participants reported symptoms related to poor mental health. However, only one participant had accessed mental health services at the provincial hospital, whilst the others had not accessed any formal mental health support before. Those that were living with HIV had received only HIV related counselling from the clinic which mostly covered their status disclosure to loved ones and adhering to treatment, but they did not receive any counselling related to specific mental health challenges. HIV positive participants reported living with HIV for durations ranging from 2-18 years.

Summary of key themes

The study identified several factors among women experiencing the syndemic conditions that had an influence on their parenting practices. The four themes generated included mothers being separated from their children due to adverse circumstances, strained relationships with the fathers of their children, maternal experiences of childhood trauma, including neglect, physical, and sexual abuse, and significant socio-economic challenges that hindered their capacity to meet the basic needs of their children. Figure 1 below provides a graphic representation of the findings.

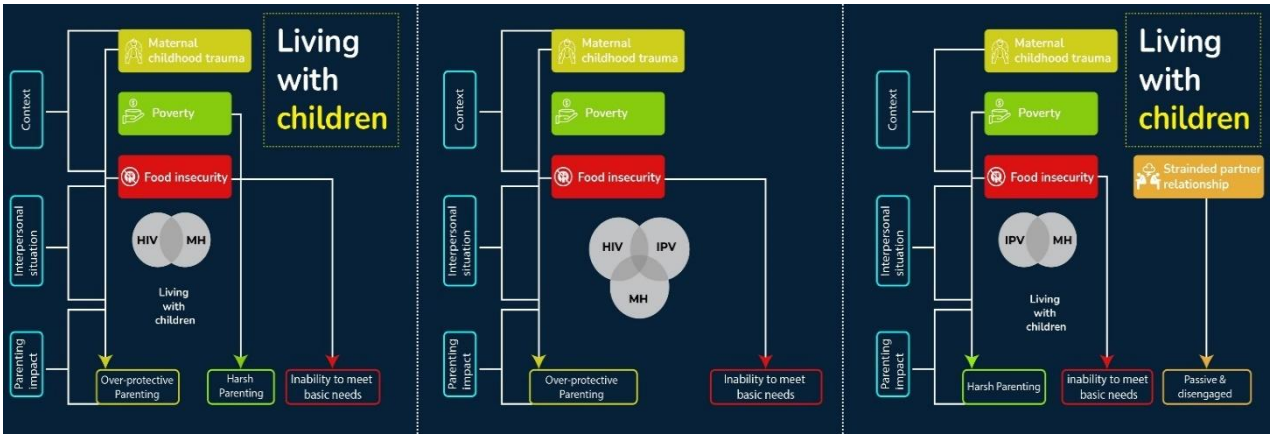

Figure 1: The syndemic and the underlying factors influencing specific parenting outcomes (HIV-Mental Health, HIV-IPV-Mental Health, IPV-Mental Health syndemic from left to right).

1. ***Separated by adverse circumstances: The influence of living arrangements on parenting practices***

Participants who had experienced all three concurrent epidemics of HIV-Mental Health-IPV reported being separated from their children. In most cases, their children were living with the participant's mother or aunts. However, participants reported seeing their children on most weekends. Various reasons were cited for why they did not live with their children, some described financial constraints related to looking after the children, while others described how family members insisted on raising the child because the participant was an adolescent when the baby was born and viewed as too young to look after the child, and in some cases family members feared for safety of the child, especially if the mother was experiencing IPV. One of the participants, Dixy Rose, in her 20s, specifically pointed to financial constraints such as the costs associated with school transportation as one of the reasons, she was not able to live with her children. Despite her reservations about how her children were treated by her mother Dixy Rose felt she had no other choice, she remarked,

"When the schools are open, I send my children to my mother because the school is closer to her, and I can't afford to pay for transport. However, I fear that she doesn't treat them the same way I do. They tell me she doesn't treat them well and hits them when they are naughty. But what can I do? They need to go to school."

Furthermore, safety considerations also played a role in participants' decision making, Dixy Rose also disclosed how her family had concerns about the children's safety, she further explained,

"My grandmother also convinced me not to take my children because we live in a one-room place. She said I would end up having sex in front of the kids, which is something I would never do. We would never do that. She was also afraid that the man I am staying with now might rape my children, as it's unfortunately common for men to do so lately."

Despite participants in the HIV-Mental Health-IPV group not living with their children, they often described their relationship with them in loving and warm terms expressing that they loved being a parent and believed that they had a good relationship with their children. When asked about her relationship with her children Dixy Rose shared,

"When my children are around, I am very happy. I have conversations with them, we chat like friends, and I play with them."

Sage, also within the same age range, shared similar sentiments, expressing the following,

"I just wish I lived with my children so we could be happy together. I want to raise them and guide them according to my own beliefs. I'd love for them to have what I didn't have as a child."

Moreover, none of the mothers and caregivers within this group reported behaviours that could be interpreted as child abuse and stated adamantly that they did not engage in corporal punishment. Phoenix, in her 20s, with two children had the following to say in relation to how she disciplined her children,

"I decided and told myself that I do not want to be a bully to them. I do not want them to be scared whenever they see me. I do not want to make them live that kind of life. I can't hit them because I love them so much."

similarly, Sage also revealed**, *"I sit them down and talk to them. I feel like hitting children makes them worse.*"**

This was notably different from the women from the HIV-Mental Health and IPV-Mental Health groups who were living with their children, as they all reported using corporal punishment to discipline their children. Halo, who was in her 40s from the IPV-Mental Health group, openly shared how she disciplined her children,

"I hit my children with a stick. I hit them when they misbehave. I want them to listen. I don't like children that are disrespectful"

Similarly, when Phoenix was asked how she guides her children, she reported ***"I hit her and sometimes I reprimand her, it depends."***

Additionally, mothers living with the HIV-IPV-Mental Health syndemic, who were not living with their children, expressed profound fears for their children's safety. Despite family members stating that such living arrangements were in the best interests of both the mother and child, these mothers had concerns that their children might be exposed to traumatic experiences similar to what they themselves had endured, such as child sexual abuse. Avatar in her 30s shared her fears about her children,

"I try by all means to show my children love and to protect them from the hardships and struggles I went through. I was raped and grew up in a situation where, when my grandfather was drunk, he would become violent. We knew that when he was drunk, we needed to find a place to hide to protect ourselves. At least my children are protected because I do everything I can to ensure they are safe and have food to eat"

Sage further reported, "***I don't want them to grow up with that anger that I grew up with, and to see the things that I have seen. I'd love for them to get what I didn't have as a child."***

2. Strained relationships with fathers of the children and their influence on parenting practices

Participants from the IPV-Mental Health group had strained relationships with the fathers of their children. In most cases we found that the father of the children was usually the perpetrator of IPV. Halo's (40-50yrs) experience highlights the severity of this issue,

"That one is very violent. He is very violent. When I was really sick in 2020, he would beat me badly. He would come and slap me for no reason." Quinn (HIV-Mental Health-IPV), also within the same age range had a similar experience with the father of her children being abusive towards her, she recalled,

"*When I was 22, I had my second child. Between the ages of 25 and 27, I had my second boy. However, my husband drank a lot, smoked cigarettes, and used marijuana, which led to him abusing me. When it was just the two of us, he wasn't abusive, but after we had children, he started abusing me. This continued until I had my last child, who sadly passed away. He drank heavily and abused me until I was about 35 years old"*

Participants in this group also shared that the fathers of the children did not support the children whether financially or emotionally. Phoenix, who was in her 20s, shared that the father of her children did not play an active role in the children's life, Phoenix disclosed,

"No, he doesn't discipline her, he doesn't do anything. I: Does he support your child financially? P: No, but he comes and sees her. He was here in December to see her. He sees her about once a year."

Conversely, participants from the HIV-Mental Health group reported having a good relationship with the fathers of their children, even if they were no longer romantically involved in some cases. Participants reported that the fathers of their children supported and were involved in the children's lives. Star, who was in her 20s, shared the following about the father of her child,

"The biological father is around, I'm not even in a relationship with him anymore but he is still very involved in PR's life. He picks her up and they still do things together."

Aspen, who was also in her 20s, also expressed a similar sentiment, that despite no longer being in a romantic relationship with the father of her child, he was still involved in their son's life,

"Since we were against getting an abortion, the family saw us as disrespectful, which strained our relationship. As a result, my relationship with him didn't last. Whenever he wanted to see me, he couldn't. However, he remains involved in our son's life and supports him financially. My child visits him whenever he wants, and they have a great relationship despite us no longer being together."

When it came to parenting in both the HIV-Mental Health and IPV-Mental Health groups, we found that participants often used corporal punishment as a means of disciplining their children. Participants in the IPV-Mental health group also shared that their experiences of IPV affected how they disciplined their children. Despite both groups using corporal punishment as a means of discipline there was a difference in how they described their relationship with the children. The mothers and caregivers from the IPV-Mental Health group reported an inability to connect with their children and a sense of detachment and dissatisfaction with parenting, Phoenix (IPV-Mental Health) shared her dissatisfaction with being a parent, stating,

"*I wouldn't want to be a parent if I had a choice. Nothing makes me happy about being a parent [laughs]. To be honest, I just don't find joy in being a parent."*

Phoenix (IPV-Mental Health) further described how her abusive relationship affected her interactions with her son:

"When I was in that abusive relationship, my son would try and speak to me, I would just insult him. I would get pissed off by my partner and take it out on the closest person to me and usually, it was my son he would do a small thing, like spill water, and I would overreact. I realised that the way I was hitting him was not normal. I would take out a lot of pain on him"

On the other hand, the caregivers who had experienced HIV-Mental Health described a closer connection with their children and a more positive overall relationship. This group, in some cases, even referred to their children as their friends. Bailey, who was in her 20s, shared, how despite initially having some difficulty with parenting, she loved her daughter,

"She is a blessing, I didn't want to have a baby, but now that I have her, she has made my life better. It's just that we started off on the wrong foot, but we are great now. I am happy

***to be her mom. She is my friend, but we have to maintain the respect that I am her mother, and she is my daughter.*"**

Furthermore, although the mothers and caregivers in the HIV-Mental Health group expressed a close relationship with their children, this did not stop them from using corporal punishment as a means of disciplining their children. When Aspen was asked how she disciplined her children she responded,

"I scold them or hit them with a tree branch. I hit them when they are naughty. I hit them with a stick."

Caregivers in this group justified corporal punishment as an important strategy in guiding their children to do the right thing or ensuring that they comply or behave, Aspen further explained when talking about her son,

"I usually hit my oldest child because he's naughty and likes hitting other kids. Before I hit him, I scold him several times and give him chances to do the right thing. But if he continues to misbehave, I get angry and then hit him."

3. Maternal experiences of childhood trauma and their influence on parenting practices

We found that participants from all the syndemic groups had challenging childhood experiences. More specifically all the women reported having experienced physical abuse from their caregivers which mostly included being hit with a stick as a form of discipline. Milan (HIV-Mental Health) expressed how her mother would hit them even when they had not done anything wrong,

"She was the type of person who would beat you up for having a headache under the assumption that you are lying and just lazy."

Aspen recalled similar experiences from her childhood ***"She would hit me with a belt or a tree branch. Whenever she asked me to do something, she expected me to drop everything I was busy with and attend to what she wanted me to do."***

The women from the HIV-Mental Health and HIV-IPV-Mental Health groups both reported that they had experienced exposure to parental violence. Avatar (HIV-Mental Health) shared,

"Whenever my grandfather drank alcohol, whether monthly or when he had just been paid, he would always hit her. He would even chase her to the neighbours' house. It was hard, but we knew what to expect whenever he was drinking. This went on for a long time. At one point, he even hit me on the back of my head, and I had to get stitches" "

The women living with the HIV-Mental Health syndemic were the only ones who explicitly reported emotional and physical neglect from their caregivers. Within this group, participants recounted instances where they were denied access to education because they were required to care for younger siblings and in some cases, they were deprived of food as a means of discipline. Milan (HIV-Mental Health) shared,

"I was not allowed to go to school, and when the neighbours asked my mother why she didn't send me, she would reply by asking who would look after the other kids she had later. She had another child, and I had to take care of that one as well. So, I stayed at home while my peers went to school"

Childhood sexual violence was only reported among women living with the HIV-IPV-Mental Health syndemic. These participants shared accounts of sexual violence, starting from a young age, perpetrated by relatives or close family friends, Phoenix recalled some of her traumatic childhood experiences,

"I was once raped, not once but three or four times, if I'm not mistaken. At that time, I was 9 years old. My life was like that. I grew up with this thing, it lives in me. I never got the chance to go for counselling. This guy was a family friend, he used to come to my parents' place.
"I remember well, at that time, they were selling beers at my grandmother's place. On the day it happened, he decided to do what he wanted. He took me for the whole day. Then he did what he wanted to do. He raped me. He said that if I told someone about it, it would be the end of me."

Additionally, some participants in this group described instances of disbelief from their caregivers when they disclosed the abuse they endured. This absence of support led to feelings of confusion, depression, and anxiety. Sage (HIV-IPV-Mental Health) shared,

"I didn't know anything about sex, I knew nothing and he raped me. When I went back to my aunt's house, I told them what happened. I explained to them what he did to me because I didn't really understand it and I needed them to tell me what had happened to me but they said I was lying. When they accused me of lying, I started thinking that maybe what had happened was actually my fault and that there was something that I had done wrong. The situation was not good at all and then I started having serious mental health issues."

When it came to parenting, a pattern among these participants was their overwhelming fear and concern for their own children. Their primary worry was that their children would endure the same traumatic experiences they had faced. As a result, participants displayed signs of overprotectiveness and an intense fear that harm might befall their children. However, this

sense of overprotectiveness was more common in the HIV-Mental Health-IPV and HIV-Mental Health groups. Some caregivers even admitted to being hesitant to allow their children to leave the home to play with other children due to their apprehensions about potential dangers.

Dixy Rose (HIV-Mental Health-IPV) expressed, ***"I don't want my children going out to play with the neighbours' children or being out and about. I prefer for them to be at home. As you can see, every time you have been here, my children are around me. I don't want my children to grow up the way that I grew up. I don't want them to see the things that I have seen."***

Similarly, Aspen, also shared her fears regarding the children's safety, ***"If it were up to me, they wouldn't play where I can't see them. Even when I go to town, I call them constantly to check that they are alright. I don't feel comfortable when they are out of sight. It scares me."***

4. ***Socio-economic Challenges and their influence on parenting practices***

Most of the participants from all the syndemic groups faced an interconnected web of socio-economic challenges, beginning with early life traumas such as sexual violence, parental loss, or physical abuse. These traumas often led to early school dropouts, setting the stage for ongoing struggles with unemployment, poverty, and food insecurity. Quinn (HIV-Mental Health-IPV), who was in 40s reflecting on her past, shared,

"We were very poor when I was growing up. My grandmother couldn't afford to keep sending me to school, so I had to leave. Then I found a partner and became pregnant. Growing up was tough, very tough, because my mom was the only one working and she had to look after all of us. She had to do everything for us—feed us, make sure we had clothes for school, and so on. So, it was tough. When I was 15, I was no longer living at home. I fell pregnant with L, couldn't go to school, so I just got married and had a baby. But this man was very abusive and drank a lot, so we really struggled"

The sequence of these challenges subsequently influenced their capabilities as parents. For women living with the HIV-Mental Health-IPV syndemic as mentioned earlier their socio-economic challenges posed obstacles to taking full custody of their children. Participants across all groups highlighted their difficulty in meeting the basic needs of their children due to these persistent socio-economic hardships. Common issues included reliance on neighbours or relatives for food staples such as maize meal, soap as well as limited scope for recreational activities with their children. Furthermore, participants reported that they relied on receiving social welfare grants from the government. These grants are means-tested and provide financial assistance to no- or low-income families and include the Child Support

Grant (ZAR 510/ $27.77); the Older Person's Grant, which supports individuals over 60 years of age (ZAR 2090/ $113.79); the Disability Grant, which assists those aged 18-59 with disabilities (ZAR 2090/ $113.79); and the social relief of distress grant, which offers 3-month temporary aid for those in severe financial hardship (ZAR 350)/ $19.06) (Orlandi, 2021). While these grants provided some financial relief, they were not always consistently paid.

Indigo (HIV-Mental Health-IPV) who was in her 40's reflected, *"**My children and I rely on the grant for our livelihood, and we live here on this plot. I wish I had more money to fix the home we live in and to buy a Jojo tank because our biggest problem here is water. I just wish we always had water."***

Beyonce (HIV-Mental Health), who was in her 40s, expressed how she also had a difficult time making ends meet and relied heavily on the support of her neighbours,

*"**Most of the time, my neighbour shares maize meal with me because sometimes, like today, the 15th, we still haven't received our R350 social relief of distress grant. Even when we do get the grant money, it's often not the full amount, so it's not enough for food. I also have to buy other necessities like soap and toothpaste. Sometimes, the soap runs out in the middle of the month. Just like now, we are not going to get the money anytime soon, and a friend gave me this soap after hearing me say we had none. Another friend gave me R20, and I bought toothpaste because we didn't have any."***

Some participants expressed that the only leisure time spent with their children was when they could afford it after receiving government grants often culminating in rare trips to the mall. Dakota (HIV-Mental Health), who was in her 20s, expressed the limitations of her financial situation on what she was able to do with her child,

"***No, I'm not working; I'm just sitting at home. I survive on his child grant, which comes at the end of the month, and then I can take my son to the mall."***

Furthermore, the cumulative effect of these socio-economic challenges manifested in heightened levels of stress and reduced self-efficacy in parenting roles across all participant groups.

Beyonce (HIV-Mental Health), when thinking about her capabilities as a parent shared: ***"I do not see myself as a good parent, like those who can take proper care of their children. I do not know how to, and I have not been able to do it. Because I did not work, I do not have anything to offer them. I cannot do all the things they want me to do for them"***

Additionally, Dakota (HIV-Mental Health) also shared her parenting challenges, ***"The most difficult thing about parenting, I think, is not having money because a child has so many needs, and it is difficult to meet all of them. He needs things for school, and sometimes I have to send him to school without food, so we have to ask the neighbours for help"***

Discussion

Our findings revealed that the syndemic interplay of HIV, poor mental health, and IPV places a compounded burden on parenting outcomes. Moreover, we found that the experience of the different syndemics were associated with certain contextual factors which influenced the way the caregivers parented. Specifically, parents living with the three epidemics (HIV-Mental Health -IPV) had been separated from their children due to the family's perception that they were unable to adequately parent them. Those grappling with a dual burden of IPV-Mental Health, while living with their children, experienced strained relationships with the fathers of their children and exhibited disconnection and emotional distance toward their children. Across all groups—whether they were living with the full HIV-Mental Health-IPV syndemic or other combinations of these, HIV-Mental Health or IPV-Mental Health, childhood trauma and socio-economic challenges emerged as influential factors that adversely affected their parenting practices.

Separated by adverse circumstances: The impact of living arrangements on parenting practices

Our research findings highlight the compounding influence of the HIV-Mental Health-IPV syndemic on mothers, making it notably more challenging for them to live with and care for their children. Family members often perceived these mothers as unfit for caregiving and as a result removed the children from their care. This assessment of the mothers being incapable was far less common for mothers living with just two of these epidemics (HIV-Mental Health or IPV-Mental Health). The removal of children from their care also highlights the harsh societal judgment and stigma faced by mothers at the intersection of these three stigmatized epidemics. In the context of South Africa, where high HIV mortality rates among young people are prevalent, it is not unusual for other family members like grandparents to step in and assume caregiving roles (Backhouse & Graham, 2010). Such living arrangements relieved these mothers of some immediate caregiving responsibilities and we also found that they also led to the complete avoidance of corporal punishment as a disciplinary method.

Multiple explanations could exist for this, firstly this could be due to the variable levels of social support available to mothers not living with their children (Angley et al., 2015; Taylor, 2011). When caregivers and mothers perceive a sense of support from their social circles, they are often inclined to use positive parenting behaviours such as showing affection, supervision, and being more supportive, even when they are dealing with substantial difficulties or obstacles (McConnell et al., 2011). Another explanation could be the emotional well-being of the mothers, it could be that the separation from their children led to heightened emotional states like guilt or shame, potentially influencing their preference for less aggressive disciplinary methods. Finally, a third explanation could be the possible abdication of parenting responsibility, which may potentially stem from internalized stigma concerning their parenting capabilities or confidence in their parental role. The latter could potentially have led them to shy away from disciplinary responsibilities that were commonly used in the community.

Despite the legal prohibitions against corporal punishment, its continued prevalence in South African homes and schools reflects the enduring societal norms that fail to recognize it as a form of violence (End Violence Against Children & End Corporal Punishment, 2020; Mamacos, 2021). The cultural acceptance of corporal punishment in peri-urban Mpumalanga could also shed some light on why mothers from the current study, specifically from the IPV-Mental Health and Mental Health-HIV groups, continued to use corporal punishment as a disciplinary method. As noted, this was in contrast to the women living with the HIV-IPV-Mental Health syndemic, who did not live with their children. Taking this context into consideration, it is reasonable to assume that the mothers from the IPV-Mental Health and HIV-Mental Health groups who did live with their children, would adopt disciplinary methods common within the broader community.

It is worth noting how most existing studies on the effects of parent-child separation tend to focus on the non-custodial parent, often the father (Ram et al., 2002), or on the perspectives of primary caregivers like grandparents (Mtshali, 2015; Xaba, 2021). Our study fills a significant gap by concentrating on how the syndemic of HIV-Mental Health-IPV specifically influences mothers' relationships with their children when they are not cohabiting, thereby offering unique and critical insights into this complex issue.

Strained parent relationships and the influence on parenting practices

Living with IPV-Mental Health complicates parenting. Our research found that mothers with this combination often had strained relationships with the fathers of their children, which exacerbated existing Mental Health challenges such as stress, anxiety, and depression. This strained relationship further reinforced harsh parenting behaviours, such as disengagement and passivity (Sokolowski et al., 2007). According to Belsky's ecological model and the family systems theory, the quality of the romantic relationship influences the parent-child dynamic, a phenomenon known as the "spillover effect", where the increased conflict, mistrust, and discomfort in closeness caused by IPV can in turn can also shape the nature of the parent-child relationship in the same way (Belsky, 1984). Stress and other Mental Health challenges related to IPV further undermine a mother's ability to parent positively. This deterioration in maternal mental health can manifest as reduced patience, less effective communication, and a decreased ability to manage the daily responsibilities of caregiving, ultimately affecting the parent-child relationship in a detrimental way (Levendosky et al., 2003; Margolin & Gordis, 2003). A systematic review by Chiesa et al. (2018), supports this, revealing that women facing higher levels of IPV engage less in positive parenting practices including sensitivity, engagement, and expressing positive emotions (Chiesa et al., 2018). Conversely, mothers with the HIV-Mental Health syndemic who maintained healthier relationships with the children's fathers showed more nurturing behaviours towards their children. This finding aligns with research by Howard and Brooks-Gunn (2009), suggesting that supportive relationships can counteract some of the negative impacts on parenting (Howard & Brooks-Gunn, 2009).

Maternal childhood trauma and the influence on parenting practices

Among the participants experiencing the different syndemics lth, our study identified that traumatic experiences from childhood or adolescence were commonly reported across all the groups. These early traumas appear to contribute to challenges into adulthood. Research substantiates this, showing that childhood trauma can lead to mental health conditions such as depression, anxiety, and post-traumatic stress disorder (PTSD) into adulthood (Brady & Back, 2012; Putnam, 2006; Satinsky et al., 2021). These mental health challenges, in turn, can exacerbate vulnerabilities to IPV and HIV, forming a complex web of interconnected challenges. Additionally, trauma has been linked to risky sexual behaviours, further increasing the risk for both HIV transmission and additional instances of trauma, such as IPV or sexual assault (LeGrand et al., 2015).

Quantitative research has already highlighted the significant impact of childhood trauma on parenting behaviour, further emphasizing the need for tailored interventions for caregivers who are survivors of such experiences (San Cristobal et al., 2017). In line with existing literature on the consequences of childhood sexual abuse on maternal parenting (Lange et al., 2020), our study revealed a strong tendency for overprotective parenting among mothers from the IPV-Mental Health-HIV and HIV-Mental Health groups. This corroborates numerous studies that link childhood sexual abuse to overprotective behaviours as mothers often feared that their children would experience what they had experienced in childhood (Douglas, 2000; M. O. Wright et al., 2012). Research among women with experiences of childhood sexual abuse found that these mothers were more anxious, often experiencing post-traumatic stress that manifested as hypervigilance (Douglas, 2000). The state of hypervigilance can lead to overprotective behaviours where mothers became excessively cautious and protective of their children (Douglas, 2000). Parenting tasks and the development stages of the children can trigger memories and emotions related to their own abuse (M. O. Wright et al., 2012). For instance, when a child reaches the age at which the mother was abused, this can be triggering, leading to increased protectiveness, this fear can lead to behaviours such as constant monitoring, restricting the child's interactions with others and being overly cautious about physical touch and affection (M. O. Wright et al., 2012).

However, the tendency towards overprotectiveness was less pronounced among mothers in the IPV-Mental Health group. This discrepancy could be attributed to a number of factors, including the strained relationships with their children's fathers and the ongoing abusive relationships that most were still in. Notably, unlike mothers in the HIV-IPV-Mental Health group, most mothers in the IPV-Mental Health cohort were living with their children. This living arrangement could also have contributed to their reduced protective instincts, perhaps because the constant proximity diminished the perception of immediate threat to their children, unlike the HIV-IPV-Mental Health group where physical separation might have heightened concerns for their children's well-being.

Additionally, our study revealed that mothers and caregivers generally did not report bonding challenges with their children, except in the IPV-Mental Health group, where participants reported these challenges. This finding is consistent with previous research which found that

women that were traumatized by experiences of IPV reported more difficulties bonding with their children (Levendosky et al., 2003).

Mothers' and caregivers' socio-economic challenges and parenting outcomes

Our study reveals that women living with the syndemic experienced socio-economic challenges, which also had an influence on their parenting practices. The interaction between epidemics and poverty forms a self-reinforcing cycle (Abramsky et al., 2011; Lund et al., 2011; Weiser et al., 2011b). Specifically, mental health conditions like depression and anxiety can diminish employability and job retention, affecting productivity and motivation (Butterworth et al., 2012). IPV further exacerbates these issues, as controlling behaviours from an abusive partner and subsequent mental health symptoms can undermine employment stability (Borchers et al., 2016). Likewise, an HIV-positive status introduces additional employment barriers such as employer stigma and inflexible work schedules that can prevent employers from going to the clinic (Maulsby et al., 2020). Cumulatively, these factors heighten the risk of unemployment and lower socio-economic status.

In terms of parenting, our findings align with existing studies which have shown that economic hardship amplifies stress and inter-parental conflict (Ho et al., 2022). In our study this was particularly evident amongst the IPV-Mental Health group. Additionally, parents caught in the syndemic (HIV-Mental Health-IPV, IPV-Mental Health, HIV-Mental Health) often fail to meet their children's essential needs, compromising their caregiving role and intensifying poverty-induced stress (Breslau et al., 1998). This economic strain fosters increased parental stress, heightening the risk of poor mental health and, consequently, the adoption of harsher parenting practices (Ho et al., 2022; Wahlbeck et al., 2017). A review on the relationship between poverty and child abuse and neglect found that poverty is a significant risk factor for child maltreatment (Skinner et al., 2022). Both familial and community-level poverty, as well as economic insecurity, have been strongly associated with an increased risk of child abuse and neglect (Skinner et al., 2022). Economic hardships can lead to psychological distress, relationship problems, and disrupted parenting, which in turn can increase the likelihood of child abuse (Skinner et al., 2022).

Limitations

It must be noted that the current study had some limitations. While participants were asked in general about violence they may have experienced in their childhood, we did not

specifically ask about child sexual abuse. This may have led to some participants in the other groups (HIV-Mental Health and IPV-Mental Health) choosing not to disclose such experiences. Moreover, the sensitive nature of the topics that were discussed as well as the stigma attached to people living with the syndemic, could have influenced participants' willingness to fully share and be open about certain topics such as the use of corporal punishment especially among the IPV-Mental Health-HIV group. This may have led to potential underreporting. However, to address this, interviewers assured the participants that all information would be kept confidential, and they were offered psychosocial support from the social worker if they felt distressed during the interview. Finally, the findings might be most relevant to the specific cultural and geographic settings of the study, possibly limiting their broader relevance. However, this research remains essential for comprehending the lived realities of women in certain South African provinces and can pave the way for more extensive, varied research.

Implications for practice and future research

The findings of our study have important implications for designing parenting interventions, particularly for mothers living with the various syndemic conditions. When developing interventions, it is essential to consider the specific epidemics women are living with, as well as various associated factors such as the socio-economic status, parental relationships and maternal experiences of childhood trauma.

Addressing socio-economic challenges is critical. Although South Africa offers social welfare grants to economically disadvantaged families, our research reveals that these grants were not always paid out regularly. Additionally, the child support grant was often inadequate to meet the family's needs. We recommend increasing the amount of the child support grant to better support families, particularly to enable unemployed mothers to provide for their children's basic needs and overall well-being.

Furthermore, parenting interventions need to harness the social support from family members by involving grandparents and aunts in sessions (K. Allen et al., 2022). Additionally, it is crucial to address strained relationships between parents recognizing the three-way relationship of parenting. Even in cases where there is no IPV, relationship strain and conflict can have a severe impact on parenting.

Moreover research has recently started to recognize the intersection of Violence Against Children (VAC) and Violence Against Women (VAW) (Pearson et al., 2022). Although interventions have tended to focus predominantly on gender relations and ending IPV, they often neglect the impact of poor mental health on the victims as well as the perpetrators. Given the prevalence of poor mental health in these contexts, and their persistence even after IPV has ceased, it is crucial to intentionally integrate a mental health focus into interventions. The persistence of mental health challenges even after the dissolution of a violent relationship can lead to continued violence against the child (Adkins & Dush, 2010; Gartland et al., 2022). A good example of integrated interventions are those developed by Equimundo, which include a focus on addressing the psychological impact of IPV on children and women, and harmful gender norms and social learning in an attempt to curb the intergenerational transmission of violence (Equimundo & Sonke Gender Justice., 2018).

Lastly, our research points to a noticeable gap in understanding the intricacies of motherhood within the context of these overlapping epidemics. Particularly, there's a lack of knowledge concerning mothers who are not living with their children due to the syndemic and this is a common phenomenon in South Africa. This warrants further mixed-methods research to explore the unique challenges and circumstances these women face and the impact on the parent-child relationship.

These recommendations serve as practical implications that can guide both interventions and future research directions, aimed at mitigating the complex socio-economic and parenting issues exacerbated by the syndemic.

Conclusion

In conclusion, our study highlights that living with the different combinations of the HIV-IPV-Mental Health syndemic complicates parenting. Mothers facing these overlapping challenges often lose custody, struggle with relational issues with their children's fathers, and engage in less effective parenting practices. Additionally, the syndemic intensifies socio-economic hardships, further eroding parenting quality by causing stress and unemployment. In essence, the syndemic not only makes parenting more difficult but also perpetuates a cycle of disadvantage for both parents and children. Developing interventions that take into consideration the associated factors of living with these epidemics and how they impact parenting is critical.

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Contributors

The study was conceptualized by M.S., N.C., F.M., N.W., and H.F.-O., who also contributed to the study methodology. Data collection was carried out by M.S., K.M., and P.M. Formal analysis was conducted by M.S. and N.C. Funding acquisition was secured by F.M. Supervision was provided by M.S., N.C., F.M., N.W., and H.F.-O. Validation was completed by M.S. The original draft was written by M.S., while the review and editing were performed by M.S., N.C., N.W., H.F.-O., and F.M. All authors reviewed and approved the final manuscript. MS is the guarantor

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Ethics approval

This study involves human participants. This study was approved by the Human Research Ethics Committee (HREC) of the University of the Witwatersrand (M220526), HREC (M190949), University of Edinburgh (264227) and the Provincial Department of Health Mpumalanga (MP-202012–003). All participants provided voluntary written informed consent forms before data collection commenced. Consent forms provided information on the study's objectives, what participation would entail, and the measures taken to ensure data confidentiality. Participants were also assured of their right to exit the study at any point, without facing any negative consequences. To maintain participant confidentiality, unique ID numbers were used instead of real names in all research materials. For the purpose of this analysis, pseudonyms have been used to protect the participants. To address potential psychological risks, a distress protocol was established. The purpose of the protocol was to act as a guidance for the interviewer in responding with sensitivity to participant's emotions during and after the interview and to ensure that participants were linked to resources and support in a timely manner. The study participants also had access to a full-time social worker from the Interrupt_Violence study for necessary referrals. For the current study, five

participants had non-mandatory referrals, 10 had mandatory referrals and the remaining five did not require any referrals. Mandatory referrals were for cases where participants living with children who experienced domestic violence involving a weapon or exhibited symptoms of suicidality. Non-mandatory referrals were for situations where the participant felt that consulting with a social worker would be beneficial, including problems accessing social grants, obtaining psychological assistance for poor mental health, or addressing food insecurities.

Chapter 7: Quantitative Results

Beyond Comorbidity: A Syndemic Analysis of Intimate Partner Violence, Mental Health, and HIV and their influence on maternal use of violence among women in South Africa[In draft form- submission ready]

Chapter 7

Beyond Comorbidity: A Syndemic Analysis of Intimate Partner Violence, Mental Health, and HIV and their influence on maternal use of violence among women in South Africa

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Abstract

Background: Globally women face interconnected challenges of intimate partner violence (IPV), poor mental health (MH), and HIV, which form a syndemic that exacerbates poor health and adversely influences parenting. However, the impact of these conditions on maternal use of violence remains underexplored, particularly in low- and middle-income countries like South Africa. **Objective:** The current study examines the additive and interactive effects of IPV, MH, and HIV on physical and emotional violence towards children among female caregivers. **Methods:** A secondary analysis of the *Interrupt_Violence* data (n=547) was conducted. Caregivers reported on IPV, MH (depression, anxiety, PTSD, suicidality), HIV, and maternal violence. Logistic regression assessed associations between syndemic factors and violence, while interaction models tested additive and multiplicative effects. **Results:** IPV (36.4%) and poor MH (44.1%) were significantly associated with increased odds of physical (OR=1.80) and emotional violence (OR=1.54). Interaction analyses revealed IPV-MH synergy heightened the risk of emotional violence (OR=3.04). **Conclusion:** Integrated parenting interventions addressing IPV and MH are critical to reducing child abuse.

Keywords: Mental health; Intimate partner violence; Parenting practices; HIV/AIDS; South Africa

Introduction

Globally, women are disproportionately impacted by the interconnected issues of intimate partner violence (IPV), poor mental health (MH) and HIV compared to men (UNAIDS, 2023; World Health Organization, 2013, 2022b). According to the World Health Organization (WHO), over 30% of women who have ever been in a romantic relationship have experienced IPV (World Health Organization, 2013). Furthermore, the global prevalence of depression among women is estimated to be between 21-39% (World Health Organization, 2022b). Additionally women and girls make up 53% of all people living with HIV (UNAIDS, 2023). Although substantial research on the syndemic of Substance Abuse, Violence and AIDS (SAVA) has been conducted in the USA (Meyer et al., 2011; Singer, 1996), the research remains limited on the impact of the clustering epidemics in low-middle income countries (LMICs), especially among women (Tsai & Burns, 2015). Furthermore, the research is even more scarce on the impact of the syndemic on parenting.

Child abuse is a serious public health concern due to the impact on children's development and on subsequent adult mental health with the potential for intergenerational transmission (Buisman et al., 2024; L. Cluver & Gardner, 2007). According to the WHO child abuse is any form of harm, neglect, or exploitation experienced by children under the age of 18 (The Alliance for Child Protection in Humanitarian Action, 2019; World Health Organization, 2006). This includes physical and emotional mistreatment, sexual abuse, neglect, and any form of exploitation that compromises a child's health, survival, development, or dignity within a relationship where there is an expectation of responsibility, trust, or authority (The Alliance for Child Protection in Humanitarian Action, 2019; World Health Organization, 2006). According to the Optimus study, the first nationally representative study on child abuse in South Africa, one in five young people have experienced some form of sexual abuse, including coerced sexual touching and exposure to intimate acts (Burton et al., 2015). Physical abuse is also widespread, with one in three children affected, 20.8% of school-going youth and 18% of those in households reported being hit, beaten, or kicked by an adult caregiver (Burton et al., 2015). Emotional abuse was reported by 12.6% of young people in households, while 17% experienced neglect (Burton et al., 2015). These high rates of abuse are driven by various factors, including harsh and inconsistent parenting. With IPV, poor MH and HIV disproportionately affecting women of childbearing age it is critical to understand how these comorbidities impact parenting.

Syndemic theory first conceptualized by Singer (1996), refers to the clustering of two or more comorbidities that typically occur within specific populations (Singer, 1996). These conditions often merge due to certain contextual and social factors, leading to compounded health burden (Mendenhall & Singer, 2020b; Singer, 1996). The interaction of these clustered conditions, whether biological or social, exacerbates the health outcomes faced by affected populations (Tomori et al., 2018).

The relationship between HIV, IPV and poor MH, involves both direct and indirect mechanisms. Research consistently demonstrates that IPV is associated with numerous negative physical and mental health outcomes for women, including an increased risk of HIV acquisition (J. Mitchell et al., 2016; World Health Organization, 2013). A recent pooled analysis of nationally representative surveys in sub-Saharan Africa found that women who had experienced IPV in the past year were 3.22 times more likely to acquire a recent HIV infection compared to those who had not experienced past-year IPV (Kuchukhidze et al., 2022). Potential pathways through which IPV may increase HIV risk include behaviours that increase sexual risk and reduce the capacity to negotiate safe sex practices (Kouyoumdjian et al., 2013; J. Mitchell et al., 2016). Additionally forced sex with an HIV positive individual and resulting genital injuries or lacerations from IPV are significant pathways through which IPV can increase HIV risk (Parcesepe et al., 2021). Studies have also documented the relationship between HIV and IPV with poor MH. The MH burdens associated with both IPV and HIV include higher rates of common mental disorders (CMD) such as depression, anxiety and post-traumatic stress disorder (PTSD) (Brandt, 2009; Chibanda et al., 2014; Sudfeld et al., 2017). Higher rates of MH disorders among people with HIV are often linked to poorer overall health, increased stigma and discrimination, substandard quality of health services, and non-adherence to antiretroviral treatment (ART) (Meade & Sikkema, 2005; J. Mitchell et al., 2016; Rosenburg et al., 2001). Poor MH can also increase vulnerability to HIV infection, as it leads to impaired judgment and unsafe sexual practices (Collins et al., 2009). Similarly, poor MH can increase the risk of IPV, as MH disorders may impair judgment and increase vulnerability (Devries et al., 2013b). Moreover, IPV can lead to increased risk of poor MH through mechanisms such as traumatic stress, social isolation, and chronic fear, which may elevate the risk of depression, anxiety, and PTSD (Hyde et al., 2008).

Based on Singer's original work on the syndemic, later expanded by Tsai and other researchers (Singer et al., 2017b; Tsai et al., 2017; Tsai & Burns, 2015) the identification of a syndemic requires meeting specific criteria. First, diseases or social conditions must occur within a particular context due to harmful social conditions, a phenomenon referred to as disease concentration. Second, these conditions must interact within populations and individuals in a way that exacerbates adverse health outcomes, known as disease interaction (Singer, 1996; Tsai & Burns, 2015). Thus far, studies have often used a cumulative count of issues, which assumes equal weighting among the co-occurring epidemics. However, this approach overlooks how each epidemic uniquely influences health outcomes and how they might interact to shape these outcomes (Tsai & Burns, 2015). Tsai and Burns (2015), argue that limited longitudinal and experimental studies that examine the synergistic and syndemic effects of co-occurring risk factors on outcomes necessitates the use of robust econometric methods in cross-sectional data analyses to provide probable synergistic risk factors that merit further investigation (Tsai & Burns, 2015). Epidemiologists maintain that the analysis of cross-sectional data should include both multiplicative and additive interactions (Greenland, 2009; Rajaleid et al., 2011; Tsai & Burns, 2015) In a multiplicative model, statistical interaction occurs when the combined effect of the risk factors differs from the product of the individual factors' effects (Kalilani & Atashili, 2006). Similarly additive interaction also known as synergism occurs when the joint effect of risk factors differs from the sum of the effects of the individual factors (Rothman, 1976). This concept is considered an appropriate way to statistically approximate the underlying causal mechanism of a given outcome (Kalilani & Atashili, 2006; Rothman, 1978).

The South African context: understanding the extent of HIV, IPV and poor MH

South Africa remains the epicentre of the HIV epidemic, with an estimated 7.8 million people living with HIV in 2022, including 7.4 million adults aged 15 or above (Simbayi et al., 2017). Approximately 540 000 young women and 180 000 young men are living with HIV in the country (UNAIDS, 2021, 2023). In terms of IPV, multiple studies across different provinces show a prevalence of between 21% and 31% of women who have ever experienced IPV (Durevall & Lindskog, 2015; R. Jewkes et al., 2001; R. K. Jewkes et al., 2010; South African National Aids Council, 2017). IPV is reported to be the second highest burden of disease in South Africa (R. Jewkes et al., 2001). Mental health challenges in the country rank third in terms of burden of disease after HIV and other infectious diseases (Brooke-Sumner et al.,

2017). According to the South African Stress and Health study, the lifetime prevalence of any mental disorder was found to be 30.3%, with anxiety being the most common mental health disorder at 15.8%, followed by alcohol abuse or dependence at 13.3% and mood disorders at 9.8% (Brooke-Sumner et al., 2017; Herman et al., 2009). Research indicates that women in South Africa are more prone to depression and anxiety disorders while men are at increased risk of developing substance use disorders (Artal, 2019; Williams et al., 2008b).

The impact of the HIV, IPV and MH on parenting

HIV, IPV and MH has been shown to affect parenting practices significantly. The stress associated with living with HIV reduces caregivers' capacity for parental engagement and nurturance.(Chandan & Richter, 2009b; Meinck, Cluver, Boyes, et al., 2015) This stress was further exacerbated by the high levels of poverty prevalent in HIV -affected households. Such environments are correlated with elevated risks of physical and emotional child abuse (Chandan & Richter, 2009b; Meinck, Cluver, Boyes, et al., 2015). Arguably the latter primarily stems from research conducted in the early 2000s where many individuals were dying in large numbers due to AIDS, and the stigma associated with the disease was high. During this period the fear of early death and societal stigma associated with HIV, impacted individuals living with HIV. However, over the past decade we have seen a significant reduction in the stigma surrounding HIV (Silima et al., 2024a). The availability of effective antiretroviral therapies has decreased the mortality rate, and community perception of HIV has also improved (Slaymaker et al., 2014). This shift could mean that the impact of HIV on parenting practices has lessened, due to the reduced stress related to health and status and overall improved quality of life (Khoirunnisa et al., 2021). Additionally, mothers who are experiencing IPV are said to have diminished parental functioning due to the mental and physical health impacts of IPV. These mothers and caregivers often suffer from reduced partner support and overall wellbeing, leading to different parenting styles where some may become hyper-vigilant, while others might be unresponsive or overly permissive or controlling (Anderson & Van Ee, 2018; Pels et al., 2015). In relation to poor MH particularly, maternal depression has been significantly linked to negative parenting behaviours, including increased anger, criticism, and sadness (England & Sim, 2009; Silk et al., 2009). Studies indicate that maternal depression can diminish the sensitivity mothers exhibit towards their infants (England & Sim, 2009; Meinck, Cluver, et al., 2017; Silk et al., 2009), which was

notably high in a study from a peri-urban settlement in Western Cape, where 34.7% of mothers showed signs of depression postpartum (Tomlinson et al., 2005).

Evidently, the co-occurrence of IPV, MH and HIV has a significant impact on parenting, this highlights the need for effective legislation and interventions to address this challenge. In accordance with South Africa's Children Act of 2005, child abuse is categorized as a criminal act (Children's Act 38 of 2005, 2006). In September 2019, the Constitutional Court of South Africa declared that all forms of physical punishment within the home were also considered criminal offenses (*Rex v. Janke Janke*, 2023). However, despite the existence of this legislation, child abuse remains prevalent in South Africa (Burton et al., 2015) .

Present study

This study builds on existing literature by exploring both the additive and multiplicative effects of the interaction between IPV, MH and HIV syndemic on parenting outcomes. Tsai and Burns (2015) highlighted the growth in syndemic research; however, a significant gap remains in studies conducted in low- and middle-income countries where the majority of people living with HIV reside. The present study addresses this gap by examining the additive and multiplicative impact of HIV, IPV, and MH on parenting outcomes in South Africa, responding to the call for more extensive syndemic research outside the US. The primary objectives of the study were 1) to assess whether IPV, MH and HIV were independently associated with increased maternal use of emotional and physical violence towards their children, 2) to determine the potential additive effects of aggregate exposure to one or more of these conditions on maternal use of emotional and physical violence towards their children, and 3) to explore the extent to which these conditions may interact on the multiplicative and/or additive scales to increase maternal use of emotional and physical violence towards their children beyond each condition's individual effects. A deeper understanding of the possible cumulative and interactive effects of the syndemic on maternal use of physical and emotional violence towards their children is essential for developing effective tailored interventions for this population.

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. Probable *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 risk* 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 (PTS)* risk 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). PTS risk 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 PTS risk .
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, probable depression, anxiety or PTS risk, 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 (maternal 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 (maternal 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 maternal 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).

a) 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.

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

b) 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.

Results

Table 1 represents the characteristics of the participants in the study. The majority of participants (52.6%) were aged 26-31years and from the rural site (58.1%). Half (50.8%) of the women were the primary caregivers to one child, 35.5% to two children and 13.7% to three or more children. Nearly two-thirds of them had completed high school (63.7%), and 34.4% had some high school education. In terms of employment, 26.7% of the mothers and caregivers had some form of employment in the three months prior to the study. This type of employment ranged between full-time employment, part-time and casual employment. Household income varied, with majority (67.4%) of the women reporting a monthly household income of between 1001- 5000 ZAR ($52-$250). For reference, the average monthly household income in South Africa is approximately R17,030, while female-headed households average around R13,207 (Statistics South Africa, 2023). Almost half (49.5%) of the mothers and caregivers reported any food insecurity. Few (5.7%) of the mothers and caregivers reported harmful substance use. Nearly two-thirds (64.7%) of them had experienced physical, emotional or sexual violence in their childhood. Moreover, lifetime experience of IPV was reported by 36.4% of the participants, with the most common forms being physical violence (26.8%) and emotional violence (20.8%). Regarding MH, 44.1% of the women reported symptoms related to depression, anxiety, suicidality, and PTSD, with suicidality being the most prevalent at 29.0%. HIV prevalence was 17.6%. Approximately 45% of the women reported having used physical violence towards their child at some point, while 31% reported ever engaging in emotional violence.

Table 1: Description of Sample

Independent variables	Mothers and caregivers (n=547)	95% confidence intervals
	n (%)	
Age		
20-25	259 (47.3)	
26-31	288 (52.6)	
Number of children		
One	278 (50.8)	
Two	194 (35.5)	
Three or more	75 (13.7)	
Education		
Primary	10 (1.8)	
High School	188 (34.4)	
Grade 12	348 (63.7)	
Employment	146 (26.7)	0.23 - 0.31
Household income (n=540)		
0-1000ZAR (0-$52)	65 (12.0)	
1001- 5000ZAR ($52-$250)	364 (67.4)	
5001-Above 20 000ZAR or more ($261 -$1039)	111 (20.6)	
Any food insecurity	271 (49.5)	0.45 0.54
Site		
Rural	316 (58.1)	
Peri-Urban	228 (41.9)	
Harmful substance use	31 (5.7)	0.04 0.07
Childhood experiences of violence	354 (64.7)	0.61 0.69
IPV victimization (n=547)	199 (36.4)	
Physical	148 (26.8)	0.23 0.31
Sexual abuse	44 (8.0)	0.06 0.11
Emotional abuse	114 (20.8)	0.18 0.24
Poor mental health	241 (44.1)	0.39 0.48
Probable depression (n=543)	87 (15.9)	0.13 0.19
Anxiety (n=545)	51 (9.4)	0.07 0.12
Suicidality (n=547)	159 (29.0)	0.25 0.33
PTS risk (n=545)	105 (19.3)	0.16 0.23
HIV+ (n=547)	96 (17.6)	0.14 0.21
Maternal use of physical and emotional violence towards children		

Physical violence	244 (44.6)	0.40	0.49
Emotional violence	170 (31.1)	0.27	0.35

The IPV-MH-HIV syndemic among mothers and caregivers

Results showed a varied prevalence of the syndemics (*Table 2*). Overall, 45.8% of the women in the sample were living with some combination of the syndemic. One in five (20%) reported experiencing IPV-MH, 10.2% of the participants were living with HIV-MH, 8.9% with IPV-HIV and 5.6%, were living with all three of the epidemics.

Table 2: The prevalence of the IPV-MH-HIV syndemic

Syndemic	**Prevalence**
	n (%)
IPV-MH	110 (20.1)
IPV-HIV	49 (8.9)
MH-HIV	56 (10.2)
IPV-MH-HIV	34 (6.7)

The association between IPV, poor MH and HIV among mothers and caregivers and use of physical and emotional violence towards their children

The unadjusted prevalence of maternal use of emotional violence revealed that nearly half (49.2%) of women who had experienced IPV reported engaging in violence towards their children. Furthermore, 46.3% of these women reported use of physical violence towards their children. Among the women reporting symptoms of poor MH, the majority (70.0%) reported engaging in emotional violence towards their children, and almost half (48.4%) reported physical violence. Of the women living with HIV more than a fifth (22.5%) reported the use of emotional violence towards their children, while 16.8% reported physical violence.

Table 3: Unadjusted bivariate associations between syndemic factors among mothers and caregivers and, physical and emotional violence towards their children

	Physical and Emotional Abuse		Physical Violence		Emotional Violence	
	n (%)	p-value	n (%)	p-value	n (%)	p-value
IPV						
Yes	126 (45.0)	<0.001	113 (46.3)	<0.001	59 (49.2)	<0.001
No	154 (55.0)		131 (53.7)		61 (50.8)	
MH						
Yes	139 (49.6)	0.007	118 (48.4)	0.069	84 (70.0)	<0.001
No	141 (50.4)		126 (51.6)		36 (30.0)	
HIV						
Yes	48 (17.1)	0.798	41 (16.8)	0.680	27 (22.5)	0.107
No	232 (82.9)		203 (83.2)		93(77.5)	

Logistic regression analysis on physical and emotional violence

Table 4 represents results from multivariate analyses. In adjusted logistic regressions, IPV victimization had a statistically significant association with use of physical and emotional violence, and poor MH was statistically significantly associated with maternal use of physical and emotional violence. Specifically, women with IPV experience had almost twice the odds of reporting use of both physical and emotional violence towards their children (OR= 1,79; 95% CI= 1,21, 2,63; p value = 0.003), and women living with poor MH had 1.36 odds of engaging in both physical and emotional violence (95% CI=0,94, 1,98). In the multivariate analysis, the following covariates were significantly associated with maternal use of physical and emotional violence: site, number of children, experience of abuse in childhood.

Additive effects of syndemic exposures on maternal **use of physical and emotional violence**

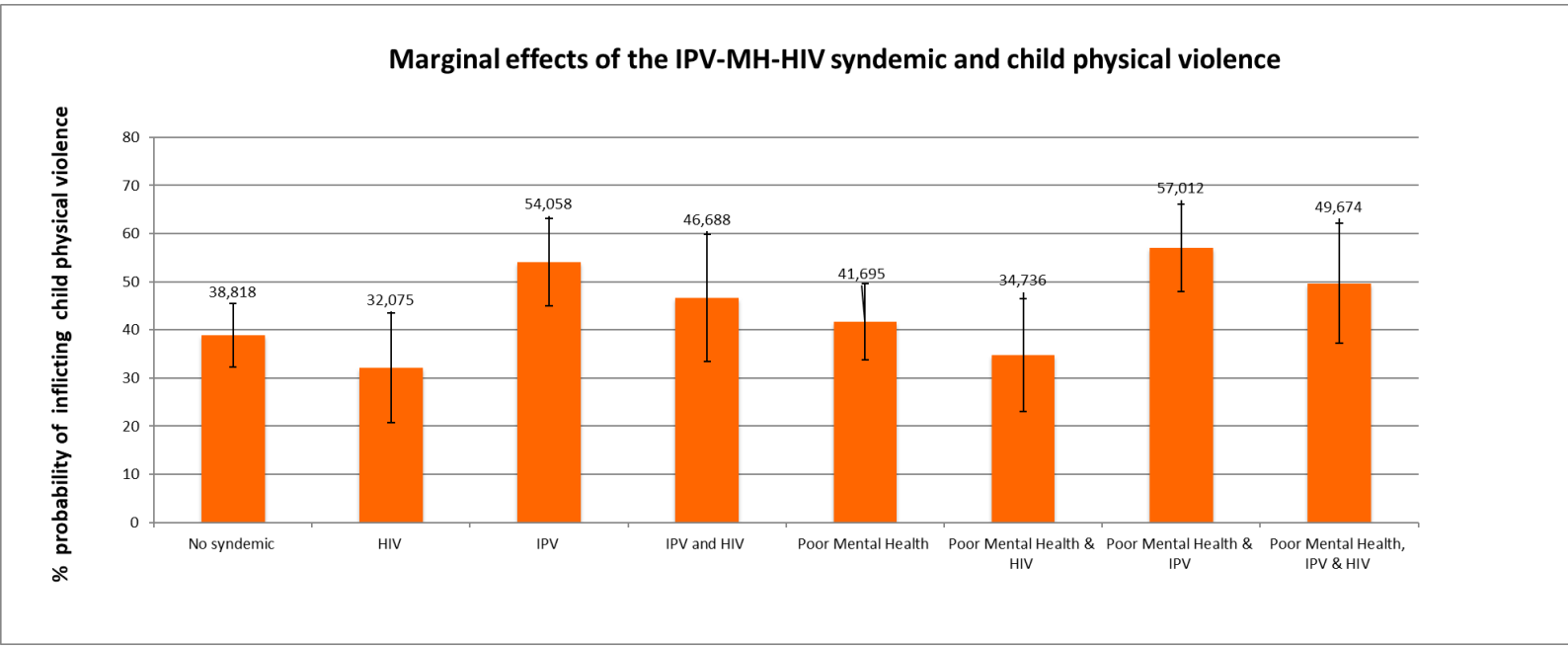
We found strong additive effects on women's use of physical and emotional violence among those experiencing the syndemic after controlling for covariates (Figure 1). The prevalence of maternal use of physical violence was 38% (95% CI: 32.2–45.5%) among mothers and caregivers who were not living with any of the three epidemics and increased to 57% (95% CI:47.9–66.1%) when the women were living with IPV-MH. Similarly for emotional violence, women not living with any of the epidemics had a predicted probability of 23.6% (95% CI= 18.0–29.1%) of inflicting emotional violence which increased to 43% among those with IPV-MH (95% CI=33.8–52.5%). Overall, the combination of IPV-MH was critical in driving the risk for both maternal use of physical and emotional violence against their children.

Interactions

Interaction analysis using two- and three-way product terms revealed a significant positive interaction on the multiplicative scale between IPV and poor MH on the maternal predicted probability of engaging in emotional violence towards their children (Table 5). No other combinations of syndemic exposures were significantly associated with physical or emotional violence on the multiplicative scale. Synergistic measures were calculated to gain a more comprehensive understanding of the joint effects. For physical violence, the interaction between IPV and MH significantly increased the likelihood of mothers inflicting violence on their children. The odds ratio for women in the IPV-MH group was 2.57 (95% CI: 1.61–4.12), indicating a more than twofold increase in risk compared to those not experiencing either condition (RERI =0.28; AP=0.11; S=1.2). This suggests that 11% of maternal use of physical violence towards their children was attributable to the interaction between these two exposures, indicating a positive interaction, although it was not statistically significant.

In terms of maternal engagement in emotional violence, we also found a positive interaction on the multiplicative scale between IPV and poor MH, increasing the likelihood of emotional violence (OR=3.04, 95% CI= 1.86–4,98) (RERI= 0.65; AP=0.21; S=1.47). This means that an estimated 21% of maternal use of emotional violence was attributed to living with IPV and MH.

Figure 1: Marginal effect of the IPV-MH-HIV syndemic and child physical and emotional violence



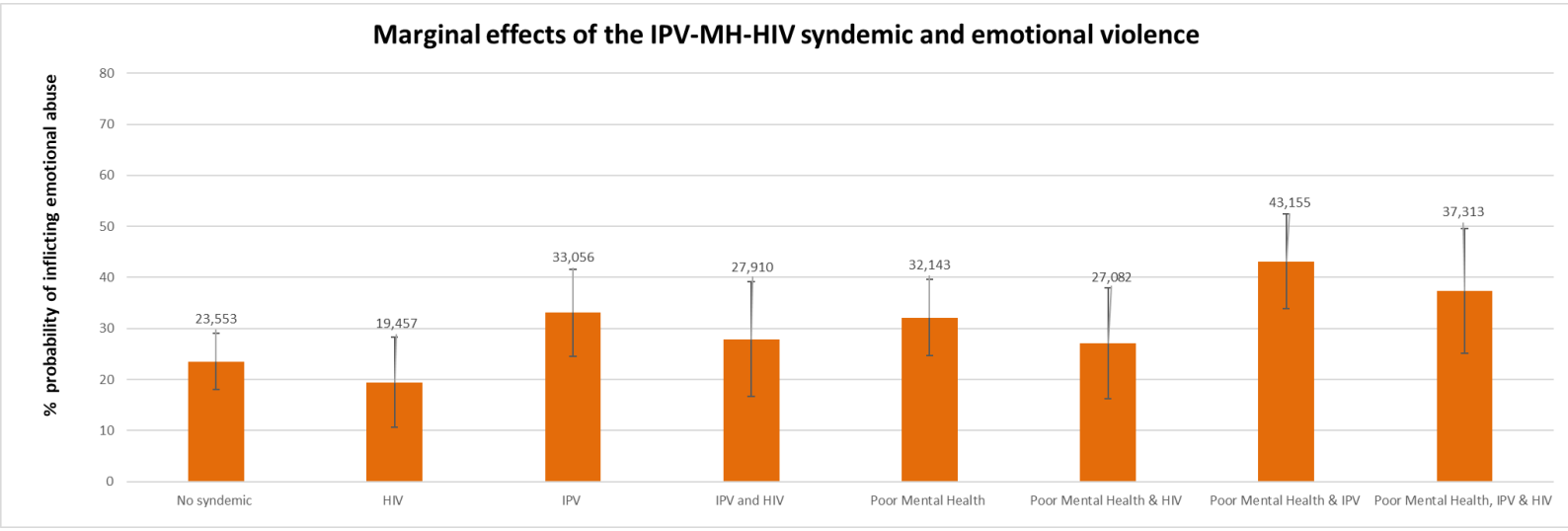


Table 4: Multivariate association between syndemic factors, socio-demographic characteristics, and physical and emotional violence among mothers and caregivers in Mpumalanga, South Africa

	Model 1: Physical Violence				**Model 2: Emotional Violence**				**Model 3: Physical and Emotional Violence**			
	Odds ratio	95% Confidence interval		P value	Odds ratio	95% Confidence interval		P value	Odds ratio	95% confidence interval		p value
MH	1.14	0.78	1.66	0.48	**1.53**	**1.03**	**2.27**	**0.035***	1.36	0.94	1.98	0.099
IPV	**1.83**	**1.24**	**2.69**	**0.002***	**1.61**	**1.08**	**2.40**	**0.020***	**1.79**	**1.21**	**2.63**	**0.003***
HIV	0.74	0.45	1.22	0.244	0.78	0.46	1.33	0.365	0.78	0.48	1.27	0.318
Food insecurity	1.04	0.71	1.50	0.853	0.92	0.62	1.38	0.715	0.94	0.65	1.36	0.753
Employment	1.03	0.67	1.54	0.952	1.15	0.74	1.78	0.541	1.01	0.67	1.53	0.953
Education												
Primary	Ref				Ref				Ref			
High School	0.79	0.20	3.13	0.747	0.97	0.25	3.79	0.971	0.36	0.07	1.89	0.231
Completed High School	1.11	0.27	0.28	0.917	1.01	0.25	3.93	1.00	0,49	0.09	2.51	0.391
Site												
Rural	Ref				Ref				Ref			
Peri-Urban	**1.48**	**1.01**	**2.18**	**0.045***	1.21	0.81	1.81	0.349	1.23	0.84	1,80	0.294
Experience of abuse in childhood	**2.11**	**1.43**	**3.13**	**0.000***	**2.30**	**1.49**	**3.56**	**0.000***	**2.01**	**1.38**	**2.93**	**0.000***
Substance Abuse	0.99	0.45	2.15	0.962	1.53	0.70	3.34	0.282	1.12	0.51	2.47	0.765

No. of children												
One	Ref				Ref				Ref			
Two	**1.83**	**1.21**	**2.18**	**0.004***	1.21	0.79	1.85	0.380	**1.48**	**0.99**	**2.22**	**0.052***
Three	**1.91**	**1.07**	**3.41**	**0.027***	1.24	0.67	2.29	0.484	1.57	0.88	2.79	0.124
Participant age	1.07	0.99	1.16	0.089	0.97	0.88	1.06	0.457	1.05	0.97	1.14	0.208
Relationship with child												
Biological child	Ref				Ref				Ref			
Non-biological child	0.67	0.34	1.32	0,25	1.15	0.57	2.33	0.35	0.86	0.45	1.67	0.671

*p-values less than 0.05 indicate statistical significance and are denoted with an asterisk ().**

Table 5: Main and Joint effects of two-way syndemic exposures and additive interactions on physical and emotional violence

		Physical violence			
		OR (95% CI)	**RERI**	**AP**	**S**
IPV	**MH**				
+	-	2.09 (1.26, 3.44) ***			
-	+	1.21 (3.44, 1.26)			
+	+	2.57 (1.61, 4.12) ***	0.2769 (-1.11, 1.67)	0.1076 (-0.4098 ,0.6250	1.2135 (0.4453, 3.3067)
IPV	**HIV**				
+	-	2.30 (1.54, 3.42) ***			
-	+	0.83 (0.44, 1.59)			
+	+	1.68 (0.92, 3.09) *	-0.4457 (-1.79, 0.90)	-0.2645 (-1.16, 0.63)	0.6058 (0.12, 2.98)
MH	**HIV**				
+	-	1.55 (1.05, 2.28) *			
-	+	0.85 (0.39, 1.80)			
+	+	1.22 (0.66, 2.24)	-0.1814(-1.79, 1.05)	-0.1487 (-1.06-0.76)	0.55 (0.01, 19.88)

		Emotional Violence			
		OR (95% CI)	**RERI**	**AP**	**S**
IPV	**MH**				
+	-	1.79 (1.04 ,3.08) **			
-	+	1.60(0.99, 2.62)			
+	+	3.04 (1.86, 4.98) ***	0.65 (-0.86, 2.16)	0.21 (-0.24, 0.66)	1.47 (0.57, 3.79)
IPV	**HIV**				
+	-	2.22 (1.47, 3.36) ***			
-	+	1.00 (0.49, 2.02			
+	+	1.41(0.68, 2.59)	-0.81(-2.18, 0.56)	-0.58(-1.76, 0.60)	0.34 (0.04, 3.06)
MH	**HIV**				
+	-	2.22 (1.47, 3.37) ***			
-	+	1.19 (0.52, 2.71)			
+	+	1.33 (1.46, 5.82)	-1.09 (-2.60, 0.42)	-0.82(-2.23, 0.58)	0.23(0.02, 3.16)

*p<0.05; ** p<0.01, *** p<0.001, OR, Odds ratio; CI, confidence intervals; RERI, relative excess risk due to the interaction; AP, attributable proportion due to interaction; S synergy index

Discussion

The primary objective of this study was to examine the additive and interactive effects of IPV, MH and HIV on maternal use of physical and emotional violence among mothers and caregivers. The findings highlight the substantial burden of these overlapping epidemics, with one in two women in the study reporting exposure to more than one of these conditions. This clustering of the epidemics aligns with syndemic theory, which posits that diseases and social conditions interact within specific populations, compounding negative health and social outcomes The most prevalent combination reported by women in was the IPV-MH syndemic, followed by the MH-HIV syndemic, while less prevalent combinations included IPV-HIV and the triple syndemic of IPV-MH-HIV.

Mothers and caregivers living with the different epidemic combinations were associated with increased odds of maternal use of emotional and physical violence towards their children. Specifically, women living with the IPV-MH-HIV syndemic had a 49% predicted probability of using physical violence and 37% probability of using emotional violence in comparison to those not living with any of the epidemics. Moreover, exposure to any combination of the epidemics increased the risk of both forms of violence compared to women experiencing a single epidemic or none at all. These findings demonstrate how these overlapping health challenges collectively heighten the risk of maternal use of violence.

Before we can examine the compounded effects of living the syndemics it is important to consider each epidemic, IPV, MH challenges, and HIV independently affects parenting practices

Impact of IPV on parenting practices

Beyond its well-documented psychological impact, IPV victimization contributes to harsh and inconsistent parenting through various pathways, including substance use, limited social support, maladaptive coping strategies, and community-level factors such as poverty and food insecurity (R. Jewkes et al., 2023; Silima et al., 2024a). In the current study, 36% of the women reported experiencing some form of IPV in the last year, this is higher than the national estimates that have been reported in multiple South African studies, which range between 21% and 31% (Groves et al., 2022; Mthembu et al., 2021), suggesting that women in our sample may face heightened social and economic vulnerabilities that compound IPV risk.

Furthermore, our findings indicate a significant association between IPV and parenting behaviours which is exacerbated by experiencing mental health challenges as well. Women who experienced IPV were significantly more likely to engage in both physical (46.3%) and emotional violence (49.2%) towards their children compared to women not experiencing IPV. These findings align with evidence from a systematic review conducted by Chiesa et al. (2018) with studies from the USA, who found that maternal IPV victimization is associated with increased levels of physical aggression, neglect, and an authoritarian parenting style (Chiesa et al., 2018). Additionally, IPV exposure is linked to reduced positive parenting behaviours, including lower levels of warmth, engagement, and responsiveness to the child's needs (Chiesa et al., 2018). The spillover hypothesis provides a useful framework for understanding these associations, suggesting that stressors from IPV-related conflict often spill over into the parent-child relationship, increasing the likelihood of coercive or punitive discipline (Chiesa et al., 2018; Debowska et al., 2024; Engfer, 1988; Krishnakumar & Buehler, 2000).

The impact of MH challenges on parenting practices

Our study identified suicidality, PTS risk, and probable depression as the most common MH challenges among the women. Consistent with prior research, our findings indicate that poor MH significantly impacts parenting practices (Oyserman et al., 2005; Phua et al., 2020; Potharst et al., 2022). Among mothers with MH challenges in our study, 70% reported engaging in emotional violence toward their children, highlighting the profound influence of poor MH on caregiving.

Suicidality emerged as the most prevalent MH challenge, with 29% of mothers reporting symptoms indicative of suicidal ideation. This high prevalence highlights the significant MH burden faced by caregivers. Research on mothers experiencing suicidal ideation has found that they often cognitively distort small stressors into catastrophic ones (Shea, 2002). Thes cognitive distortions exacerbate feelings of anxiety and hypervigilance reducing the mother's capacity to engage positively with her child (Paris et al., 2009). Additionally, mothers struggling with thoughts of self-harm often lack the ability to develop alternative solutions to problems (Pollock & Williams, 2004). The latter can result in the inconsistent or inappropriate response to their child's needs. Furthermore, they struggle in responding to the daily demands of motherhood, particularly interactions that require them to be attuned and responsiveness to their children's needs (Noorlander et al., 2008).

PTS risk was another significant MH challenge among the participants, with 19% of the women reporting symptoms consistent with PTS risk. Research indicates that parents with PTSD often experience heightened anger and reactivity, which can contribute to aggressive and punitive parenting (Christie et al., 2023). Studies have also found that parents that have been exposed to multiple traumas, including IPV and aabuse in childhood, are significantly more likely to engage in aggressive parenting behaviours such as spanking, slapping grabbing or pushing (Leen-Feldner et al., 2013). PTSD is also associated with a poor self-perception of parenting competence, which can escalate maternal distress and further undermine parenting quality (Christie et al., 2023). Emotional dysregulation among mothers with PTS risk has been strongly linked to harsh parenting, as parents with PTS risk often struggle with regulating anger and irritability, increasing the likelihood of reactive and punitive discipline (Lotto et al., 2024). Research has consistently demonstrated that emotional dysregulation among mothers is associated with a heightened risk of child abuse as well as unsupportive and inconsistent parenting (Li et al., 2019; Lotto et al., 2024; Lowell & Renk, 2017; Woods et al., 2019).

Depression was also prevalent in the sample, with 15% of mothers reporting symptoms indicative of depression. The impact of depression on parenting is well-documented, in a meta-analytic review, mothers with depression were more likely to exhibit increased irritability, hostility, and use coercive techniques towards their children (Lovejoy et al., 2000). The association between maternal depression and harsh parenting is primarily driven by negative effect, emotional states such as anger, irritability, and guilt that lower frustration tolerance and increase punitive responses to children's behaviour (Lovejoy et al., 2000). Additionally, maternal depression is also associated with diminished energy and enthusiasm, reducing engagement in positive reaction with children. Mothers with depressive symptoms are also less likely to play with, encourage or express warmth toward their children, which can have long-term consequences for child development(Lovejoy et al., 2000).

While the individual impacts of IPV and MH challenges on parenting practices are well-documented, it is their intersection and cumulative effects that offer the most profound insights into how these overlapping epidemics shape caregiving behaviours. Syndemic theory provides a critical lens through which to understand how these conditions do not simply coexist but interact in ways that exacerbate the risk of harsh parenting practices.

The syndemic of IPV and MH

Our findings suggest that the IPV-MH syndemic has a significant impact on the parental use of emotional and physical violence in this sample of mothers and caregivers in South Africa. Specifically, women living with the IPV-MH syndemic had a threefold increased likelihood of using emotional violence towards their children, with 21% of this violence attributable to the interaction between IPV and MH. In terms of physical violence, living with the IPV-MH syndemic more than doubled the risk of mothers and caregivers inflicting physical violence on their children compared to those not experiencing either condition. Additionally, the experience of IPV-MH showed a greater than additive interaction, with 11% of maternal use of physical violence among women in this group attributable to the intersection of these risk factors. While the latter suggests a possible synergistic effect, it was not statistically significant and should be interpreted cautiously.

Understanding the interaction effect is crucial for comprehending how these two epidemics compound one another and for developing targeted interventions that address both IPV and MH concurrently. Such interventions have the potential to reduce the incidence of violence against children more effectively than addressing each epidemic in isolation. Without identifying these interactions, it is challenging to argue the presence of syndemics (Mendenhall, Kohrt, et al., 2022). Evidence of this interaction is critical for policymakers and civil society to develop informed and integrated strategies. Our research contributes to the literature by demonstrating the interaction between IPV and poor MH, distinguishing it from much of the current research that often aggregates syndemic conditions without illustrating their interactions or synergistic effects (Singer et al., 2017b).

The combined impact of IPV and MH on parenting

The combined impact of IPV and MH intensifies parenting challenges, creating stressful environments where mothers face both the direct effects of each condition and the additional burdens of their interaction.

High prevalence of emotional violence

The high prevalence of use of emotional violence against children amongst the women living with the IPV-MH syndemic is a noteworthy finding. Emotional violence against children is often understated in the literature, due to the difficulties in defining it operationally and the

perception that there is little intent to harm the child when it occurs (Bell & Higgins, 2015). However, research indicates that emotional violence can have significant consequences on children's developmental outcomes that are equivalent to, or in some instances greater than, those of physical and/or sexual abuse (Chamberland et al., 2012).

In many communities, physical punishment is normalized and accepted as a disciplinary measure (Akcinar & Baydar, 2016; Atiqul Haque et al., 2019; Mayisela, 2018), which ca lead to underreporting or minimization of its impact. In contrast, the high prevalence of emotional violence observed in this study, may reflect the compounded stressors faced by mothers, living with IPV and mental health challenges, which impair their emotional regulation and coping mechanisms. Parents who struggle to manage their emotions effectively may adopt maladaptive coping strategies, increasing the likelihood of emotionally abusive behaviours (Lavi et al., 2018; Silima et al., 2024b).

The consequences of emotional violence extend far beyond childhood, with long-term implications for mental health and wellbeing (Spertus et al., 2003). A quantitative study with adults who had experienced emotional abuse in childhood found that such experiences were particularly damaging to long-term MH (Spertus et al., 2003). Emotional violence can lead to outcomes such as anger, aggression, low self-esteem, and attachment disorders, especially when experienced in early childhood (Spertus et al., 2003). Additionally, childhood exposure to emotional violence is associated with psychological adjustment difficulties in adulthood, including higher levels of depression, anxiety, and somatic symptoms(Gibb et al., 2007; Sachs-Ericsson et al., 2005).

These findings highlight the urgent need for interventions aimed at preventing child abuse to also place equal emphasis on emotional violence. Screening for emotional violence should integrated into routine child protection and maternal health services to enable early identification and intervention. Furthermore, maternal use of emotional violence is often linked to lower emotional control and emotion regulation (Lavi et al., 2018). As such interventions focusing on improving emotion regulation and stress management for mothers living with the IPV-MH syndemic can foster healthier mother-child relationships and mitigate the intergenerational transmission of emotional abuse.

Low risk of maternal **use of emotional and physical violence among HIV combinations**

Conversely, we found that the epidemic combinations of IPV-HIV, and HIV-MH did not significantly increase the risk of maternal use of violence. Our study offers new insights into the IPV-MH-HIV syndemic and also diverges from previous research such as the work by Thurston et al (2021), which suggests that maternal HIV status moderates the relationship between depressive symptoms and harsh parenting practices in the context of IPV (

Thurston et al., 2021). Unlike their findings where HIV exacerbated the negative effects on parenting (Thurston et al., 2016), we posit that the weaker association found in our study may be due to the increase in ART compliance which has shown to significantly improve the quality of life for those living with HIV (Oguntibeju, 2012; Wouters et al., 2009). The improved quality of life leads to better overall wellbeing, reduced stress and enhanced emotional stability, which are essential for effective parenting (Oguntibeju, 2012). Furthermore, there might also be less HIV stigma in the study site, which may help alleviate potential stressors that could lead to maternal use of emotional violence. Reduced stigma can foster a more supportive community environment and social support, further enhancing the psychological wellbeing of parents living with the syndemic. This supportive environment can contribute to more positive parenting practices by reducing the sense of isolation and shame that often accompanies the epidemics.

Contextual factors and disease concentration

According to syndemic theory contextual factors such as food insecurity, stigma and discrimination, and experiences of violence can precipitate the concentration of diseases significantly impacting individual health outcomes especially among marginalized populations (Mendenhall, Kohrt, et al., 2022). Context is a critical component in syndemic research, highlighting how living in conditions high in poverty and unemployment, with lack of access to clean water can significantly impact people's daily lives, health behaviours and outcomes (Pirrone et al., 2021; Singer, 1996). In the current study more than 70% of the participants were unemployed, half reported food insecurity, and 65% reported childhood experiences of violence. These socioenvironmental conditions are crucial in understanding the clustering of the IPV, MH and HIV epidemics among the participants.

The persistent challenges of food insecurity and unemployment create high levels of chronic stress, which have been shown to contribute to both MH deterioration and increased risk of

IPV. Financial strain has been linked to heightened household conflict, elevating the risk of IPV and limiting women's ability to leave abusive relationships (Khofi et al., 2025; C. Peterson & Mkhize, 2023). Economic hardship often restricts access to MH services, leaving individuals without necessary support to cope with IPV-related trauma (Pillay, 2019). Similarly, early exposure to violence, such as childhood abuse has also been identified as a strong predictor of both IPV victimization and poor MH in adulthood, reinforcing intergenerational cycles of adversity (McMahon et al., 2015; Mehta et al., 2023).

As noted in our analysis we controlled for several socioenvironmental factors including employment status, childhood experiences of violence and food insecurity, allowing us to isolate the associations of the syndemics on maternal use of emotional and physical violence. The strong influence of these structural factors in our regression models highlights their profound role in shaping parenting behaviours. However, even after accounting for these variables, the IPV-MH syndemic demonstrated a synergistic effect, reinforcing its impact on increased use of physical and emotional violence toward children.

Implications and future research

The findings of the current study have significant public health implications, particularly in the context of parenting interventions in South Africa. The compounded negative impact of IPV and poor MH on physical and emotional violence towards children by their caregivers highlights the urgency for integrated interventions.

From a syndemic lens, syndemic research emphasizes the importance of addressing multiple health conditions concurrently to produce optimal results, recognizing the role of social determinants such as poverty, stigma, racism, childhood trauma (Mendenhall & Singer, 2020a). Prominent interventions in South Africa such as the Parenting for Lifelong Health (PLH) have made some significant strides on enhancing parenting practices and reducing child abuse Cluver et al., 2018). These interventions often focus on improving parenting skills such as conflict resolution, establishing family rules and routines, and addressing environmental factors like poverty, which have a psychological impact on parenting (Cluver et al., 2018; Steinert et al., 2018; UNICEF, 2019). Furthermore, recently, interventions have started integrating violence against children (VAC) and violence against women (VAW) into parenting programs, acknowledging the co-occurrence of these types of violence (Equimundo & Sonke Gender Justice., 2018; UNICEF Innocenti et al., 2023). However, there still remains

a gap in interventions that address both VAC and VAW in low- and middle-income countries (Bacchus et al., 2024) and even within the integrated programmes there still remains a gap in addressing poor MH.

Despite these advancements, there is a critical need to be more specific and intentional about addressing IPV and MH concurrently in parenting interventions. Current programs often overlook the intertwined nature of IPV and MH, which significantly impacts parenting practices. Understanding the mutual reinforcement between IPV and MH necessitates comprehensive training for practitioners to recognize and address both IPV and MH challenges. This includes screening for MH and IPV in parenting interventions and thereafter providing interventions to address each.

An integrated IPV and MH parenting intervention would build on previous interventions but also specifically address the dual challenges of IPV and MH. Such a program should include IPV prevention through a gender-transformative approach, challenging gender norms and power dynamics to promote equitable, caring, and non-violent family dynamics (Equimundo & Sonke Gender Justice., 2018). Additionally, IPV-specific modules should provide education on recognizing IPV, providing resources for support and where to go if they would like to leave the abusive relationship. Mental health support should be frequent and regular, including ongoing psychosocial support to help parents process trauma and improve their mental health. Trauma-informed and responsive care should include modules on managing trauma, building healthy relationships, and improving emotion regulation. Moreover, the use of community-based delivery models, such as home-visiting programs and group sessions, can be utilized to enhance accessibility and effectiveness, especially in under-resourced areas such as South Africa (K. Peterson et al., 2024)

In terms of future research, there is a need for more longitudinal quantitative and qualitative research on the IPV-MH-HIV syndemic especially in LMICs, considering its widespread occurrence among women of childbearing age and the impact on parenting.

Limitations

The current study is not without its limitations. Firstly, the data are cross-sectional and temporal sequencing of exposures and outcomes was therefore not possible. Although the study does provide indications of areas where future longitudinal and intervention research could be focussed the study design limits the ability to temporality. Longitudinal research would be crucial in determining the directionality and causative impact of these factors over time. Secondly, there is a potential for response bias due to the self-reported nature of the survey. Participants in some cases may have underreported their engagement in harsh parenting practices; this has been well documented in research that is reliant on self-disclosure (Morsbach & Prinz, 2006). To mitigate the risk of potential report biases, fieldworkers received extensive training on research strategies to help them build rapport with the participants. Despite this there may be an underestimation of the prevalence and impact of harsh and abusive behaviours in the study findings and triangulating self-report with reports from the children could help in mitigating this in future studies. Furthermore, it is important to recognise that using O=odds ratio to measure additive interaction in this study only approximates the results that would be obtained with relative risk ratios. Research by Kalilani and Atashili (2006) shows that ORs can sometimes be unreliable depending on the interaction measure, type of interaction and baseline risk (Kalilani & Atashili, 2006). ORs often show higher interaction levels than RRs especially when the outcome is common. The RERI metric is the least stable when derived from ORs, compared to AP and S, which tend to be more reliable (Kalilani & Atashili, 2006). When adjusting for covariates, S is the most stable index as it does not vary across different groups (Skrondal, 2003). Given that our outcomes are common and we adjusted for confounders, we should be cautious about relying solely on RERI to confirm interaction. However to address this, we followed the recommendation to assess and report all three indices (RERI, AP and S), to provide a broader estimation range and check for any inconsistencies (Kalilani & Atashili, 2006). We found no discrepancies among indices in our analysis. However, longitudinal data is critical to confirm these relationships, and in the absence of this our findings need to be interpreted with caution.

Additionally, while the IPV-MH dyad revealed a statistically significant positive interaction on the multiplicative scale, other syndemic combinations did not. One possible explanation may lie in differences in subgroup sizes. The IPV-MH group had a substantially larger sub-sample than the IPV-HIV and MH-HIV dyads, which likely provided greater statistical power

to detect interaction effects. The smaller sample sizes in the other dyads may have reduced the ability to identify statistically significant interactions, even where patterns suggest potential relationships. This limitation has been noted and care has been taken not to over-interpret the absence of statistical significance in the smaller groups.

Conclusion

Our study highlights the synergistic effect of IPV-MH on women's parenting, revealing that the combined presence of these epidemics significantly increases the likelihood of both physical and emotional violence. Based on these findings it is essential to develop interventions that address these intertwined epidemics simultaneously, especially in resource limited settings where the impact is most acute.

Chapter 8:

Discussion

Chapter 8: Discussion

Prior to undertaking this doctoral research, the literature around the IPV, MH and HIV syndemic and the impact on parenting was disparate and had to be examined systematically. Through the scoping review we confirmed that living with the different combinations led to harsher parenting practices. This research bolstered the literature by qualitatively exploring the impact of the co-occurrence of the epidemics among women and quantitatively investigating the synergistic impact of the syndemics. At the time of the study, the researchers did not find any study looking at the IPV, MH and HIV syndemic amongst parents in low-middle income countries.

8.1. Contextual factors of women living with the syndemic

Central to syndemic theory is the impact of contextual factors on epidemics, showing how certain conditions increase susceptibility and elevate disease burdens among social groups (Douglas-Vail, 2016; Singer et al., 2017b). The study sites were characterized by prevalent poverty, where many of the women relied on the government social grant to survive and in some cases in multigenerational homes a few grants such as the disability grant, or the older person grant. The women experienced limited opportunities for leisure, struggled to meet their and their children's basic needs, and contended with sub-standard infrastructure and poor access to water and poor access to essential services (Statistics South Africa, 2018). Mental health services were scarce, with the peri-urban site having only one clinic with one psychologist, necessitating the residents to travel an hour to the nearest hospital. These conditions, combined with significant food insecurity, highlight the challenging living conditions of the participants.

Understanding these contextual factors is crucial for comprehending the syndemics, as they reveal the synergistic interactions of the epidemics influenced by social, political and economic dynamics (Mendenhall & Singer, 2020b). These contextual factors play an important role in exacerbating the IPV, MH and HIV syndemic, significantly impacting parenting. Living under such conditions increases stress, leading to poorer mental and physical health outcomes. Additionally poverty and food insecurity are

risk factors for both IPV and HIV, underscoring the interconnectedness of these epidemics (Chop et al., 2017; R. Jewkes et al., 2023).

8.2. Depression, PTSD and suicidality were common among women living with IPV and HIV

We found that poor MH was common among women living with IPV and HIV. The qualitative study revealed that all combinations of these epidemics included poor MH (Silima et al., 2024a). Depressive symptoms were the most common MH symptoms identified in both the qualitative and quantitative findings. This relationship is supported by research indicating that IPV can lead to traumatic stress, fear and isolation, all contributing to the development of depression (K. M. Devries et al., 2015). Furthermore, research shows that there is a reciprocal relationship that exists between MH and IPV, where MH disorders can increase the vulnerability to IPV, particularly among women with depression and PTSD (K. M. Devries et al., 2013a; Woollett & Hatcher, 2016). This can occur through various mechanisms such as reduced self-esteem, impaired judgment and difficulty in recognizing or escaping abusive situations (Iverson, 2015; Yu et al., 2018). Additionally research has also found that women with experiences of ACE's such as physical or sexual abuse are likely to experience long term detrimental effects on both their physical and mental health, which in turn can increase their likelihood of experiencing IPV in adulthood (Barrios et al., 2015; Seon et al., 2022).

The research on the co-occurrence of IPV victimization and depression is robust and well documented, (K. Devries et al., 2013; Esie et al., 2019; Yuan & Hesketh, 2021), while the association between IPV, PTSD, and suicidality is comparatively understated. Our quantitative findings contribute to the literature by drawing attention to these other MH challenges, underscoring the need for IPV interventions to also address the prevalence of PTSD and suicidality among women who are parents.

Furthermore, in terms of HIV, a systematic review by Bigna et al (2019) in Africa, found that the overall prevalence of depression among people living with HIV was 36.5% with the prevalence of probable major depressive disorder being 14.9% (Bigna et al., 2019). The prevalence was higher in Northern, Eastern, and Southern Africa and

in studies conducted after 2010 (Bigna et al., 2019). Factors associated with depression among the women in our study included feelings of undeservedly acquiring the disease despite being faithful to their partners, and the sadness of potentially dying and leaving their children behind.

The quantitative results also indicated higher prevalences of suicidality and PTSD among the women. Although women in the qualitative study did report symptoms indicative of suicidality and PTSD it was not as common or explicit as in the quantitative study. For women living with HIV, suicidality was often expressed in relation to instances of vertical transmission but was not always labelled or described using clinical terminology.

One possible explanation for these discrepancies lies in the overlap of symptoms across different MH condition. As previous research has shown, MH. As previous research has shown, MH challenges are often comorbid, such as intrusive thoughts, low mood, hopelessness and excessive worry, can cut across diagnostic categories. (Przeworski & Dunbeck, 2015; Takeuchi & Nakao, 2013).

It is also important to consider the different forms of data collection**.** While the survey environment was facilitated by well-trained and empathetic fieldworkers, its structured format may have limited the depth of disclosure, particularly for complex or stigmatised experiences. In contrast, the qualitative interviews, which were designed to be more conversational and open-ended, may have provided participants with a greater sense of psychological safety and narrative control, enabling them to share more nuanced or emotionally sensitive experiences. Additionally, the qualitative researchers were experienced in conducting sensitive research and were also very well trained to be able to engage meaningfully in disclosures and sensitively contain narratives of distress.

Indeed, several participants who were not flagged for MH challenges during the quantitative phase nonetheless described symptoms that were indicative of MH challenges such as suicidality, depression and anxiety during the qualitative interviews. While these accounts were not derived from diagnostic tools, they do offer meaningful insights into how women understand and articulate emotional distress.

8.3. Differential impact of Depression, Suicidality and PTSD on child maltreatment among women living with IPV

Our study found that women living with the IPV-MH syndemic were more likely to engage in both physical and emotional violence towards their children (Chapter 7). With emotional violence being more prevalent. Notably the presence of both epidemics had a synergistic effect, significantly increasing the likelihood of using emotional and physical violence. Many studies have examined the syndemic and its synergistic effect on various outcomes (Hatcher, Gibbs, et al., 2022; Mendenhall et al., 2021; Safren et al., 2020). However, to our knowledge, no studies at the time of this research had specifically measured the synergistic effects of these epidemics on parenting practices. Our study contributes to the literature by addressing this gap, and this finding is critical for informing future interventions.

A clear link exists between the type of MH challenges, such as depression or PTSD, experienced by women who had endured IPV and their parenting practices. Women who revealed depressive symptoms reported feeling disconnected and finding no enjoyment in parenting (Chapter 6). A majority of our participants experiencing depression were beyond the timeframe of postnatal depression, which is typically defined as occurring from 15 days to one year after delivery. While postnatal depression is a common condition estimated to affect one in five women in South Africa (Dadi et al., 2020), our participants described chronic depressive symptoms.

This aligns with the existing literature indicating that mothers with depressive symptoms tend to be more hostile, irritable, critical, disengaged and less positively engaged with their children compared to nondepressed mothers (Gonçalves et al., 2019; National Research Council (US) and Institute of Medicine (US) Committee on Depression, et al., 2009). One potential factor that could help explain this pattern is emotional dysregulation, which refers to the inability of an individual to control or regulate their emotional responses to a stimulus (Gratz & Roemer, 2004). In the context of maternal depression, emotional dysregulation can impair the mother's ability to modulate feelings such as frustration, sadness, or anger in ways that support

positive parenting. As a result, mothers experiencing emotional dysregulation may react to their children with withdrawal, irritability, or harshness rather than warmth and patience. These difficulties can increase the likelihood of emotional violence, such as criticism, rejection, or verbal hostility (Gonçalves et al., 2019; Lovejoy et al., 2000; Nderitu et al., 2023). The research on suicidality among mothers parallels findings on maternal depression, highlighting that the mother-child relationship often suffers as a result of the disorder (Paris et al., 2009). Mothers experiencing suicidality tend to have more mood disturbances, cognitive distortions, low self-esteem and negative perceptions of their effectiveness as parents. These mothers also show noticeably less responsiveness to their infants and are often less able to demonstrate sensitivity and reciprocity in interactions with their infants, further impacting the quality of the mother-infant bond (Paris et al., 2009).

The parenting behaviour among the women in our study who reported symptoms indicative of PTSD reflected patterns found in existing literature. Research indicates that PTSD in parents is associated with decreased parental satisfaction, increased reactivity and aggressiveness towards their children, emotional numbing, and negative perceptions of their children and their behaviour, all of which contribute to an increased potential for child maltreatment(Cross et al., 2018; Galovski & Lyons, 2004; Leen-Feldner et al., 2011). For instance mothers with a history of childhood sexual abuse often exhibit a strong need to protect their children but struggle with bonding (Cavanaugh et al., 2015).

8.4.. Less harsh parenting observed among women living with HIV

Our quantitative findings indicate that each additional exposure to the syndemic factors (IPV, MH, and HIV) significantly increases the likelihood of both physical and emotional violence, with the highest probability observed when IPV and poor MH are combined as well as when all three epidemics are present. This demonstrates the additive effect of these syndemic exposures. In contrast to this finding, our qualitative study revealed that mothers living with the IPV-MH-HIV syndemic reported that they did not engage in any harsh parenting practices (Chapter 6). This discrepancy between the qualitative and quantitative findings, could be explained by several factors. Firstly, the women in the IPV-MH-HIV sampled in the qualitative study were not living with

their children and may have felt that they did not have the right to discipline them. Additionally, family support may have enabled the women to engage in healthier parenting practices.

It is also important to acknowledge that social desirability bias may have also influenced how participants responded in the qualitative interviews. Despite the interviewers' training and the supportive nature of the interview environment, some women may have been reluctant to disclose parenting behaviours that could be perceived as harmful, particularly in the context of a face-to-face conversation.

The qualitative study also had a smaller sample size, which may not have fully represented the experiences of the women living with the IPV-MH-HIV syndemic, whilst the quantitative study included a larger sample, increasing the likelihood of capturing a wider range of parenting behaviours among this group.

Furthermore, the quantitative analysis of the interactions between MH-HIV and IPV-HIV showed no significant interaction suggesting that the presence of HIV alone might not exacerbate harsh parenting. It is possible that over the years various interventions targeting combined HIV and IPV (Marshall et al., 2018); parenting among people living with HIV (Conserve et al., 2017; T. Rochat et al., 2017), and improving MH among people living with HIV (Chuah et al., 2017) might have reduced the likelihood of harsh parenting practices among mothers living with HIV.

8.5. Maternal use of emotional violence high among women living with the syndemic

Maternal use of emotional violence was more prevalent than physical violence in our study. This is a significant finding because emotional violence is often understated in the literature despite its severe consequences (Meinck, Fry, et al., 2017; Shin et al., 2015). Emotional violence including behaviours such as verbal abuse, constant criticism, manipulation and humiliation has been linked to the development of eating disorders, low self -esteem , self-harm behaviour, and suicide attempts (Jimenez, 2019). Moreover, research indicates that a history of emotional violence is a strong predictor of depression and anxiety disorders in adulthood more than physical abuse

(Annor et al., 2020). This highlights the critical need to address emotional violence which is frequently overlooked both in the scientific community and societal discourse (Touw, 2023).

The impact of emotional violence on children's development and wellbeing can be profound. Children who experience emotional violence may suffer long-term psychological effects, including chronic stress and difficulties in forming healthy relationships. Studies have revealed that emotional violence can disrupt the development of secure attachment, leading to issues with trust and emotional regulation (Gilbert et al., 2009; Norman et al., 2012). Moreover, emotional violence can impair cognitive development and academic performance, as children may struggle with concentration and motivation due to the constant emotional distress (Shields & Cicchetti, 2001).

On of the major challenges in researching emotional violence is the lack of clear definition. This conceptual ambiguity makes it difficult to identify, measure, and compare emotional violence across studies and contexts. According to researchers from the University of Southern California, "a lack of understanding about what constitutes emotional violence often causes the problem to go unidentified in children" (Dory, 2019).Emotional violence can include behaviours such as verbal abuse, constant criticism, manipulation and humiliation, yet these actions are not always recognized as abusive (Touw, 2023). A key concern is that emotional violence is often invisible: it leaves no physical marks and may be normalised within families or communities. As a result, individuals may be unaware that they are experiencing or inflicting it, and they may lack the language to describe it (Glaser, 2002; Touw, 2023). Moreover, cultural norms regarding parenting and discipline further complicate the identification of emotional abuse, as some practices (e.g., harsh verbal correction or emotional withdrawal) may be accepted or even encouraged in certain settings, despite being harmful(Leeb et al., 2011)

Without a consistent definition, emotional violence remains underrepresented in child protection research and policy, despite evidence linking it to serious outcomes such as depression, anxiety, low self-esteem, and interpersonal difficulties later in life (Norman et al., 2012)

8.5. Socio-ecological factors underlying parenting practices among women living with the syndemic

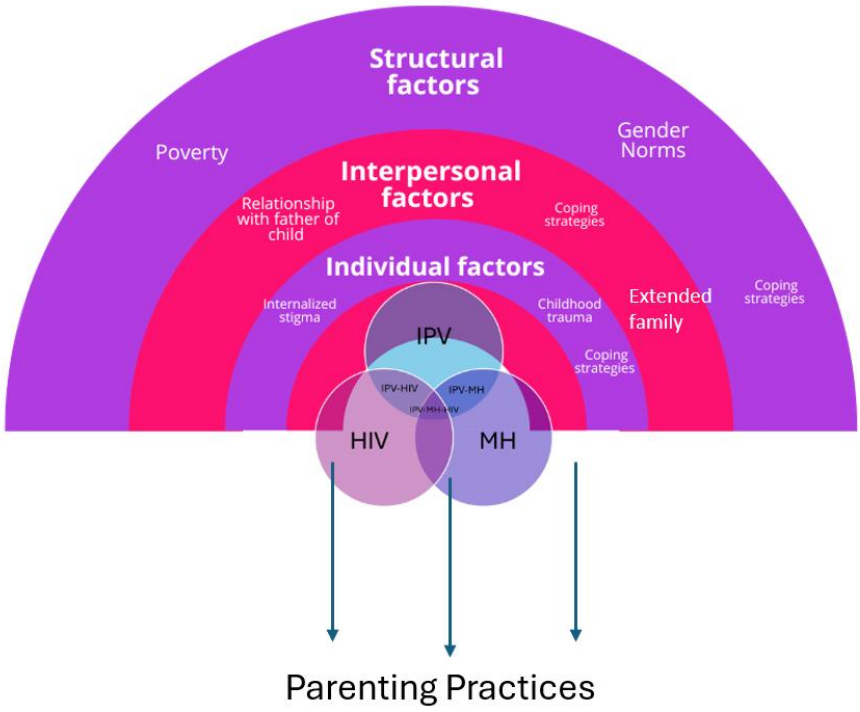


Figure 12: Socio-ecological factors influencing parenting practices

Various underlying factors at the individual, interpersonal and structural levels influence parenting practices among the women in our study (see figure 13). This is consistent with Singer's syndemic theory, which emphasizes that large-scale factors often exacerbate the concentration of these conditions, leading to worse outcomes (Mendenhall, Kohrt, et al., 2022; Singer et al., 2017b).

8.6. Individual level factors influencing parenting practices

Internalized stigma among women living with the syndemic

At the individual level, the women in the study expressed what I interpreted as internalized or self-stigma (Silima et al., 2024a). Internalized stigma often arises from public stigma where individuals internalize societal prejudices and discrimination (Vogel et al., 2013). This phenomenon was evident among many of the participants, who despite acknowledging the reduced public stigma surrounding HIV for instance, due to increased awareness, and availability of ARVs, continued to self-stigmatize.

Internalised stigma among women living with HIV was often linked to fears of vertical transmission, with some women expressing feelings of guilt, shame, and failure as mothers. For many, HIV was associated with early death, which amplified their sense of having let their children down. These findings are consistent with previous research demonstrating that HIV-related internalised stigma among mothers is closely tied to concerns about motherhood, perceived moral failings, and anticipated social rejection(Rochat et al., 2013). Similarly, women who had experienced IPV also reported significant internalised stigma. They described feeling judged or blamed by others for remaining in abusive relationships, internalising societal narratives that framed them as weak, complicit, or responsible for the abuse. This aligns with broader evidence that IPV-related stigma often results in self-blame, social isolation, and reluctance to seek help, particularly in settings where victim-blaming attitudes are prevalent (Overstreet & Quinn, 2013).

Internalized stigma has numerous adverse consequences. It creates barriers to recovery, reduces self-esteem and self-efficacy and increases MH challenges (Corrigan et al., 2016). Research indicates that internalized stigma significantly predicts levels of depression. A systematic review found that 72.3% of studies supported the link between internalized stigma and depression, attributed to the individual's subjective experience of feeling stigmatized (O'Donnell & Habenicht, 2022).

Diminished self-esteem and poor MH, due to internalized stigma undermines confidence to act in specific situations, negatively impacting on agency (ability to act or choose what action to take), and parenting self-efficacy (PSE), defined as a parent's belief in their ability to successfully perform the parenting role (Fang et al., 2021). Reduced belief in personal effectiveness has been associated with failures in pursuing work and other independent living goals (Rüsch et al., 2005). Higher levels of PSE have been correlated with positive parenting outcomes, where these parents were more likely to use nurturing, supportive and consistent approaches in their interaction with their children (Albanese et al., 2019). Whereas low PSE has been highlighted as a risk factor for harsh and inconsistent parenting and negative parent-child relationships (Albanese et al., 2019). Research found that parents with low PSE were more likely to resort to punitive or inconsistent disciplinary practices and were also less likely to engage positively with their children (Albanese et al., 2019)

Women's experiences of adverse childhood events, including CSA, physical abuse and neglect

Another individual-level factor was a history of adverse childhood events. These were very common among the women in the study. These adverse events included physical abuse, CSA and neglect. CSA was specifically reported among the women living with all three of the epidemics, while other forms of abuse, such as physical abuse and neglect were prevalent in the other combinations perpetrated by parents or relatives (Chapter 6). Research indicates that a history of childhood maltreatment can significantly influence, adult parenting practices (Greene et al., 2018). A systematic review of 97 studies found associations between parental childhood victimization and various parenting behaviours. Specifically, parents with a history of physical abuse or having witnessed violence in childhood were more likely to engage in abusive or neglectful parenting (Greene et al., 2018). The cumulative effect of multiple types of maltreatment, such as physical, sexual and emotional violence and neglect increasing the risk of abusive parenting (Greene et al., 2018). The trauma from childhood abuse can lead to emotional dysregulation, which affects parenting style (Cao et al., 2017). These parents often struggle with managing stress and controlling impulses, potentially resulting in abusive reactions (Cao et al., 2017; Dvir et al., 2014). Additionally, the experience of maltreatment in childhood may also lead to MH challenges such as depression, anxiety and PTSD, which have been found to impair

judgment, increase irritability and decrease emotional availability(Springer et al., 2007; Widom et al., 2007). These MH challenges hinder the parent's capacity to provide positive discipline, communication and emotional support (Banyard et al., 2003; Libby et al., 2008; Pears & Capaldi, 2001; Vásquez-Echeverría et al., 2022).

8.7. Interpersonal level factors influencing parenting practices

Relationship with father of children

At the interpersonal level, the women's relationships with the fathers of their children had a direct impact on their mental health and how they related with their children. Research shows that strained parenting relationships can increase the risk of MH challenges, such as depression and maternal distress (deMontigny et al., 2020). Conversely research indicates that a good relationship between the mother and father of the child is associated with more effective parenting and positive parenting and family outcomes (Carlson & McLanahan, 2006; Rueger et al., 2011). Studies show that parents who report higher relationship satisfaction are more involved in parenting tasks, including direct caregiving activities such as feeding, bathing and playing with the child (Kershaw et al., 2014). These parents also reported more positive experiences in their role as parents, feeling more joyful, fulfilled and competent in handling parenting responsibilities (Kershaw et al., 2014). Additionally, the positive association between relationship quality and parenting is said to hold true regardless of marital status (Carlson & McLanahan, 2006). Our research findings align with these studies. We found that the women who had challenging relationships with the father of their children felt dissatisfied with parenting and struggled connecting emotionally with their children. In contrast the parents who had good relationships with the fathers of their children irrespective of whether they were still together reported, being happy and satisfied with their parenting role.

Relationship with extended family

Additionally, at the interpersonal level, extended family relationships had a notable impact on how women parented. In several cases within the qualitative study, participants described situations in which family members, in particular grandparents or aunts took on primary caregiving responsibilities. This occurred both in contexts where the home environment was considered unsafe due to an abusive partner and when women were unable to meet the financial needs of their children. In some instances, family members offered practical and financial support, helping women maintain some degree of involvement in their children's lives. In others, the children were relocated to live with relatives, closer to schools or in more stable environments, which resulted in the mothers having limited day-to-day caregiving roles.

This shift in caregiving responsibilities appeared to influence parenting practices, particularly in the IPV-MH-HIV group based on the qualitative study findings, where the women reported not using any form of corporal punishment. While this cannot be interpreted as an endorsement of harsh discipline, it is possible that physical separation from children may have altered how parenting was conceptualised or enacted. These dynamics reflect the complex ways in which caregiving is distributed and negotiated within extended family networks

Research has shown that kin-based caregiving arrangements can be protective in contexts of adversity, reducing risks associated with child maltreatment and improving household stability (Ariyo et al., 2019; Younas & Gutman, 2023). These dynamics can complicate attachment processes or dilute consistent parenting practices, particularly in high-stress environments. In some cases, the involvement of extended family in caregiving, while providing essential stability and support may also contribute to role ambiguity for mothers. When children live with relatives, especially in situations where mothers are not financially secure or are unable to provide day-to-day care, mothers may feel uncertain about their role in guiding or disciplining their children. This can lead to a diminished sense of parental authority and influence, further shaping parenting practices in complex and sometimes unintended ways.

8.8. Structural factors influencing parenting practices

Poverty and food insecurity

At the structural level, we found that the women's experiences of unemployment, poverty and food insecurity, significantly impacted their ability to provide for their children. This inability to provide affected the women's self-efficacy in parenting, as they often perceived themselves as inadequate because they could not meet their children's needs. This aligns with research showing that parental inability to fulfil their children's needs can lead to feelings of inadequacy and conflict among parents (Ho et al., 2022). Moreover, research indicates that poverty significantly impacts MH, and maternal MH is a critical factor influencing the quality of parenting (González et al., 2023). Poverty often leads to higher stress levels due to financial difficulties, job insecurity and the pressure of providing for the family. This increased stress can cause parents to react negatively towards their children and adopt harsher parenting practices (Ho et al., 2022).

Gender inequality

Gender inequality was a significant structural factor impacting the women's lives and in turn their parenting (Chapter 6). The women in the study who were in abusive relationships shared that they stayed in these relationships, where their children were also exposed to the violence, because they were financially dependent on their partners. This finding aligns with extensive literature indicating that economic dependency often forces women to stay in abusive relationships, making it difficult for them to create a safe environment for their children (Dhungel et al., 2017). Marital dependency theory posits that it is more challenging for women to leave abusive relationships without the financial resources of their own, consequently this lowering their ability to negotiate change (Kalmuss & Straus, 1982). Women's economic dependency on men is often as a result of gender inequality, which limits their access to education, employment, and financial independence (Percept Actuaries and Consultants, 2023). South Africa has been reported as one of the most unequal countries in the world, with the inequality being extremely gendered (Oxfam South Africa, 2020). Although women's participation in the labour market has increased since 1994, they still fair poorer than men in terms of employment, earnings and job

security. Statistics from 2022 found that women were 18% less likely to participate in the labour market and 9% more likely to be unemployed (Percept Actuaries and Consultants, 2023; Statistics South Africa, 2023b). In communities such as the study site, it is common for women to leave school before completing their education. Some of the women reported interrupted schooling because they had to stay home and look after their siblings, which further reduced their job opportunities leading to dependency on their partners. Consequently, women who remain in abusive relationships due to financial constraints are likely to experience higher levels of stress, anxiety and depression because of the abuse (Ellsberg & Emmelin, 2014b; Stewart & Vigod, 2017).These mental health challenges can negatively impact their parenting practices by impairing the mother's ability to provide positive discipline, communication and emotional support creating an environment that adversely affects the children's well-being and development (Wolford et al., 2019).

8.9. Coping strategies among women living with the IPV, MH and HIV syndemic

The coping strategies adopted by the women can also be understood from a socio-ecological lens, with different strategies existing at different levels of the model. These coping strategies significantly impacted how the women parented.

Individual level coping strategies

Acceptance /Acquiescence as a coping strategy and the impact on parenting

Acceptance was a cross-cutting coping strategy among all the women from the different syndemic groups in our study (Silima et al., 2024a). Women living with IPV shared that they had to accept the abuse and endure it because they did not want to report their partners, fearing their arrest (Silima et al., 2024a). This acceptance can be interpreted as acquiescence, where the women complied with the situation, despite their inherent dissatisfaction. A study on children living with parents with mental illness found that acquiescence emerged as a significant coping strategy, involving accepting and adaptation to their circumstance in a way that prioritized the needs and wellbeing of their mentally ill parents over their own (Blake-Holmes et al., 2023).

Similarly, women experiencing IPV in our study often prioritized keeping their partners out of prison over their own safety, and in some cases, the safety of their children. Research shows that survivors of violence who have accepted or acquiesced to the violence are less likely to disclose or report the abuse, as well as engage in help seeking behaviours that could help them leave the violent relationship (Fernández-Antelo et al., 2020; World Health Organization, 2009). However, a quantitative study in WESCA, exploring the relationship between attitudinal acceptance of IPV and MH outcomes found that women who had accepted the violence showed less MH symptoms and lower odds of suicide ideation (Ibala et al., 2021). The reason for this might be that these women experience less cognitive dissonance, thus exhibiting few MH symptoms (Ibala et al., 2021). It is important to note that although acceptance of IPV may have provided temporary relief from the mental distress for the women, it does pose long term risks by discouraging help-seeking and also facilitates an environment that normalizes violent interpersonal interaction (Ibala et al., 2021). The acceptance or acquiescence of violence can create a hazardous environment for both the women and their children, impacting their parenting practices and the overall well-being of the family.

On the other hand, for women living with HIV, their acceptance of their HIV positive status had a positive impact on their lives. Once they accepted their HIV status, they were able to disclose to their families and also start taking treatment (Silima et al., 2024a). Research indicates that acceptance of HIV status is critical for an individual's engagement in care, access to social support and quality counselling (Horter et al., 2017). Engaging in treatment significantly improves the quality of life for people living with HIV, this encompasses physical, psychological and social factors, due to the increased adherence (Bisangamo et al., 2024). The acceptance and subsequent engagement in treatment may have had a positive outcome for parenting. Women who accepted their HIV status and adhered to treatment, may have experienced better health and overall wellbeing. This improved physical and MH could enable them to engage in more positive parenting practices. Moreover, the enhanced social support and counselling can provide additional resources and stability, creating a healthier and more supportive and caring environment for both mothers and their children.

Harmful substance use as a coping strategy and impact on parenting

Women who had experienced IPV, often turned to substances as a way of coping, which could potentially impact their parenting practices. Research has found that harmful substance use is common among individuals exposed to IPV, with an increased risk of transitioning to substance use disorder (Gezinski et al., 2021). Additionally, this harmful substance use among women exposed to IPV has often been reported as a means of coping with the physical and emotional pain (Gezinski et al., 2021). Harmful substance use can significantly impact the quality of parenting. Parents struggling with substance use often exhibit inconsistent and neglectful parenting behaviours, further affecting the parent-child relationship (Lander et al., 2013). However, it is important to note that some parents with substance use disorder develop coping mechanisms that help them manage their substance use while trying to fulfil their parenting duties. These strategies include delegating caregiving tasks to other family members, or using substance in a way that minimizes the immediate impact on the children (Lander et al., 2013).

Commitment to parenting

Women's commitment to their children was noted as an important coping strategy (Silima et al., 2024a). The women reported that they often found the strength to carry on from their commitment to their children, this was specifically mentioned by those in the IPV-MH-HIV group (Silima et al., 2024a). Our findings align with qualitative research conducted in Indonesia, which found that mothers who were HIV positive, with an awareness of their importance to their children and families, used this awareness as a significant coping strategy (Fauk et al., 2023). Responsibility towards their children especially in situations where their children were also HIV positive, encouraged them to cope with fear, stress and anxiety. This coping strategy was also seen to enhance ART adherence, as mothers were motivated to stay healthy for the sake of their children (Fauk et al., 2023).

Interpersonal level coping strategies

Religion and Social support

Women living with the HIV-MH syndemic, specifically mentioned religion as an important coping strategy. Their faith and prayer to a higher power gave them comfort and hope for a better future (Silima et al., 2024a). It was not only their faith but also social support from other congregants at the church that helped them cope. This finding aligns with other literature indicating that both positive religious coping (praying, comfort in one's faith) and religious social support have been associated with lower levels of depression (Brewer et al., 2015). Additionally congregational support has been associated with better self-reported current health among individuals(Brewer et al., 2015). This support includes emotional, spiritual and practical assistance from fellow church members, which has the potential to enhance individual's well-being (Brewer et al., 2015). Additionally, the sense of community and belonging is a critical factor in reducing stress and anxiety (Brewer et al., 2015). It can be argued that positive religious coping and the social support especially among the women living with HIV-MH, could have helped in reducing harsher parenting among this group.

8.10. Future interventions

Improved parenting interventions that incorporate IPV and long- term MH services

In South Africa the need for parenting programmes has been acknowledged by the Children's Act (No.38 of 2005), mandates Provincial Departments of Social Development to provide and fund prevention and early intervention services (Budlender et al., 2011). Chapter 8, Paragraph 144 (1)(b) of the Act, highlights the importance of interventions that develop parenting skills as a critical strategy to promote children's safety and well-being(Centre for the Study of Violence and Reconciliation, 2009)

Despite the existence of many parenting programmes in South Africa (Wessels, 2015), several shortcomings persist. Firstly, there is a lack of parenting interventions in rural

and peri-urban areas. A review found that most (72%) parenting programmes are urban based (Wessels, 2015). Additionally, these programmes in South Africa often lack a solid theoretical framework and have limited monitoring and evaluation processes. Effective programmes need to be based on empirical evidence and well-articulated theories (Wessels, 2015).

Our study identified a critical need for parenting interventions that address both IPV and poor MH among parents. Although there are interventions that address parenting in the context of IPV, these are mostly in high-income countries (Austin et al., 2017). Such interventions are crucial for mitigating the adverse effects of violence on both mothers and their children. They provide tailored support to enhance parenting skills, improve maternal MH, and promote positive child development (Austin et al., 2017). However, IPV is often not explicitly addressed in general parenting interventions, and where it is, the focus tends to be on education-based approaches.

There is, however, limited evidence supporting the effectiveness of education-only interventions for IPV prevention, especially in the absence of structural change. Reviews of global IPV prevention strategies suggest that interventions are more effective when they address underlying drivers, including economic insecurity and harmful gender norms. Programmes that incorporate economic empowerment, community mobilisation, and gender-transformative components, such as IMAGE in South Africa or SASA! in Uganda, have shown reductions in IPV by targeting the broader social and economic context in which violence occurs (Abramsky et al., 2014; Jewkes et al., 2008)

Parenting interventions in South Africa should therefore integrate IPV prevention efforts by screening for IPV and providing supportive referrals. Screening in parenting interventions should be conducted by trained counsellors using validated tools (Iverson, 2015). Given the high prevalence of IPV among women, it is likely that many caregivers enrolled in parenting programmes are currently experiencing or have a history of IPV. For those identified, MH screening, particularly for depression, suicidality, and PTSD is critical. While some existing programmes include psychosocial elements, these tend to be short in duration and limited in depth. MH interventions for women affected by IPV need to be longer-term and contextually responsive to the sustained impact of trauma(Bonomi et al., 2006).

Evidence-based programmes such as Parenting for Lifelong Health (e.g., Sinovuyo Caring Families) have shown promise in improving parenting outcomes in low-resource settings. However, they are often short (typically 12 weeks), costly to scale, and do not directly address IPV or mental health challenges beyond some emotional regulation exercises (Doubt et al., 2015, 2017). In resource-constrained environments such as South Africa, cost-effective and sustainable interventions are essential due to the shortage of mental health professionals and services (Benjamin et al., 2021).

One promising model is StrongMinds, a community-based intervention delivering group interpersonal psychotherapy to women experiencing depression in Uganda, Zambia, Kenya, and the USA. The intervention is delivered both in-person and via telephone over 12 weeks and is sustained through peer-led groups after the initial facilitation phase. By integrating MH support with existing programmes in livelihoods, food security, and health, StrongMinds demonstrates how leveraging existing systems can expand impact while reducing implementation costs (World Health Organization, 2022b). This model may offer valuable insights for adapting scalable, trauma-responsive parenting support in South Africa.

Public healthcare interventions that incorporate IPV and MH screening

The research highlights the importance of integrating IPV and MH into public health (Hatcher, Stöckl, et al., 2016; Woollett & Hatcher, 2016), and our study underscores this need. Groote Schuur Hospital in Cape Town has initiated a universal routine screening for IPV since 2023, alongside upskilling healthcare workers to enhance the detection, support and referrals for patients experiencing IPV (Groote Schuur Hospital Trust, 2023). While IPV screening has also been as also been integrated into some antenatal and reproductive health services, its implementation remains inconsistent due to challenges such as inadequate staffing, insufficient provider training, the absence of standardised protocols, and underdeveloped referral systems(Hatcher, Woollett, et al., 2016).

However, it is important to note that IPV screening in isolation has limited impact, particularly when not linked to comprehensive follow-up services. A growing body of evidence suggests that routine IPV screening does not, on its own, lead to improved

health outcomes unless it is accompanied by effective referral systems, psychosocial support, and access to specialised services (Feder et al., 2009; O'Doherty et al., 2014)

Therefore, IPV screening should not be viewed as a standalone intervention but rather as part of a broader, integrated model of care that includes trained providers, clear protocols, mental health and legal referrals, and mechanisms for follow-up and safety planning. In this context, screening can serve as an entry point to more meaningful support, particularly when providers are trained in trauma-informed care and equipped to respond to disclosures with empathy, confidentiality, and actionable resources.

Regarding MH, despite the high rate of MH challenges among women in South Africa (Craig et al., 2022; Moultrie & Kleintjes, 2006) , there is minimal screening and treatment in healthcare settings. Lovero et al (2019) found that there was some integration of MH services within TB and MCH services across four districts in South Africa, but significant improvement was still needed (Lovero et al., 2019). The main challenges included insufficient funding, lack of training and resources, poor coordination at the district level and low MH awareness. Therefore, to enhance implementation there is a need for ongoing training for nurses and counsellors as well as mental health practitioners on screening tools and assessments, along with increased funding and resources (Lovero et al., 2019). Additionally, establishing a robust referral network and support system for patients who screen positive is essential.

A multi-disciplinary and multi-sectoral approach is needed to respond to the syndemic

A multi-disciplinary and multi-sectoral approach is essential in responding to the IPV, MH and HV syndemic. Interventions must address the social determinants at the structural (poverty and food insecurity), interpersonal (romantic and family dynamics) and individual (experiences of childhood trauma) levels that contribute to the epidemic concentration. For instance, a mixed methods review demonstrated that financial and cash transfer programs have the potential to reduce IPV by alleviating poverty related stress, reducing marital conflict by eliminating arguments over money and enhancing women's bargaining power and self-worth (Buller et al., 2018). According to Singer and Clair (2003), applying syndemic theory involves more than just controlling the epidemics or social conditions respectively, it also requires

addressing the environmental forces that tie these disease together (Singer & Clair, 2003). Responding to the syndemic necessitates interdisciplinarity with collaboration across different sectors, including healthcare, education, law enforcement, community organizations, financial, and policy makers. This comprehensive approach is necessary to tackle both the biological synergism and structural and contextual factors influencing the epidemics (Singer & Clair, 2003).

Using a life-course approach in interventions

A life course approach is crucial, in recognizing that women's lifetime experiences, including their past traumas and relationships, significantly influence their behaviour and health outcomes (Khaw & Hardesty, 2007). Therefore, interventions need to be tailored to various life stages, that incorporate comprehensive support systems that address current needs while also considering past experiences. Such interventions include trauma informed practices in all services to address the impact of childhood trauma and previous relationship on current behaviour or health (Gormley et al., 2022) . Such an approach to the women's MH challenges would consider the different social and biological factors over the person's lifespan that may have had an impact, for instance research indicates that disorders that were previously perceived to emerge in adulthood may actually have origins early in life (Koenen et al., 2013). Additionally in terms of IPV, this approach could be valuable by looking at the critical points in a person's life where specific events or risk factors may have occurred that may have increased future victimization, and as a result provide suitable intervention (Tenkorang & Owusu, 2018).

Policy Implications

Our research recognizes that addressing IPV and maternal mental health can significantly impact children's safety and wellbeing. To truly advance the goals of the Children's Act (No. 38 of 2005), policy needs to integrate support for women facing IPV and poor MH. Ensuring safe environments for children, requires policies that also prioritize the safety and human rights of women in violent relationships. To effectively reduce child abuse in South Africa, maternal IPV and poor mental health must be addressed comprehensively.

8.11. Limitations and next steps for research

There are several limitations of this research. Most of the limitations have been outlined in Chapter 3 as well as the individual Chapters, however there are additional issues regarding the overall thesis that deserve mention.

Firstly, the scoping review only included studies involving mothers and female caregivers experiencing the co-occurring epidemics and excluded men who were caregivers. While this focus reflects the reality that women are predominantly the primary caregivers and that the epidemics disproportionately impact them, it excludes men who also live with these epidemics and serve as primary caregivers. Including the perspectives of male caregivers could have provided valuable insights into the broader impact of these syndemics. Additionally, the review was limited to studies published in English, potentially overlooking relevant research in other languages.

In the qualitative research component, there were several limitations. Firstly, we did not intentionally question the women about their experiences of sexual violence in childhood during the interviews, which may have led to missing these experiences in participants who did not voluntarily disclose them. Moreover, as with any research, the positionality of the researcher can influence the participants' responses. However, as mentioned earlier, measures were taken to minimize this risk. Additionally, there is a potential risk of recall bias, where participants' ability to accurately recall past events and experiences could have impacted the quality of the data, particularly in a study such as this, that explores sensitive and possibly traumatic experiences of violence. Memories of these events may be distorted or altered over time (236). Participants were also selected based on their responses on the questionnaire, and they may have under-reported their experiences there, resulting in their not being identified for the qualitative study. For instance, participants who had never tested for HIV but reported as negative were included based on self-report alone.

Additionally, while the study focused on harsh and inconsistent parenting practices, it was not explicitly designed to elicit narratives of positive parenting. This may have constrained participants’ opportunities to describe nurturing, supportive, or resilience-based practices used in caring for their children. As a result, the analysis may underrepresent caregiving strengths and protective strategies, offering a more limited

picture of the caregiving experience. I acknowledge this as a limitation and have further addressed in the future research recommendations.

Furthermore, child neglect was not included in the final quantitative analysis due to the small number of women who had reported and the challenges with measure used. Some of the screening questions did not fully conceptualize neglect as a parent having resources but purposefully withholding them from the child. Instead, they asked for instance, whether the child was not provided a safe place to live without actually considering the parent's ability to provide the safe place. This is an important distinction, especially in communities where poverty is prevalent. Future research on the IPV, MH and HIV syndemic should explore the impact of neglect, as it is a serious form of child maltreatment. Research indicates that child neglect is associated with negative outcomes such as physiological changes in the brain, academic difficulties, criminal behaviour and mental health problems (Avdibegović & Brkić, 2020; V. Lee & Hoaken, 2007; Spratt et al., 2012).

Another limitation is that the quantitative analysis had small number of women who tested for HIV and tested HIV positive (n=96). This small sample size makes it difficult to confidently draw conclusions about the impact of HIV within the study population. This limitation highlights the need for further research that purposively sample HIV positive women to better understand the specific impacts of HIV on parenting and within the context of the syndemic. Such targeted research would provide more robust data, allowing for better insights into the interactions.

Our study was nested within a larger research project that did not specifically focus on the IPV, MH, HIV syndemic which may have limited the number of relevant participants. It would be valuable for future research to purposively sample women experiencing these epidemics in order to obtain a larger sample size. By specifically targeting women who are living with these intersecting epidemics, future studies could provide more comprehensive data on the syndemic impact.

In addition, while our qualitative findings revealed that several HIV-positive mothers were not living with their children, a factor that may influence parenting practices, this pattern was not reflected in the quantitative sample, where most HIV-positive mothers were co-residing with their children. This discrepancy likely reflects differences in sampling: the qualitative study purposively recruited participants based

on syndemic exposure, while the quantitative component drew on a larger, more representative sample. As such, the reduced risk of harsh parenting among HIV-positive mothers observed in the quantitative analysis may reflect broader caregiving dynamics that were not as prominent in the qualitative findings. This limitation has implications for interpreting the relationship between HIV and parenting outcomes across different methodological components.

We relied solely on the parents' self-reports of emotional and physical violence toward their children and did not interview the children. While corporal punishment is normalized in South Africa, which may reduce underreporting, there still exists the potential for bias or omission in parental reports. Interviewing children would provide a more comprehensive understanding of parenting practices and the true extent of violence. Future research should include both maternal and child reports to enhance the rigor and completeness of the findings, offering a fuller and more accurate picture. This dual approach would help in understanding the nuances of family interactions and the impact of different forms of discipline on children's well-being.

Finally, we used the WHO's domestic violence instrument (Garcia-Moreno et al., 2005) to measure women’s experiences of violence, including emotional violence. We believe that the prevalence of emotional violence in the study may have been underestimated. As Moreno et al (2005) posit, emotional violence is complex to measure across different cultures making aggregate prevalence measures challenging without further analysis (Moreno et al., 2005). Additionally, the limited research on emotional violence compared to physical or sexual violence has made it difficult to develop valid measures.

Chapter 9: Recommendations and Conclusions

Chapter 9: Recommendations and Conclusions

The research findings offer several important recommendations in the field of child maltreatment as well as the IPV, MH and HIV field. Table 5 outlines gaps in the literature that existed prior to this doctoral research. It also summarizes the main findings, highlighting how they address these evidence gaps. Finally, the table presents recommendations and their relevance for research, policy, clinical practice and/or civil society organisations

Table 6: Recommendations based on doctoral research findings

Evidence gaps at start of doctoral research	**Key findings from doctoral research**	**Recommendations for policy, research, clinical practice and theory**	**Audience**
There is no research on the synergistic relationship between the IPV-MH-HIV syndemic and parenting	We found a synergistic relationship between the IPV-MH syndemic and maternal use of emotional violence and physical violence.	Integrate interventions targeting IPV, MH challenges to address their combined impact on parenting.	Policymakers, Health Providers, Researchers
Extant literature around HIV and parenting finds that women living with HIV are at high risk of harsh and inconsistent parenting	The biggest contributor to harsh and inconsistent parenting practices in the epidemics is the IPV-MH relationship.	Parenting interventions need to specifically integrate IPV and MH into programming. Policy needs to prioritize IPV and MH reduction as a pathway to also ending VAC.	Community Organizations, Health Providers, Policymakers
Research on the IPV, MH, and HIV syndemic and impact on parenting doesn't exist in WESCA	Although there are many studies which look at the syndemic in relation to other outcomes, and look at the co-occurrence, I am the first to measure the syndemic impact of the epidemics on parenting practices.	Conduct further research, especially longitudinal studies in WESCA to explore the syndemic impact on parenting. Advocate for funding and resources to support studies in under-researched areas. Use this research to inform regional policies and intervention strategies.	Researchers, Funders, Policymakers
Extant literature on the impact of IPV, MH and HIV on physical violence and limited on emotional violence	This research highlights the prevalence of emotional violence as a result of IPV-MH syndemic	There is a need to address emotional violence alongside physical violence in interventions	NGOs, and community-based organizations

Conclusion

This research aimed to explore the experiences of women living with the different combinations of the IPV, MH and HIV syndemic and how they coped in their daily lives and how the epidemics influenced their parenting practices. Using mixed-method research strategies across four separate but interrelated studies, we aimed to address specific objectives that provided insight on the complexities faced by the women. The key findings significantly contribute to the existing literature on the intersection of these epidemics and the impact on child maltreatment. It is imperative for parenting interventions to incorporate comprehensive support and prevention measure for women living with the IPV-MH syndemic, as this syndemic has a significant impact on parenting practices. Addressing the syndemic can lead to more effective interventions that not only support women, but also promote healthier family dynamics for future generations as well.

A multi-sectoral and multi-disciplinary approach is essential in tackling the structural and contextual factors that exacerbate the syndemic. Collaboration across healthcare, social services, education and law enforcement sectors can create a more supportive environment for affected women and children. Furthermore, there is a need for more longitudinal research to deepen our understanding of the syndemics long-term impact on parenting, especially in low-and-middle income countries where such studies are scarce. This research will be valuable in in informing targeted interventions that are culturally sensitive and contextually relevant.

Ultimately, to reduce the prevalence of child maltreatment it is critical to focus on supporting women living with the intersecting challenges of IPV, MH and HIV and in particular the IPV-MH syndemic. By addressing these challenges and the root causes, we are able to improve outcomes for both mothers and their children and create healthier communities.

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Chapter 10:

Appendices

Chapter 10: Appendices

Appendix A: Turnit-in report

30 August 2024

Silima M thesis _For Turnit in 30082024.docx

ORIGINALITY REPORT

6%	6%	%	2%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	ora.ox.ac.uk Internet Source	1%
2	www.ncbi.nlm.nih.gov Internet Source	1%
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4	hdl.handle.net Internet Source	1%
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9	bmjopen.bmj.com Internet Source	<1%

Appendix B: Ethical approval from Ethics Research Committee in the School of Science and Political Sciences at the University of Edinburgh

SCHOOL *of* SOCIAL *and* POLITICAL SCIENCE
Social Policy

The University of Edinburgh
Chrystal Macmillan Building
15A George Square
Edinburgh EH8 9LD

Telephone: 0131 651 5471
Email: sudeepa.abeysinghe@ed.ac.uk

Dr Franziska Meinck
School of Social and Political Science
Social Work Subject Area

20/02/20

Research Ethics Approval

Ref No: 264227

INTERRUPT_VIOLENCE (Interrupting the Intergenerational Transmission of Violence: a longitudinal mixed-methods study in South Africa)

Dear Franziska,

The above application has been considered on behalf of the School of Social and Political Science Research Ethics review process, in accordance with the procedures laid down by the University for ethical approval of all research involving human participants.

I am pleased to inform you that, on the basis of the information provided to the Ethics Committee, the proposed research has been judged as meeting appropriate ethical standards, and accordingly approval has been granted at level 3.

Should there be any subsequent changes to the stated protocol, or if any ethical challenges unexpectedly arise in the field, you should submit details to the Ethics Committee for consideration. Given the complexity of this project, the committee also recommends a post-project review, and you should get in touch to trigger that process when necessary.

Yours sincerely,



Dr. Sudeepa Abeysinghe
Deputy Director of Research (Ethics and Integrity)

Appendix C: The Provincial Department of Health approval

health
MPUMALANGA PROVINCE
REPUBLIC OF SOUTH AFRICA

Indwe Building, Government Boulevard, Riverside Park, Ext. 2, Mbombela, 1200, Mpumalanga Province
Private Bag X11285, Mbombela, 1200, Mpumalanga Province
Tel I: +27 (13) 766 3429, Fax: +27 (13) 766 3458

Litiko Letemphilo | Departement van Gesondheid | UmNyango WezeMaphilo

Enq: 013 766 3766/3511
Ref: MP_202012_002

Research Approval Letter

Dr Franziska Meinck
VAL TRIANGLE CAMPUS
1174 Hendrick Van Eck Boulevard
Vanderbijlpark, 1900

TITLE: APPLICATION FOR RESEARCH APPROVAL: INTERRUPTING THE INTERGENERATIONAL TRANSMISSION OF VIOLENCE

Dear Dr Meinck

The Provincial Department of Health Research Committee has approved your research proposal in the latest format you sent.

- Approval Reference Number: MP_202012_002
- Data Collection Period: 20/12/2020 to 20/11/2021.
- Approved Data Collection Facilities: Ehlanzeni District Municipality Offices

Kindly ensure that conditions mentioned below are adhered to, and that the study is conducted with minimal disruption and impact on our staff, and also ensure that you provide us with a soft or hard copy of the report once your research project has been completed.

Conditions:
- *Researchers not allowed to make copies or take pictures of medical records.*
- *Kindly notify the facility manager BEFORE you start with data collection to ensure that conditions are conducive in the facility*

Kind regards

DR C NELSON
MPUMALANGA PHRC CHAIRPERSON
DATE: 21 - 12 - 2020

MPUMALANGA
THE PLACE OF THE RISING SUN

Appendix D: Ethical Approval from North-West University Health Research Ethics Committee

NWU®
NORTH-WEST UNIVERSITY
NOORDWES-UNIVERSITEIT
YUNIBESITI YA BOKONE-BOPHIRIMA

Private Bag X6001, Potchefstroom
South Africa 2520

Tel: 018 299-1111/2222
Web: http://www.nwu.ac.za

Health Sciences Ethics Office for Research, Training and Support

North-West University Health Research Ethics Committee (NWU-HREC)

Tel: 018-299 2092
Email: wayne.towers@nwu.ac.za

Dr F Meinck
Social Work
OPTENTIA

18 March 2022

Dear Dr Meinck

APPROVAL OF DOCUMENTS SUBMITTED DURING THE PROGRESS OF THE STUDY

Ethics number: NWU-00329-20-A1

Kindly use the ethics reference number provided above in all future correspondence or documents submitted to the administrative assistant of the North-West University Health Research Ethics Committee (NWU-HREC).

Study title: Interrupting the intergenerational transmission of violence: a mixed-methods longitudinal study in South Africa

Study leader: Dr F Meinck

Student: -

Application type: Single study

Risk level: **Adults: Medium**

Children: Category 3 – Greater than minimal risk with no prospect of direct benefit

You are kindly informed that the documentation related to the in-process requirement (as indicated below), that was submitted to the NWU-HREC, as indicated in your approval letter, was reviewed by the designated reviewers:

a. Copy of the goodwill permission letter from the Office on the Rights of the Child, granting access to the facilities to be used.
b. Copies of the permission letters from the remaining ward councilors to be included in the project, indicating that the study can proceed in the remaining wards.

The reviewers have indicated that the submitted documents are acceptable and that you as the researcher can proceed with implementing the aforementioned documentation in your approved project, if you are able to proceed with your research under the current alert level (please see comment regarding the continuation of the research below). It should, however, be noted that the following documentation is still outstanding:

a. Copies of the permission letters from the indunas to be approached in the study, indicating that the study can proceed.

Please note: Due to the nature of the study i.e. (face-to-face quantitative surveys and qualitative in-depth interviews with young people, their children and former primary caregivers in a community setting), this study will be able to proceed during the current alert level, following receipt of the approval letter. No additional COVID-19 restrictions have been placed on the study, other than that which is indicated under the COVID-19 risk mitigation strategy as indicated in the application documentation. The researcher must, however, ensure that before proceeding with the study that all research team members have reviewed the North-West University COVID-19 Occupational Health and Safety SOP.

We wish you the best as you conduct your research. If you have any questions or need further assistance, please contact the Faculty of Health Sciences Ethics Office for Research, Training and Support at Ethics-HRECApply@nwu.ac.za.

Yours sincerely

Digitally signed by Wayne Towers
Date: 2022.03.18 11:44:20 +02'00'

Head of Health Sciences Ethics Office for Research, Training and Support

Appendix E: HREC approval for PhD

UNIVERSITY OF THE WITWATERSRAND JOHANNESBURG	HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)

Office of the Deputy Vice-Chancellor (Research and Innovation)

TO:	Ms M Silima School of Public Health Medical School University E-mail: silimampho@gmail.com
CC:	Supervisor: Professor N Christofides; Drs F Meinck and N Woollett <Nicola.Christofides@wits.ac.za> and <HREC-Medical Research Office@wits.ac.za>
FROM:	Mr Iain Burns Human Research Ethics Committee (Medical) Tel: 011 717 1252 E-mail: Iain.Burns@wits.ac.za
DATE:	2022/07/20
REF:	R14/49
PROTOCOL NO:	**M220526** (This is your ethics application reference number. Please quote it in all enquiries, oral or written, relating to this study.)
PROJECT TITLE:	*Exploring the HIV/AIDS infection, intimate partner violence experience and poor mental health syndemic and its association with parenting amongst women in Mpumalanga*

Please find attached the Clearance Certificate for the above project. I hope it goes well and that an article in a recognized publication comes out of it. This will reflect well on your professional standing and contribute to Government funding of the University.



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UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

R49 Ms M Silima

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)
CLEARANCE CERTIFICATE NO. M220526

NAME: (Principal Investigator) Ms M Silima

DEPARTMENT: School of Public Health
Medical School
University

PROJECT TITLE: *Exploring the HIV/AIDS infection, intimate partner violence experience and poor mental health syndemic and its association with parenting amongst women in Mpumalanga*

DATE CONSIDERED: 2022/05/27

DECISION: Approved unconditionally

CONDITIONS:

NOTE: If contact information regarding student study participants is required, please contact the Registrar's office - <Nicoleen.Potgieter@wits.ac.za>

SUPERVISOR: Professor N Christofides; Drs F Meinck and N Woollett

APPROVED BY: CB Penny
Dr CB Penny, Chairperson, HREC (Medical)

DATE OF APPROVAL: 2022/07/20

This Clearance Certificate is valid for 5 years from the date of approval. An extension may be applied for.

DECLARATION OF INVESTIGATORS

To be completed in duplicate and **ONE COPY** returned to the Research Office secretariat on the 3rd floor, Phillip Tobias Building, Parktown, University of the Witwatersrand, Johannesburg.

I/we fully understand the conditions under which I am/we are authorized to carry out the above-mentioned research and I/we undertake to ensure compliance with these conditions. Should any departure be contemplated from the research protocol as approved, I/we undertake to submit details to the Committee. **I agree to submit a yearly progress report**. When a funder requires annual re-certification, the application date will be one year after the date when the study was initially reviewed. In this case, the study was initially reviewed in **May** and therefore reports and re-certification will be due in the month of **May** each year. Unreported changes to the study may invalidate the clearance given by the HREC (Medical).

Signature of Principal Investigator _____ Date _____

Appendix F: Distress Protocol

If the participant displays signs of significant emotional or psychosocial distress, the interview will be stopped. Participants will be offered counselling by the team's social worker who will assess whether onward referral to more specialist services is required. If the participant wishes to continue the interview they can do this at a time convenient for them but interviewers must not pressure them to do so. If participants disclose the nature of their distress, one of the below referral codes may apply.

Referral Codes

Codes or "referral flags" will appear throughout the questionnaire based on responses from participants to specific questions. The meaning of each code is consistent across all forms and each code requires different follow-up action. Below is an overview of all codes (updated to August 2019).

EMERGENCY REFERRALS CODES for child participants:

Code Black (Suicidality): This appears if participant has tried to kill themselves yesterday, in the last week or in the last month. Emergency referral if this happened in the last 24 hours.

Code Red 1 (Sexual abuse): Participant has been forced to have sex at least once this year, monthly or weekly. Emergency referral if this happened in the last 72 hours.

Code Red 2 (Emergency contraception): Following on from the Code Red 1, the participant has been asked if they want help to access emergency contraception and have answered yes. Emergency referral if this happened in the last 72 hours.

Code Red 3 (Sexual abuse): Participant has had their private parts looked or touched or been forced to look or touch someone else's private parts when they didn't want to in the at least once this year, monthly or weekly. Emergency referral if this happened in the last 72 hours.

Code Purple: Participant discloses experience of domestic violence or intimate partner violence. Emergency referral if weapons were involved.

Code Black AC: Adult participant discloses attempted suicide by their child.

Code Red AC: Adult participant discloses sexual abuse of a child

Other Codes:

Code Blue 1 (Emotional Abuse): Child has experienced any of the 10 emotional abuse items.

Code Blue 2 (Physical Abuse): Child has been hit hard with a hard item or hit hard enough to leave marks.

Code Blue 1 AC: Adult participant discloses emotional abuse of a child.

Code Blue 2 AC: Adult participant discloses physical abuse of a child.

Code F (Food insecurity): Child participant has gone more than 3 days without enough food in the house in the past week. Situation gauged by Fieldworker to see if food parcel or social services appropriate next steps.

Code T (Tuberculosis): This appears if participant has answered often to coughing up blood or that they have been tested and are still sick. This is more for the Fieldworker to stay safe e.g. positioning, make sure there is good ventilation by opening a window or going outside. Depending on severity, the Fieldworker may advice the participants to get tested.

Code B (Bilharzia): This appears if a participant states they have been peeing blood. Participants should be referred to the local clinic for testing and treatment.

First Steps for Any Referral

ALL referral information also pertains to adults at risk of harm. However, adults are not subject to mandatory reporting laws. The same steps in terms of linking them to services should be followed as with children but the adult has to agree to this. We cannot break confidentiality of what adults disclose in their interviews to any services UNLESS they disclose that A CHILD IS AT RISK OF HARM and we are able to identify this child through the disclosure of the adult!

RAPE

If a child discloses having been raped in the past 72 hours you need to act fast!

Assess if the child has accessed emergency contraception (if a girl) and post-exposure prophylaxis (PEP) for HIV prevention

If NOT, take them to the nearest rape clinic or hospital

NOTE: Every rape victim has the right to PEP and contraception within a 72hr period after the rape whether or not they open a case with the police

Make sure to follow the steps outlined below – see Section 2.1 CODE RED

SUICIDE

If a child discloses having attempted suicide in the past 24 hours you need to act fast!

Assess if the child has accessed clinical care and what the outcome was

Assess if they are still feeling suicidal

If you have any doubts, take them to the nearest hospital and ask for them to be admitted – see Section 2.2 CODE BLACK

Initial Assessment

A child has just disclosed their experience (of suicide, rape, abuse, illness, etc.) to you. Now what?

Step 1: Safety first

Assess whether anyone is in immediate danger. Use the following questions as a guide.

Is there a violent person in this home who may be angered that I am speaking to their child?

Is it safe for me/a team member/the child to be in the home right now?

Is the child at risk today or tomorrow?

Is the child at a different type of risk in this moment than they have been previously?

Is the child in a different kind of risk given that they have spoken to you?

If there are safety concerns for you (the research team), leave. We can figure this out from a safe place. Make sure the participant has a phone number to reach you at and reassure them that you are going to get in touch very soon.

Step 2: Reassurance

You're not in immediate danger, and neither is the child you are speaking to. Excellent! Your job now is to reassure the child that it is okay, that they did the right thing by telling you, and that absolutely nothing about this situation is their fault. It is crucial that the child knows that you heard and believed them. There is a lot of research from a lot of countries that shows that victims need to feel you believe them. When this is not the case, victims often develop significantly higher levels of trauma, suicidal thoughts, and sometimes psychosis.

The Golden Reminder

Absolutely nothing about what has happened to the child or their family is the child's fault. Say this as many times as you can, and mean it. Say it in different ways. In many cases, the child will have been blamed for their own abuse or situation, and even where this is not the case, they are likely to be carrying a lot of internalized shame. Remind them that terrible things happen to lots and lots of people. They did nothing to deserve this, and they couldn't have done anything to prevent it. It is also important to emphasize that it was not their fault and that nobody has the right to hurt them or pressure them into something they don't want to do or say.

Thank and praise the child for disclosing this hard piece of information to you.

I really appreciate that you told me about that. I know it can be really hard to share difficult things that have happened. Thank you so much for trusting me enough to tell me. You were really brave to go through that and to share it with me.

There will be a number of questions that a child might ask following disclosure, which research teams should be prepared for.

This may include:

Will I be punished?

Will I have to stay in that house?

Will I feel better soon?

Will I be taken away?

Don't make any promises. The child is in a vulnerable space now, and your job is to listen, believe, and reassure. As you already know, we can't guarantee any outcome because we don't offer any services!

Step 3: Pace yourself

Remind yourself to take it slow. Be aware of your own response to this situation as an 'outsider'. Remember that the incident that you are dealing with is traumatic because you are hearing about it for the first time. Most likely, this child has been dealing with the situation for much of their lives. Don't offer a "quick fix" or referral right now. It is more helpful to wait before taking action and consult the team social worker and others in order to devise a long-term 'solution'. This is especially the case with rape and abuse situations, unless we are talking about a CODE RED emergency referral.

Step 4: Information gathering

If the child is calm and able to talk to you, ask questions to get a clearer picture of what is going on and what ideas, steps, or solutions the child and family are open to. Some example questions are below, depending on the type of referral.

If the child is traumatized, it may take some relationship building before they are ready to open up. Things we have done in the past to encourage children to share difficult experiences include offering that they go to counselling at Childline or another trusted place. You can offer them something safe like support around going to

school or just that most children like to talk to someone from time to time. You can also take them to lunch and chat with them there. Once you and the child are comfortable together, you can try to steer the conversation toward the referral situation.

Remember that it is easy for a child who has survived abuse or rape to feel like they are being put on trial when being asked questions, so do your best to ensure that questions are asked in a supportive way.

“Would it be okay if I ask you a few questions about what happened that will help us figure out the best way to support you?

You don’t have to tell us anything that you don’t want to, but some more information will help us figure out the best way to keep you safe and get you help.”

The story will inevitably expand and change as you proceed

Every family member will have a different take on what is going on, and the child is likely to change his or her story over time (especially if the child is young and sexual abuse or rape is involved). This is okay. Even if you have reported the case to other agencies or authorities, they will be used to this too.

“Types” of Referrals and Next Steps

Different types of referrals will call for different courses of action. Some will be emergency referrals, while most others will be less urgent, but still a cause for concern.

Code RED Sexual/Code Blue or Purple (ongoing/in home or community)

Step 1: Assessment of type of referral

If the **Code RED** happened within the last 72 hours, it is an **EMERGENCY REFERRAL**. If this is the case the child is eligible for emergency contraception (if a girl) and post-exposure prophylaxis (PEP) for HIV prevention. Both can only be given within **72 hours** of the occurrence of unprotected intercourse. It is very important to be aware of this and to offer help accessing that service. Any rape survivor has the right to access PEP following an HIV-test at their local clinic to determine whether they are already HIV-positive.

Step 2: Moving forward

If it is not an emergency referral, involve the team social worker and talk to the child and family and find out what the child wants. Sometimes the family already has a solution that they are trying to implement, like having the child move out of town to live with relatives or taking the rapist to court. If this is the case, you can try to support the participant and the family in line with their proposed solution. For example, if they want to move the child, our Emergency Fund can cover the transport costs. If they want to go to court or the police, we can accompany them and help them seek out supportive/sympathetic people there.

Go to the local police to see if you can get information about what happens with reported rape cases: Is the perpetrator held in jail upon allegation of the abuse or is it reported, and the perpetrator released home pending investigation? Are the jails full? Gauge attitude of the people you are speaking to and try to speak to a variety of people to see if you can find someone who is knowledgeable or sympathetic about cases involving violence against women or children. If there is a victim safety centre within the community, prioritise speaking to that centre.

This information, along with the desire of the child, will inform your next steps. In many places, perpetrators are given very light sentences or are let out on affordable bails. It's a hard conversation, but the child needs to be told when this is the case. Perpetrators can be really angry if they are arrested and then released and can take that out on the child, which can put the child's wellbeing or life at risk. Sometimes the child wants to go ahead with a case anyway, but often a child's motivation for wanting to go to the police is to get the perpetrator away from them. In this case, other solutions are often more effective. Check in with the child frequently to gauge what they want, what they are scared of, and whether there are changes in what they want. Make sure they know that we will support them in whatever solution feels best to them in line with the statutory reporting requirements.

Step 3: Call the team social worker

With the available information, call the team's social worker for advice. There are often risks and complications involved in an abuse case that you may not have thought of, even with experience. The team's social worker will take the following steps.

Step 4: Evidence

If the child is intent on opening a case with the police, the team's social worker will support them in going to the clinic to access post-rape services and a rape kit applied by the local nurses. Prepare the child that the nurses will have to take a swab of DNA and that they may have to take pictures of any present injuries. The team's social worker will make use of the rape crisis centres available in many larger towns.

Step 5: Relocation

The best solution in protecting a child is often moving the child out of town. Do they have relatives elsewhere? If so, the team's social worker will try to get in touch with them and assess whether the child can be relocated. Social workers have successfully relocated several children to different locations within the family to get them away from a rapist or abuser when the police or court systems couldn't help. The social worker will make sure to take their ID/birth certificate, their medication, and a transfer letter from their school and their clinic, otherwise they will not be able to access schooling or treatment in the new place. ***Note: this is a massive invasion into a child's life and should really only be done with the support of the local child welfare office.

*For cases of Abuse (Code Blue), gather information from the interview as well as the Fieldworker. Often, getting hit/spanked at home is considered a common form of

discipline. Discuss with the Fieldworker whether there were any signs of abuse in the household. Ensure that the Fieldworkers are trained to ask general/round-about questions on how the participant is doing and about their home lives, in the case that a 'Code Blue' pops up at the end of the interview. Carefully review interview answers while data checking to note whether different types of abuse accumulates (combination of weekly spanking, withholding meals, feeling unwanted at home, etc.).

Some local notes for Mpumalanga, South Africa:

**In cases of sexual assault, the Greater Nelspruit Rape Intervention Project (GRIP) can help with confidential, sensitive and comprehensive trauma counselling. They provide 24 hr services in 26 Care Rooms across 13 police stations, 8 hospitals and 5 courts in Ehlanzeni District.

**any clinic in Mpumalanga will be able to provide post-exposure prophylaxis if the rape occurred within the past 72 hours. For rape kits that include DNA testing, victims need to be referred to Rob Ferreira Hospital in Nelspruit or Tintswalo Hospital in Acornhoek.

**We had at least one child survivor denied PEP because he didn't want to report his rape to the police. This is not acceptable but is a common practice among nurses. If this happens, the team's social worker should demand to speak to the person in charge and threaten to write a formal letter of complaint against the person denying the PEP. This is the tactic that the project has had the most success within the past.

Documentation

Regardless of circumstances, the team's social worker will need a series of documents in order to successfully relocate a child.

1) child's school report. Usually they will not give you the report for this year, so the child will have to repeat a year. The social worker will also need a transfer letter. It should say:

'[Name of child, ID number] has completed up to [X year] at [School name]. They will be moving to [Location], please consider them for admission to your school.'

Important to include stamp of the school on this letter.

2) If taking treatment or medication, the child will need their Road to Health Card (RtoH) or similar for the country in which fieldwork is taking place. The child will know whether they have one of these. It's very important to get this card as clinics will not administer medication without it, which can result in dangerous changes in ART regimen.

3) Transfer letter from the clinic: Every clinic will know what to do for this, and this will also need to be stamped. Clinics are usually good with this. Do check with the child whether they are taking any medication. Ensure that all medications are listed in the letter that the clinic writes.

4) If grant transfers are required: the social worker will conduct an investigation and involve the local child welfare office. Bring the RtoH card and transfer letters, as this will speed everything up.

Code BLACK: Suicidality/Mental Health

Step 1: Assessing whether there is a threat of suicide or actual attempt

Cut-off point can be whether or not they have actually thought of a way to kill themselves. 'Is there an indication that someone is making plans for this?' If they are thinking of ways to kill themselves, treat it as an attempt. If they are vaguely contemplating suicide, assess the situation. Many children respond that they have thought about killing themselves because no one has ever asked them that before, and it has crossed their minds. It is always worthwhile to ask the child if they would like to speak to someone about their experiences and explain how kind and helpful the people at Childline are.

If the child is making plans or have actually tried to kill themselves, get the person to counselling as soon as you can – involve the team's social worker

Step 2: Overnight Hospital Stays

If the person is in immediate danger of hurting or killing themselves, they can be admitted overnight in the hospitals. Most hospitals will not have a psych ward, so they will end up on a general ward. This is not always the best option, but sometimes it is the only option. This is also an option for 24-hour watch when you are concerned about someone. It helps a lot to have relationships with hospital staff who can advocate for the child being hospitalized even though they are not "sick." Have the team's social worker ask the doctors or staff that you work most closely with if this is something that they have heard of happening at the hospital or if they would be willing to try it BEFORE you have an emergency situation.

In South Africa Lifeline is an excellent resource; Lifeline will deal with any type of case. However, they have transport issues. The team's social worker can provide transport and accompany participants to the Lifeline offices in Nelspruit.

Code F: Food Insecurity

Child/adult/household food insecurity

Code F will be flagged if there is household food poverty for more than 3 days in the last week. Providing food parcels is not a sustainable solution and should be avoided. Preferred follow-up is listed below.

First choice: Get them a grant. Check with the family which grants they are currently receiving and then discuss with the management which additional ones they can apply for. The team's social worker can help with this.

Second choice: Get them access to an ongoing food parcel through their ward councillor, clinic, or any local soup kitchen or programme. The team's social worker can help with this. These are hard to find and pretty variable, but some clinics do offer food parcels or supplements to their ART patients, and some wards do have food parcels for at least part of the year. Community gardens should also be explored. If they express interest in a personal garden and just need help getting this started, that is also an option.

Third choice: Get them a one-off food parcel through the emergency fund. This is especially a good thing to do if the RA is distressed about the family's situation. Food parcels can be a useful tool to tide over a family while they are waiting for a grant to be sorted out. However, food parcels are a contentious issue within the communities and the projects must refrain from setting precedents or giving regular food parcels to families. Food parcels should not replace grants, and we should ensure that families claim for all the grants they are entitled to rather than distribute food parcels. Ideally, if it is not an emergency food parcel, try to deliver it in line with grants day.

Child food insecurity

When asking about food security of younger participants, Code F will be flagged after 1 or more days of food insecurity in the last week. In other words, this flag is more sensitive when asking about younger children.

The Fieldworker should assess the severity of the situation and investigate the extent of food insecurity. Depending on the situation it may be appropriate to provide a smaller food parcel to support feeding the child. This should be decided case-by-case with the PM and team's social worker.

A similar response should be followed as for household or child food insecurity. The social worker should facilitate access to an ongoing food parcel through their ward councillor, clinic, or any local soup kitchen or programme as above.

Code T: TB Test or TB Treatment

TB testing and TB treatment at a healthcare site can and should be supported by an Fieldworker or the team's social worker. In cases of staff members escorting participants to receive a TB test or treatment, staff members (and everyone else!) should be trained to remember that sitting in waiting rooms is a great time for bonding with participants and giving them space to open up about other aspects of their lives.

During high risk of exposure to TB it is important to note the following:

RA and participant should stay in well-ventilated areas. If you are inside then make sure all the windows are open and that the RA sits at the open door

TB can be really dangerous so if the team member is HIV-positive they should prioritise themselves and ask another team member to support with the referral.

Research participants who have been on treatment for 2 weeks are no longer infectious.

See more information in the Health & Safety Manual.

In South Africa Parental consent is required to get a TB test – legally, children can make their own medical decisions from age 16, but we don't want to overstep boundaries with parents. We've never had a parent refuse this, as far as we know.

The Fieldworker should:

ask the child if they know what is going to happen to them, and explain how a TB test works even if the child says yes (cough into a cup, mucus goes to the lab; it doesn't hurt, nothing to be scared of, etc.)

ask the child if they'd like to be accompanied in to see the doctor, and while doing the TB test

bring colouring books, games, etc. **It is important to use this time to bond with the participant.** Even our best team members have struggled with this; they are used to spending a lot of time in waiting rooms, and people just switch off. Unfortunately, our children have complicated lives, and **many of our most difficult referrals have been disclosed while in waiting rooms for TB tests or treatment**. Emphasize this to the team and explain why it's important.

technically, all members of the household should be tested if a test comes back positive. Call the family and explain this, then call once to follow up. Accept that it almost never happens.

remind Fieldworkers that if a participant says they have TB and are not on treatment, the interview should be postponed or done outside. Many RAs feel uncomfortable stopping an interview, so this is worth role-playing and providing support around this during training.

Code B: Bilharzia

Code B will be flagged if a participant states they are peeing blood or have blood in their poo. Bilharzia is an infection caused by a parasitic worms that lives in fresh water. Participants usually acquire bilharzia through swimming in lakes.

Participants will have to be referred to the local clinic for testing (a urine test/stool test) and treatment (a few tablets that sometimes make participants dizzy).

Other referral actions

Pregnancy

Not every pregnant child is a referral case. Pregnancy referrals can and should be handled by the social worker; such a referral most commonly involves a pregnant child who is not receiving antenatal care. The most important thing in this case is to link the participant to medical care. We do not comment on or get involved in pregnancy disclosure unless the child asks for our help with this. It does not matter whether the participant is HIV+ or HIV-; they should be getting antenatal care regardless. The social worker can accompany children to the clinics for their first appointment should the child be scared to go by themselves. Child pregnancy can lead to exclusion from school, being disowned and thrown out of the home, and being married against the child's will. It is therefore important to remain non-judgmental of the pregnant child and link her to the appropriate services.

If the child is interested in a termination of the pregnancy, she should be referred to a clinic that offers these services. The child will receive counselling there from qualified nurses who will help them make the difficult decision of whether they should carry to term or not.

HIV Test

A referral case for an HIV test can be supported by the social worker. All adult participants are offered voluntary oral self-testing as part of the project. The fieldworker who conducts the test will be trained in pre- and post-test counselling and in conducting the actual test. All adult participants who tested positive should be referred to their local clinic and linked to care.

Where participants refuse the oral self-test but wish to test at the clinic the following should be explained:

ask the participant if they know what is going to happen to them, and even if the participant says yes, explain how an HIV-test works (a tiny stick will be used to prick their finger, then one single drop of blood will be squeezed out of the finger and put on a strip, the strip will then react with the blood, and indicators on the strip will show you in 5 minutes whether your test is HIV+, HIV- or invalid)

ask the participant if they'd like to be accompanied in to see the counsellor, and while doing the HIV test

if you feel comfortable, you can get tested first to show the participant that there is nothing to be afraid of

If the participant tests positive, the counsellor will be there to support them and tell them about next steps. Be calm, do not cry, or freak out. What the participant now needs is for multiple adults to tell them that many people have HIV, live good lives, and are very much loved, that it is not the end of his/her world as he/she knows it, that free treatment is available to them as well as counselling and support, and that you will support them if they need somebody to speak with during the initial phase.

If a mother tests positive, she should be advised to have her child/children tested for HIV as well with social work support

This project does not offer voluntary testing to children. We can, however, facilitate access to the local clinic where a child approaches project staff and would like to know their HIV status. In South Africa, parental consent for an HIV test is not required for children aged 12 and older. However, where we can, we do not want to overstep boundaries with parents and more importantly, we have to make sure that the child has a support network available to them should they test positive. We have in the past had parents refuse HIV-tests even though their child's health was deteriorating very quickly. It is then important to find people within the child's environment who could offer the emotional and treatment support, should the child test positive.

ART Help

If the participant is disclosing that they are defaulting on their medication, it is important that the Fieldworkers gather as much information as possible to understand the cause. For example, in some instances, the participants were afraid of their nurses and asked the Fieldworkers to escort them to the clinics. Other children didn't take their medication regularly while living with a parent who wasn't taking meds or took them inconsistently, but then started taking them properly when they moved to a more supportive environment.

ART help can come from getting counselling at the local clinic or from the prescribing doctor. Occasionally, there are ART support groups at clinics. Sometimes once-off counselling can be really helpful, for example, if the child has been taking meds since they were very young and was never really told why taking them properly is important. Sometimes a child just needs a reminder of why their meds are essential. And sometimes counselling doesn't really help because there is a root cause to why the child is defaulting that has nothing to do with knowledge.

**Note: A lot of boys go to circumcision school for several weeks in July or Nov/Dec. Different circumcision school leaders have different attitudes about ART during circumcision school. There are leaders who work with doctors to make sure that the child is able to continue taking ART without disclosing his status to everyone at the camp.

Disclosure of HIV-status to an child

It is important to be cautious not to get overly involved in providing support for disclosure. The Fieldworkers must be reminded that although they are lay HCT counsellors, that this is not in the project's remit. Disclosure is best to be discussed with a caregiver or participant according to their best wishes and then referred to a clinic counsellor.

However, in some cases the team's social worker be well placed to moderate a group debrief after a particularly difficult disclosure or referral. It involves creating a non-judgmental space, for a determined period of time. It's important to reiterate that the best solutions to difficult referrals are often sustainable ones that are embedded in existing services – however, poor they may be – and acknowledge that feeling upset is an understandable response to the situation.

Special School

Several of our participants have requested to attend special schools. There are only a handful of them available, but most are full and have long waiting lists.

1. Find out why they think they need a special school. Is the child performing badly in school? Do they clearly have a learning disability like Down's syndrome? Did they receive a letter at their current school?

2. What steps has the family taken already to try to improve school success for the child? This can include extra homework help, tutoring, or exploring other schooling options.

3. Talking to a teacher is often really helpful because they will have a better sense of whether the child really does need a special school or whether there are other options available that would be better suited to the child. We have had teachers explain that sometimes children whose parents think they need special schools are really just struggling with a particular subject or concept.

4. When possible, explore other areas of life that may be taking the child's focus off during school. Often, children are failing school because of trauma or abuse in the home or at the school. Frequently, when their situation changes, they begin to thrive in school.

**The project should have a list of special schools in the area. The team's social worker can discuss these and access to schools with the child and their caregivers.

School Uniform

We have encountered a lot of participants living in extreme poverty who have dropped out of school because they didn't have a school uniform and were told that they could not come to school without one. Most towns or cities have a big store that has all of the school lists and colours The emergency fund can be used to purchase school uniforms. Again, this is not a sustainable method to decrease poverty and we need to be careful in setting precedent.

Substance Abuse

Substance abuse may be identified by Fieldworker and/or disclosed by a participant or caregiver. It can be extremely hard to get any sort of rehabilitation program or substance abuse-specific support in Mpumalanga. Sometimes the best (although limited) option is that the child is sent away to a rural relative – the more rural, the better. Since there are no support services around this, removing the child from substance-using friends or access to substances may be worthwhile. It is also worthwhile to enrol the child in general counselling with Childline, if the child is willing. The social worker will be able to make referrals to the few harm reduction agencies in Mpumalanga.

Step 1: Substance abuse identified/disclosed, find out more about the situation

If substance abuse is identified by RA and/or disclosed by a participant, the Fieldworker should find out more about the situation (reasons for substance abuse and

how child accesses harmful substances). If the child requests support we can refer them to Childline and also suggest that they relocate to a more rural area, away from access to substances.

Step 2: Referral action

Lifeline support: the team can set-up and appointment for Lifeline and provide the participant with means of transport to get to the appointment. The social worker will set this up and remind the participant of the appointment. Especially with substance abuse, children may face more barriers to exercise control and actually go to the appointment so the child may need to be **picked up and taken to lifeline.** A follow-up call is also needed to make sure the child went to the appointment and if they may need support to schedule follow-up appointments.

Note: These referrals have historically been challenging and time consuming as they require finding participants (older boys - out of school) who have moved around a lot and whose lives are precarious.

Child Mortality

When finding out about a child's death, this should be handled very sensitively and carefully. It is of upmost importance that the Fieldworker interact sensitively with the family and participant without asking too many questions, especially after finding out. This very difficult situation not only hard for the participant but also difficult for the RA and team who have a relationship with this participant.

Note: vicarious trauma to the team. Being exposed to these circumstances can remind individuals of when they have experienced similar events in their life. It is important the managers are aware that exposure to this may bring up trauma in the team. To support Fieldworkers going through this, managers should check in with the Fieldworker and find out about how they are doing. If the Fieldworker would like to access counselling then the manager can facilitate this (see section 5).

Step 1: assess situation and plan next steps with Fieldworker

The family mourning the loss of a young child may appreciate the Fieldworkers presence or may not. The Fieldworker should assess the situation and discuss with PMs how best to support the child's parent and their family. Steps be taken should respect what the participant shares with the Fieldworker and what needs are expressed.

Step 2: Arrangement of food parcel and/or counselling for parent

The project would like to offer both counselling and a food parcel to the participants in the case of child mortality. Discussion of such provisions should be undertaken sensitively and at a suitable time deemed by the Fieldworker.

Condolences for the family

Counselling for the parent

food parcel, or whatever else is appropriate in the individual situation

Follow-up and information gathering

We should follow-up with the parent only after a couple of months have passed. Although it is important for us to understand the cause of the child's death, this should be handled very carefully and avoid causing any further trauma.

This would be to check-in on the participant and to find out a bit more about the circumstances of the child's passing. This should only be done after **a few months** following initial disclosure of child death and with the utmost sensitivity. Where families would not like to be approached this needs to be respected

Grants

South African Social Security Agency (SASSA) provides various types of grants including:

Social Relief of Distress

Grants-in-aid

Child Support Grant

Foster Care Grant

Care Dependency Grant

War Veteran's Grant

Disability Grant

Grants for Older Persons

SASSA grant pamphlets are available in the office in English and in Tsonga and Siswati. Ensure that RAs pack the pamphlets and provide proper information to participants on grants. Many participants are eligible for grants; however, they may lack the resources and information to access them.

Please visit http://www.sassa.gov.za/index.php/social-grants for more information on grants. With the SASSA office, it often helps to have a professional, e.g. the team's social worker, accompany the family to the SASSA office who can advocate for them. We have experienced a lot of cases of families being turned away from grants that they qualify for until they were accompanied by someone from the project. Know which grants the person qualifies for and why, and speak up about it.

The Social Relief of Distress grant is supposed to be available to anyone for short-term assistance at any time after an emergency or life change (like losing a job or a change in household income) and can be used in the meantime while any of the other grants is being processed. Most people don't know to ask about this, and you should ask for it specifically. At some offices it is in the form of food parcels and they run out.

An Important Note about Feelings and Vicarious Trauma

This stuff is really hard! It is emotional to work every day with children in such dire situations and to know that it's not going away any time soon. It's important that you acknowledge that having a response to these situations is normal and expected. All team members have the option to access counselling and take their annual leave. Talk to each other. Figure out what you need to do to care for yourself. This is not just for you, but you are also modelling for your other team members what space they have available to grieve and care of themselves during referrals and in the workplace.

It is important not to impose your own personal response to a situation. Remember, too, that each case can be even more emotionally draining for those who live in areas where they are surrounded by these types of situations in their own families and communities. Make sure that everyone on the team knows that management know that this is hard for everyone and are concerned for their wellbeing. We are working in a place where people have generations of family members who were fired on the spot for missing a day of work or doing something imperfectly. Team members will often be understandably hesitant to express that something is hard on them or not working for them and may push themselves to be okay. This is not useful – we are in it for the long haul, and it is not possible to really show up for the children when we are exhausted or traumatized ourselves.

Staff members can access counselling via Nataly. Please make use of these resources and make sure everyone understands that these are available to support them. Time off should be given to those who need to access these services.

Contact information for services

Childline Mpumalanga – Benita Nel benita@childlinempu.org.za, number for children is 116

Lifeline Nelspruit – Anriette Slabber annriette@xsinet.co.za, 013-755-2635/3606, lifeline counselling 0861 322 322

Greater Nelspruit Rape Intervention Project – Licky Thusi ceo@grip.co.za, +27 13 752 4404, counselling 083 310 1321

Child Welfare Mpumalanga – +2713 753 3330, childwelfarenel@mweb.co.za

SAVF (Family Care and Youth Care Services) – Lindiwe Mabaso lmabaso@savf.co.za, 013 752 3234

Victims Empowerment Center, 2241 Cobra St, 2241 Kanyamazane, Mpumalanga, South Africa

Vuwiselo Victim Empowerment Programme Centre in Acornhoek, Bushbuckridge, Mpumalanga Province

Calcutta Victim Empowerment Centre, Mkhuhlu, Mpumalanga

Masikhulumeni Madoda Shelter, 543 Enkwalini, 1203 Matsulu

Appendix F: Qualitative Consent Form

Qualitative interview information form – Participant Group 1: Young Adult

Introduction Thank you for completing the prior questionnaire. We have chosen a few participants to give some addition feedback in an in-depth interview. This means a researcher will ask you a few additional questions about your views and we would like to record these so we don't forget what was talked about. This discussion will take about 90 minutes to complete. You may complete some drawings during this time too. There are no right or wrong answers, and it is entirely up to you to decide whether you would like to take part or not.

What is this study about? The study is about personal relationships. What support you have as a parent and how you parent, as well as how you would describe your relationships (with your partner, your children, family members and your caregivers). We are trying to understand your relationships and how manage stress and your feedback will be helpful.

Do I have to take part? Not at all. It is up to you to decide whether or not to take part. If you do not want to, this will not affect any help you may be getting from anyone. You have not disappointed anyone. If you decide to take part, you are still free to stop or withdraw at any time. You don't have to give a reason.

What would I have to do? If you decide to take part, you will first sign a consent form, and then spend about 90 minutes talking with an interviewer.

What if the questions upset me? You can stop at any point, and you do not have to give a reason. You can also contact the research team at any point and say that you want your answers about certain questions to be destroyed, which we will do straight away. If you want to talk to someone about anything that has come up from this, you can tell the interviewer.

Will what I say be kept confidential? Anything you tell us about yourself will be kept strictly confidential, and will not be told to anyone else. Any information about you would have your

name changed so that you cannot be recognised from it. We will share datasets with researchers in our group but no information would identify who you are. During this study, it may become clear that you or your children are suffering from serious difficulties. If so, the interviewer will explain to you some possibilities for further help. If there is a safety issue, we may contact a welfare organisation for you. All this will be talked over with you first.

What will happen to my data (the audio recording and typed transcript of the interview) and how will it be kept safe? The recordings and transcripts of your interview will be saved in a secure dataset at the University of Edinburgh. We will give your answers a made-up number so that nobody outside the project can link your name or personal details, like your address, to the answers you tell us. In the event that the principal investigator of the study (Dr Franziska Meinck) moves to a new university, the secure dataset will move with her.

What will happen to the results of the research study? The results of this study will be used to help the government and others make policies for families to improve their health.

Who is organising and reviewing the research? The research is being organised by Edinburgh University and the University of the Witwatersrand. All ethics committees have approved the study. If you have any complaints about the study, please contact Ms Zanele Ndlovu at the Wits Research Ethics Office (011-717-2700 or **Zanele.ndlovu@wits.ac.za).**

Reimbursement? You will be reimbursed for your time and participation at the end of the interview.

After the interview, we would like to stay in touch in case we want to interview you again. We will use phone numbers and will let you know in advance before seeing you again. You do not have to see us again if you don't want to.

Do you have any questions?

Qualitative Informed Consent – Participant Group 1: Young Adult

Quiz:

1. We will use your name when we discuss the interview you participated in?
   True ☐ False ☐

2. If you do not want to participate, you will be treated poorly?
   True ☐ False ☐

3. Even if you agree to participate, you can withdraw at any time without giving a reason?
   True ☐ False ☐

Please answer these questions by ticking the box to the right.	Tick
1. I have read and understand the information sheet for this study and have had the chance to ask questions.	
2. I understand that I have chosen to take part and that I am free to stop at any time, without giving any reason.	
3. I agree that any words I may say during the interview can be used, without giving my name, in the presentation of the study.	
4. I understand how my personal data from the interview will be collected, used, and protected, and which institution(s) will store my data.	
5. I agree to take part in the study.	
6. I agree that any artwork produced during this interview can be used or photographed.	
7. I understand that the research team has to contact the department of social development should I disclose information about a child in danger and I consent to my data being shared with these services if a child is at risk of harm.	
8. I agree for my data from the prior questionnaire (collected as part of the Banakekeli/Young Carers study) to be linked with the new data collected in this interview through a personal identification number.	
9. I agree for my information to be linked to my children's and caregiver's information (if they are enrolled in the Banakekeli/Young Carers study) through a personal identification number.	

Name:	Signature:
Interviewer:	Date:

Thank you!

Appendix G: Quantitative Consent Form







Participant Group: Young Adults

INFORMATION SHEET

Good day. My name is _____. I am part of a research team from the Universities of Edinburgh and Witwatersrand and we want to learn about the health and well-being of young adults, their children and caregivers in your community. We have interviewed you before in 2010/11 and 2011/12 as part of the Young Carers Study.

These questions will ask you about how you are, your relationships with your family, how you parent, and your health and wellbeing. Some of these topics may be sensitive and difficult to talk about.

YOUR OPINION IS IMPORTANT TO US

We would like to hear your voice and invite you to take part in our research study – **Banakekeli (Young Carers 3)**. Before you decide whether to participate, it is important for you to understand what our research is about and what your participation in the study would involve.

Please take your time to read the following information sheet carefully and discuss it with others if you wish. If there is anything that is not clear or if you would like more information, please ask us. You will be given a copy of this information sheet to keep and please remember participation is **voluntary** and you may choose to not participate at any time, even if you have signed this form.

WHAT WILL I HAVE TO DO?

	Taking part in this research involves signing a consent form and then talking to someone from our research team who will ask you questions about your life, relationships, parenting, your health and challenges to your health and well-being using a tablet to record your answers. Some of the topics may be personal and difficult to talk about. We will ask about your relationship with your children, if you have any, and your child's health. We would also like to ask you questions about your relationship
	If any of the questions are upsetting, you can stop at any point, and you don't have to give a reason.
	You will be reimbursed for your time and participation in our research.
	Completing the questionnaire should take about 2 hours. We might do this in one day or come back another day(s) at a time that is good for you.
	After the interview, we would like to stay in touch in case we want to interview you again. We will use phone numbers or email and will let you know in advance before seeing you again. You do not have to see us again if you don't want to.
	**CONFIDENTIALITY & DATA PROTECTION** All of your personal information (e.g. addresses and telephone numbers) will be kept entirely confidential. It will only be used by our research team to keep in touch with you and as is required to conduct our research. Your personal information will be shared with Edingburgh University who will remove any of your personal information so that none of the results from our research contain any information that can identify you. Protecting your privacy is also very important to us. Any information collected about you or your children is collected using password protected tablets and paper information/consent sheets which are locked securely in our offices. This information also gets saved on secure, password protected and encrypted databases so that nobody, but the study leaders, have access to it

	The answers you give us to our questions on health, relationships, parenting and challenges to your health and well-being will be saved in a secure dataset at the University of Edinburgh. We will give your answers a made-up number so that nobody outside the project can link your name or personal details, like your address, to the answers you tell us. We may share your anonymized data with Oxford University and North-West University, other researchers and governments.
	We will analyse all the information we get from all the participants together using a computer software to find out about the health and well-being of the areas where we are conducting the research. We will share your personal information with Edinburgh University and remove any personal details that could be used to identify you and when we analyse the information that we use for analysis will have all of your personal details removed so that **nobody outside the Edinburgh team will be able to identify you**. The results of these analyses will be shared with other researchers and government so that they can create programmes and policies to improve the lives of individuals and families.
	We will share datasets with other researchers so that they can help us in telling government how to improve services. All the data that is shared will not have any personal information such as addresses, names or birthdates.
	Our study has been reviewed and approved by the Health Research Ethics Committees at the University of Witwatersrand and the University of Edinburgh. Our study will be conducted according to the guidelines issued by the Department of Health. You can also contact the research team at any point and say that you want your answers about certain questions to be removed, which we will do straight away. You can do this by sending a 'Please Call Me' to Nicola Christofides on 0827748547, email nicola.christofides@wits.a.za or an e-mail to the Principal Investigator Dr Franziska Meinck (fmeinck@ed.ac.uk). If concerns / complaints haven't been resolved within 10 days, you can contact Ms Zanele Ndlovu at the Wits Research Ethics Office on 011-717-2700 or Zanele.ndlovu@wits.ac.za For data protection questions please contact the Data Protection Officer Rena Gertz (dpo@ed.ac.uk) or Zanele Ndlovu on 011-717-2700 or Adél Venter of the Wits Health Consortium (Pty) Ltd offices on 011-274-9200 or popia@witshealth.co.za
	During our interview it may become clear that you are suffering from serious challenges. If so, our researchers will explain to you, in private, possibilities for further help. If there is a safety issue and we are concerned about you or your children, we may contact an organization that can help you. But we will talk to you about it first. Your case may also get discussed with the project's the project's social worker and Principal Investigator, Dr Franziska Meinck, who can be contacted at fmeinck@ed.ac.uk.

	If you tell us about any behaviour that puts a child in danger, we will have to take measures to ensure the child's safety. This means we have to report this to our study social worker who will make contact with local social workers or the relevant services. If the child is in a lot of danger and a crime has been committed, the social worker may also have to tell the police.

INTERESTED?

Participant Group: Young Adults

CONSENT FORM

In the next section we will be asking for your consent.

This study and the following consent have been approved by the following institutions: University of Edinburgh, University of the Witwatersrand and the Mpumalanga Department of Social Development.

By ticking 'Yes' you are consenting to:

	YES	NO
I have read and understood the information sheet for this study.		
The interviewer explained the information in a language with which I am fluent and comfortable.		
I had a chance to ask the interviewer questions about the research and all of my questions have been answered.		
I understand that I have chosen to take part and that I am free to stop at any time, without giving any reason. This will not change any support or help I am getting.		
I am aware that Oxford University and North-West University may have access to my information without any personal details so that I cannot be identified and that this information without personal details may be shared with other researchers and governments.		
I have understood how personal data, including information about my health, will be collected, used, and protected and that my personal data will be shared with the University of Edinburgh.		
I agree to be interviewed in this study.		
I agree to be contacted for future research.		
I understand that the research team has to contact the department of social development should I disclose information about a child in danger and I consent to my data being shared with these services if a child is at risk of harm.		
I agree to take part in this study.		

	YES	NO
I agree for my data from previous interviews as part of the original Young Carers Study in 2010-2012 to be linked to my new data using an anonymized personal identification number.		
I agree for my data from previous interviews as part of the original Young Carers Study in 2010-2012 to be reused for the purposes of this current study using an anonymized personal identification number.		
I agree for my information to be linked to my children's and caregiver's information (if they enrol in the Banakekeli/Young Carers study) through a personal identification number.		

Please fill in your details below and let us know if you would like to participate in the study.

Participant Name

_____

Participant Signature

_____

Witness signature

_____

Place _____

Would like to take part in the study: □ YES □ NO

DATE: _____

Appendix G: Qualitative Interview guide

In-depth interview guide – young adults

NOTE: This interview will be recorded, ensure consent given for recording

INTRODUCTION

Thank you for agreeing to talk with me today. I am interested in relationships between people and your opinion matters to me.

The questions I have don't have any right or wrong answers. I am interested in any experiences, stories, and ideas you'd like to share. Please feel free to share your honest thoughts and opinions. Remember that what is said here today is confidential (which means that I can't talk to others about what we talk about unless you tell me about a child in danger. If that is the case I will have to alert our social worker). When I share our conversation today for research purposes, I will never use your name or anything that can identify you.

We will talk for about 45 minutes and will also draw. We can take a break whenever you would like. Do you have any questions for me before we begin?

Great. Let's get started.

METHODS INTRODUCTION

Squiggle drawing warm up:

We are going to do a squiggle drawing together to get used to the materials here.

Give participant piece of paper and interviewer take piece of paper as well. Make all drawing materials available to participant. Encourage exploration and fun.

Please choose a marker or crayon you'd like and when I say 'squiggle' please go ahead and create a squiggle on the page. Take your time and just see what you come up with. There is not right or wrong way to do this.

If participant doesn't understand, please demonstrate. Give direction to squiggle and let participant draw as long as they like. Interviewer does the same.

That's great! Now, if you look at your squiggle drawing, is there anything you see in those lines? Take your time and look until something jumps out at you.

Encourage participant to turn page slowly and look from all angles/sides until and image or symbol jumps out. Interviewer does the same. Interviewer can demonstrate on their paper first if participant doesn't understand.

When you see an image or symbol, please choose another marker or crayon and outline it so I can see it too. Remember there is no right or wrong way to do this!

Interviewer completes the same exercise. Encourage fun and participation.

Well done! I can see your image/symbol too…can you see mine? Now if this picture had a name, what would it be called?

Encourage participant to title the drawing and write the title on the page. Interviewer does the same.

OPTION 1

Kinetic Family Drawing (KFD):

Now, please can you draw some more pictures. Remember there is no right or wrong way to draw. The first picture will be about your family now (current family), and the next will be about the family you were born in. Would you please **'draw a picture of everyone in your family, including you, doing something. Try to draw whole people, not cartoons or stick people. Remember, make everyone doing something, some kind of action.'**

Give participant one piece of paper and all the drawing materials. Remind them that the first KFD is about their current family. Give participants as much time as they need to complete. You may have to repeat the instruction exactly as it is written above again.

Once they are done with the first image, please give participants another piece of paper and remind them to complete a KFD about their family of origin. If the participant lived in many places or families growing up, ask them to focus on who they lived with for most of the time

or who they lived with as adolescents. It may take some time for participants to remember and draw. You may have to repeat the instruction exactly as written above again.

Thank you. If each of these pictures had a name, what would they be called? Please write that on the page. Now, please can you tell me about your pictures.

Remember to be open to their story and to their images. Have a sense of curiosity about what is happening in the picture and what is happening between the people in the picture.

OPTION 2

River of Life:

Now, please can you draw another picture. Remember there is no right or wrong way to draw. Here is a piece of paper. Please imagine a river that shows your life from beginning to this point. Think about things that stand out for you in your life and you can draw these or write words to show important things. These may be good things or difficult things.

Give participant one piece of paper and all the drawing materials. Give participants as much time as they need to complete – it may take some time to remember past events and complete the task. You may have to repeat the instruction above again.

Thank you. If this picture had a name, what would it be called? Please write that on the page. Now, please can you tell me about your picture.

Remember to be open to their story and to their image. Have a sense of curiosity about what is happening in the picture and what memories have been incorporated.

OPTION 3

Sandbox:

Now can we do an exercise with the sand tray please? Take a look at all these objects. Please select an object that represents you and also objects that represent important people in your

life (both living and dead) and make a world in the sand or anything that comes to mind. Take your time and let me know when you are done.

Interviewers will offer participants the sandtray as well as the figures/objects and will invite participants to engage in the task. Participants will be given the opportunity to explore the figures and take their time placing these in the sand.

Thank you. If this tray scene had a name what would it be called? Now let's look at the tray together. Please tell me about your tray.

INTERVIEW GUIDE:

Violence:

1. Please tell me about any challenges or difficult times you've experienced?

Ngicela ungitjele ngetigcinamba loke wabukana nato nobe bumatima loke wandlula kubo?

2. Tell me about any times you were hurt by anyone including a family member or partner or someone else? Who did you tell and what happened? *(NOTE: probe in detail about the event)* Ngicela ungitjele ngetikhatsi lapho uke walinyatwa nobe wahlukubetwa khona ngumuntfu, kungaba nalilunge lemndeni, u mlingani wakho nanobe ngubani nje? Watjela bani futsi kwentekani?

3. Tell me about other times when you have been hurt in your life? (NOTE: repeat question multiple times)kukhona yini letinye tikhatsi lapho uke weva buhlungu khona emphilweni yakho?

Mental health:

4. When this happened and after it happened how did you feel?

Lekhatsi kwenteka loko, nangemuva kwako, wativa njani?

5. What other things were happening in your life around this time?

Ng'tiphi letinye tintfo lebetenteka emphilweni yakho ngalesos'khatsi?

6. What stories have you heard about difficult or hurtful times your parents have experienced? Uke weva ngebumatima nobe kuhlukunyetwa lokwenteka kubatali bakho?

7. Have there been other times when you felt really worried, scared or sad? Please tell me about those. (NOTE: repeat question multiple times) Kuke kwaba netikhatsi lapho wativa wesaba nobe ukhatsatekile nobe ukhubekile? Ngicela ungitjele kabanti ngaletotikhatsi.

8. Have there been times when you thought about hurting yourself or hurting others? Please tell me about those. Uke waba nemicabango yekutilimata nobe kulimata lomunye muntfu? Ngicela ungitjele ngayo lemicabango.

9. Tell me about times in your life when you felt very very angry. What happened? Ngitjele ngetikhatsi emphilweni yakho lapho wativa utfukutsele (ukwatile) kakhulu khona? Bekwentekeni noma kwentekani?

Parenting:

10. Tell me about your relationship with your child or children?

Ngitjele kabanti ngebudlelwane bakho nemtfwana nobe bantfwa bakho?

11. What are your biggest worries about your child or children?

Ng'tiphi tintfo letikukhatsata kakhulu ngemtfwana nobe bantfwa bakho?

12. What difficulties or hurtful things has your child or children experienced so far growing up? Ngubuphi bumatima nobe tintfo letihlukubetako, umntfwana wakho nobe bantfwana bakho lase bandlule kuko ekukhuleni kwabo?

13. What are your biggest regrets as a parent?

Kukhona yini tintfo lotisola ngato kakhulu wena njengemtali?

14. If you think about growing up, how was your relationship with your mother and father, and anyone else who raised you? (NOTE: does participant talk about biological

parent or other parents? Who lived with?) Nawucabanga ngekukhula kwakho, bebunjani budlelwane bakho nebatali bakho, nanobe ngubani lo wakukhulisa?

HIV:

15. For those HIV-positive –
    a. We are really interested in understanding women's experiences in living with HIV. Can you tell me about your experience? Sifuna kwati kabanti ngesimo salabasikati labaphila neligciwane leHIV. Ungangi tjela kabanti ngesimo sakho?

16.

Thinking about when you first found out you have HIV, tell me about your journey in living with HIV.

    a. Uma ukhumbula ngalesikhatsi ucala kuva kutsi unaleligciwane leHIV, ungangitjela kabati ngluhambo lwakho lekuphila nalo leligciwane?
        i. How have other people reacted to you?
        ii. How has it affected your relationships with both parents and with your children and partner?

Loku kutsikabete kanjani budlelwane bakho nebatali bakho, nebantfwa bakho kanye nemlingani wakho?

        iii. How has living with HIV affected your life?

Kuk'tsikamete njani imphilo yakho, kuphila naleli gciwane leHIV?

17. For those not living with HIV –
    a. HIV affects many people living around here. How has HIV affected you or your family? Please tell me about that. Ligciwane leHIV litsikameta bantfu labanyeti labahlala khona la. Wena nemndeni wakho, linitsikamete kanjani? Ungangitjela kabanti?

Closing

18. Thinking about your life, your parents' life and your children's life, tell me about the similarities and differences you see?

Uma ucabanga ngemphilo yakho, imphilo yebatali bakho nebantfwana bakho, ungangitjela ngetintfo letifanako netintfo letahlukile lotibonako?

a. What do you think are the reasons for the similarities?

Nawucabanga ng'tiphi tizatfu letenta kutsi kube netintfo letifanako?

b. What do you think are the reasons for the differences?

Nawucabanga ng'tiphi tizatfu letenta kutsi kube nemehluko?

19. If you look back at your drawing/sandbox, you've told me about times that have been difficult. Uma ubuka lesitfombe losidwebile, ungitjele ngetikhatsi lebetimatima.

a. What helped you get through those times?

Yini leyakusita ek'tseni wendlule kuletotikhatsi?

b. What have you learned about yourself.

Yini loyifundze ngawe?

20. For option 3 (sandbox) –

a. Looking at your tray now, is there anything that makes you feel uncomfortable that you'd like to change? Please go ahead and change your tray.

Uma ubuka indishi yakho, kukhona intfo lekwenta ungaphatseki kahle? Intfo mhlawumbe lofisa kuyintjintja? Khululeka untjintje lofisa kukuntjintja keyo lendishi yakho.

b. Please tell me about your tray. Ngicela ungitjele kabanti ngayo lendishi yakho.

Is there anything else you would like to tell me about the topics we have discussed today?

If not, that is the end of our discussion. Do you have any questions for me?

Thank you for your time and participation, it is really appreciated!

Before participant leaves, for those who have created pictures ask them:

What would you like to do with your drawings? (if the participant says they would like to take the drawings, make sure it is safe to do so. Ask if you can take a picture of the images before they leave. If participant says they would like to destroy the drawings, ask permission to take pictures first and let them destroy. If the participant chooses to leave the drawings, let them know you will take a picture of them and then store the image).

(Note to interviewers: To protect the safety of participants, it is *strongly* encouraged to not allow them to keep the drawing they create depicting any violence, as it could disclose to others what they talked about. Instead, collect the drawing showing violence but end the interview by creating one additional drawing with them. Ask them to draw "their happy place." Engage with them and have fun as they create this drawing. Allow them to keep this drawing and take it home instead.)

For those who completed a sandbox, ask permission to take a photo of their first tray and then their second tray when there has been a change made.

Appendix G: Author contributions in manuscripts

Paper 1: Co-occurring Intimate Partner Violence, Mental Health, HIV and Parenting Among Women: A Scoping Review

The scoping review was conceptualized by me, Dr. Nicola Christofides, and Dr. Franziska Meinck, who collaboratively developed the initial idea and framework for the study. I, along with Ari Ho-Foster, Jingying Wang, and Kabelo Maleke, conducted the data collection, ensuring a comprehensive compilation of relevant data. The formal analysis of the collected data was performed by Dr. Nicola Christofides and me, interpreting the findings to derive meaningful insights. The methodology was developed by Dr. Nicola Christofides and me, while Dr. Franziska Meinck managed the software requirements for the study. Supervision throughout the process was provided by Dr. Nicola Christofides, Dr. Franziska Meinck, Dr. Nataly Woollett, Hannabeth Franchino-Olsen, and me, ensuring the project was carried out effectively. I was also responsible for validating the findings. I wrote the original draft of the scoping review, with supervision from Dr. Nicola Christofides, Dr. Nataly Woollett, Hannabeth Franchino-Olsen, and Dr. Franziska Meinck contributing to the review and editing of the manuscript.

Paper 2: *"I've accepted it because at the end of the day there is nothing, I can do about it"*: A qualitative study exploring the experiences of women living with the HIV, intimate partner violence and mental health syndemic in Mpumalanga, South Africa

The qualitative paper was conceptualized by me, Dr. Nicola Christofides, Hannabeth Franchino-Olsen, and Dr. Nataly Woollett, who collaboratively developed the framework and

objectives for the study. I undertook the investigation and methodology development, ensuring that the research approach was robust and appropriate for the qualitative nature of the study. Dr. Franziska Meinck secured the necessary funding, allowing the research to be carried out effectively. I was also responsible for the formal analysis of the data alongside Dr. Nicola Christofides, enabling a thorough interpretation of the findings. The software (MAXQDA 2022) necessary for data management and analysis was provided by Dr. Franziska Meinck. Supervision throughout the project was provided by Dr. Nicola Christofides, Hannabeth Franchino-Olsen, Dr. Nataly Woollett, Dr. Franziska Meinck. I wrote the original draft of the manuscript, which was subsequently reviewed and edited by Dr. Nicola Christofides, Hannabeth Franchino-Olsen, Dr. Nataly Woollett, Dr. Franziska Meinck, and myself to refine the final document.

Paper 3: ***A qualitative study exploring parenting among mothers and female caregivers living with the IPV, mental health and HIV syndemic in South Africa***

The study was conceptualized by me, Dr. Nicola Christofides, Dr. Franziska Meinck, Dr. Nataly Woollett, and Hannabeth Franchino-Olsen, who also contributed to developing the study methodology. Data collection was carried out by me, Kabelo Maleke, and Pamela Maleke. The formal analysis was conducted by me and Dr. Nicola Christofides. Validation of the study was completed by me. The original draft was written by me, with review and editing performed by myself, Dr. Nicola Christofides, Dr. Nataly Woollett, Hannabeth Franchino-Olsen, and Dr. Franziska Meinck. All authors reviewed and approved the final manuscript.

Paper 4: ***Beyond Comorbidity: A Syndemic Analysis on Intimate Partner Violence, Mental Health, and HIV/AIDS among women and caregivers and their influence on parental violence***

The quantitative study was conceptualized by me, Dr. Nicola Christofides, Dr. Franziska Meinck, Dr. Nataly Woollett, and Hannabeth Franchino-Olsen. The study methodology was developed by me, Dr. Nicola Christofides, and Dr. Franziska Meinck. Data collection was carried out by the main study fieldworkers: Khutso Mnisi, Abigail Masiya, Sendra Sibuyi, Lydia Ngomane, Sherin Mashego, Elvis Masinga, Julia Magagula, Tiyani Mulhovo, Langutelani Mathebula, Gabisile Zwane, Nonhlanhla Khumalo, and Musa Mndawe. Data analysis was conducted by me, Dr. Nicola Christofides, and Dr. Franziska Meinck. I was responsible for data validation. The original draft of the manuscript was written by me, with review and editing performed by myself, Dr. Nicola Christofides, Dr. Nataly Woollett, Hannabeth Franchino-Olsen, and Dr. Franziska Meinck.

Appendix H: Published Qualitative Paper

PLOS GLOBAL PUBLIC HEALTH

RESEARCH ARTICLE

"I've accepted it because at the end of the day there is nothing, I can do about it": A qualitative study exploring the experiences of women living with the HIV, intimate partner violence and mental health syndemic in Mpumalanga, South Africa

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Abstract

In South Africa, Mental Health (MH), HIV, and Intimate Partner Violence (IPV) form a syndemic, that disproportionately affects women. These challenges are often co-occurring and create complex adversities for women. Recognising these intersections and the broader socio-cultural dynamics at play is crucial to understanding the layered experiences of these women and developing effective interventions. This research explores the experiences of the women living with at least two of the epidemics (HIV, IPV and or MH) and how they cope. A qualitative study design was used and 20 women (22–60 years) were recruited from Mpumalanga, South Africa. To be eligible for the study the women had to have experienced at least two of the epidemics. Data were collected through home-based interviews, arts-based activities, and analysed thematically using MAXQDA (2022) software. MH challenges were prevalent among all the participants and were linked to both IPV and HIV, resulting in symptoms such as anxiety, depression, and suicidal thoughts. In relation to the HIV-MH link, MH challenges in this combination included feelings of denial, sadness and anxiety related to participant's HIV diagnosis. A bidirectional relationship also existed in the IPV-MH group where pre-existing MH challenges among women increased their vulnerability of having violent partners, whilst IPV also increased MH challenges. In the IPV-MH-HIV group early childhood violence exposure was linked with MH challenges and later victimization and vulnerability to HIV. Participants primarily used religion, acceptance, occasional alcohol, and family support as coping strategies. Particularly in IPV situations, alcohol use/misuse was the most prevalent coping strategies. The study highlights the syndemic relationship between HIV, IPV and MH challenges among South African women living in a peri-urban community, with a central emphasis on MH challenges. Interventions should

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holistically address these challenges, with particular focus on MH challenges, cultural sensitivity, and promotion of healthy coping strategies.

Introduction

Women living with HIV or AIDS (hereafter referred to as HIV for brevity) and experiencing intimate partner violence (IPV) often face various mental health (MH) challenges. Research indicates that there is a higher prevalence of MH disorders among people living with HIV. Specifically, conditions such as depression, post-traumatic stress disorder (PTSD), anxiety, psychosis, and alcohol misuse are observed, which are often attributed to psychological stress, antiretroviral medication side effects, social stigma, discrimination, and lifestyle factors [1, 2]. Particularly, women living with HIV are also more likely to experience coexisting MH conditions and exhibit poorer overall MH than men [3]. The increased vulnerability is highlighted in established research which indicates existing gender disparities in MH conditions such as depression [4] anxiety [5] and PTSD [6, 7]. Furthermore, in the context of HIV these gender disparities in MH conditions may further be exacerbated [8]. Complicating matters further, IPV contributes to adverse MH outcomes, including anxiety, depression, PTSD, and increased suicide risk [3]. The primary mechanism that links IPV to the latter MH outcomes is IPV-induced traumatic stress [9, 10]. Moreover research also shows that IPV and MH disorders often have a reciprocal relationship, where one can increase the risk of occurrence of the other [9, 10]. The compromised cognitive and emotional resources that often accompanies MH disorders can make individuals more vulnerable to manipulative or abusive behaviors, thereby increasing their risk of becoming victims of IPV [11]. Previous research has also established a reciprocal link between IPV and HIV, indicating that those subjected to IPV have a 48% higher risk of HIV infection compared to their counterparts who haven't faced such violence. The heightened risk can be attributed to factors such as coercive sex by an abusive partner and their propensity for engaging in risky sexual behaviours and reduced condom use [12].

The interconnectedness between HIV, IPV and MH disorders can be better understood using syndemic theory as proposed by Merril Singer [13]. Singer defines a syndemic as the complex interplay existing between different epidemics, especially in the context of social inequality and health disparities [13]. While SAVA primarily focused on the intersection of substance abuse, violence, and AIDS, our study expands this to encompass a broader range of MH challenges. HIV has long been long been recognized as an epidemic globally [14, 15], however, we argue that IPV and MH conditions can also be categorized as epidemics. In South Africa IPV is a significant public health issue, ranking as the second highest burden of disease after HIV or AIDS. It also contributes substantially to disability adjusted years (DALYs) especially among women where IPV and child sexual abuse are common [16]. In terms of MH conditions, there has been a significant global increase, with a 13% increase over the past decade. Additionally, these conditions are now responsible for one in every five years lived with a disability [17]. These trends highlight the epidemic nature of both IPV and MH.

The emphasis of the syndemic theory is that epidemics do not exist in isolation, but rather are often interconnected and co-occur or cluster in social groups as a result of harmful social conditions such as poverty and stigma. These conditions often interact in ways that contribute to an increased overall burden of disease. The Substance Abuse, Violence and AIDS (SAVA) syndemic was first identified by Singer, he argued that contextual factors such as poverty, inadequate housing, family instability, drug related violence worked in conjunction to exacerbate the conditions of SAVA simultaneously [13]. Much research has been conducted on the SAVA

syndemic, yet there is still very limited data on the HIV, IPV and MH as a syndemic. As shown, the intersection of HIV, IPV, and MH disorders can exacerbate the health outcomes associated with these conditions.

Coping strategies of women with the HIV, MH and IPV syndemic

Understanding how women living with the HIV-IPV-MH syndemic cope in the face of these intertwined epidemics is critical. Research has shown that the coping strategies used by people living with HIV and those experiencing IPV have a link to the emergence of MH consequences [18, 19]. Therefore, exploring the coping strategies of these women could highlight important strategies that have the potential to protect their psychological and physical wellbeing. Research shows that psychological reframing of negative events and social support have proven essential for women experiencing MH and HIV management, while acceptance and hope serve as a popular coping strategies for all three epidemics [20–23]. Furthermore, adhering to HIV treatment has been found to be a key coping strategy for women living with HIV, largely driven by their sense of responsibility to their family and in particular their children [21]. In the IPV context, coping strategies are more diverse, according to a systematic review of US studies, it was found that religious or spiritual reliance and active abuse resistance were common whilst self-criticism and substance misuse were less common [24]. Contrary to this, a systematic review of South African studies found that many of the women who had experienced IPV used avoidance and distraction as a way to cope and this included substance abuse/misuse [25]. Seeking help has also been found to be a coping strategy among some IPV survivors, however this varies and is dependent on the severity of the victimization as well as resources available to the woman [24]. A comprehensive understanding of the root causes that lead to specific coping strategies, can help us in developing interventions that can target specific issues so as to activate more adaptive coping strategies. Identifying coping strategies of people living with HIV, IPV and MH syndemic has important implications for healthcare providers and can lead to a more holistic approach to managing the epidemics.

Present study

The primary objective of the present study was to explore the experiences of women navigating life with the intersections of HIV, IPV and MH challenges in a peri-urban community in Mpumalanga South Africa. We aimed to analyse the interplay of the epidemics and better understand the coping strategies used by the women. Furthermore, we sought to identify variations in coping strategies based on the different combinations of the epidemics experienced by the women.

Methods

Study design

To answer the study objectives a qualitative study design was used. The use of this approach was important in that it helped in exploring the research aims in more depth. We were able to have a deeper understanding of the participants experiences, perspectives and attitudes in relation to living with the HIV, IPV and MH syndemic. Furthermore, using a narrative approach helped to emphasize the personal experiences of the participants which in turn allowed for their individual stories to take centre stage. By focusing on these narratives, we were able to attain rich, detailed data and as a result enhance the depth of the research findings. A narrative inquiry is a type of qualitative research method that uses the stories of the participants as the primary source of data [26]. The methodology has been used across various fields to explore

culture, history, identity and people's lifestyles through the narrators' experiences [27]. In particular the approach includes investigating human experiences through narratives or producing the data in a narrative format [28].

Study setting

The current study was conducted in a peri-urban area within the Enhlanzeni District Municipality of Mpumalanga Province, South Africa from October 2022 to February 2023. Mpumalanga province has an estimated population of approximately 4 million people [29], with the primary languages being spoken being siSwati, isiZulu, Xitsonga and isiNdebele [30]. The study site is often categorized as a township, and primarily consists of brick houses. Common challenges in the community include inconsistent supply of basic services such as water and electricity with much of the infrastructure being informal. Unemployment is also rife, with the most common forms employment being domestic work, bricklaying and farming. The HIV prevalence in the district is reported to be 19.% among the adult population [29, 31]. In terms of IPV, 28% of women in Mpumalanga have reported experiencing physical abuse from their current partner at some point in their lives [32]. Moreover, a national study found that 29,2% of adults in Mpumalanga indicated that they had experienced common mental disorders at some point in their lives lifetime [33].

Sample

Twenty participants were purposively selected for the study. Selection of the participants was based on their responses to specific questionnaire items from the Interrupt_Violence Study [34]. Participants were between the ages of 20–60 years and had to screen positive for HIV, IPV and/or MH challenges. Participants did not have to have experienced all three epidemics to be included in the study; any combination of the two epidemics was sufficient for inclusion.

During the quantitative interview, there were automatic referral flags that were produced if a participant disclosed behaviours, thoughts, or feelings of concern (S1 Table). The Flags were used to create voluntary and mandatory referrals to the study social worker. To identify participants who had experienced at least two of the epidemics, we noted participants with two or more flags for the epidemics of interest, indicating they had self-reported some combination of MH, IPV, and HIV. Thereafter we did a detailed analysis of the participants' responses to the individual items for MH, IPV and HIV in the questionnaire. The participants were categorised into groups based on their questionnaire responses. In terms of MH challenges participants answered questions in the following screening tools: National Institute for Mental Health's Ask Suicide Screening Questions (ASQ) for suicidality risk [35], Generalized Anxiety Disorder Screener for adult for anxiety [36], Patient Health Questionnaire for depression [37] and Post Traumatic Stress Disorder-8 (PTSD-8) for PTSD [38]. For IPV experience, participants needed to have answered yes to any of the questions in the WHO instrument for physical and sexual violence experience [39]. HIV status was determined either through self-reporting or identified during the voluntary HIV test administered by the interviewer.

Furthermore, the participants in the study were either mothers or primary caregivers for a child or children aged 17 or younger at the time of enrolment. This was because the data from the current study stems from a larger study which focussed on the experiences of parenting a child under the age of 17.

Data collection tools and procedure

The lead author alongside two research assistants conducted in-depth interviews which lasted between 60 to 90 minutes with each participant during October 2022-February 2023. The

interviews were conducted in the participants' preferred languages of SiSwati or Xitsonga and took place face-to-face in a private space at a time convenient for the participants. The interviews allowed for probing into participants' experiences with IPV, living with HIV, and navigating MH challenges. We explored their past and current experiences with IPV, the impacts of HIV diagnosis and its disclosure, and the community's potential stigma towards HIV. Furthermore, their MH journey was explored in the context of these intersecting epidemics. For more details on the interview guide see S1 Text.

To stimulate rich conversation, we used arts-based techniques such as the Kinetic Family Drawing (KFD), River of Life, and Sandbox [40–42]. Based on the depth of data obtained from the interview, some participants were asked to participate in more than one activity, which contributed to the data's richness. The probes used for the arts-based techniques can be found in S2 Text. The decision regarding which participants engaged in more than one activity was participant driven, in some cases where a participant had challenges with an activity, we switched to another activity. Conversely if a participant engaged well with one activity and this provided rich data, a second activity was used to help organize the story more effectively and to explore deeper into specific events.

With the KFD, participants drew two pictures representing their family of origin and current family dynamics, helping them to recall memories and build rapport with the interviewer [40, 43]. In the River of Life activity, participants visually drew their life journey, showing significant positive and negative events [41]. The Sandbox activity, inspired by sandplay therapy, provided participants a with medium to create three-dimensional scenes, that facilitated an artistic narrative of their experiences [42, 44]. To capture the story, multiple photos were taken of the participants' sandbox from various angles and at different times especially when participants changed the positioning of the figures during the interviews. The participants were also audio recorded while they were describing the scenes in the sandbox. This allowed us to capture the story as it unfolded.

Ethical considerations

The study received ethical clearance from the Human Research Ethics Committee (HREC) of the University of the Witwatersrand (M220526), ensuring adherence to recognized ethical standards for research. The main Interrupt Violence study was also ethically approved (M190949) by HREC, University of Edinburgh (No: 264227) and Provincial Department of Health Mpumalanga (MP-202012–003). All participants provided voluntarily written informed consent to participate and to have the interview audio recorded. The consent forms were distributed and explained to the participant prior to data collection in their preferred language, and they clearly outlined the objectives of the study, the nature of the participant's involvement, and how the collected data would be used and stored to maintain confidentiality. Participants were also informed of their right to withdraw from the study at any time without any repercussions. To protect participants' confidentiality, unique, non-personally identifying ID numbers and pseudonyms replaced participants' real names in all research materials. Photographs were taken of participants' artwork, with their explicit consent, to supplement data analysis. All data, including these photographs, were securely stored. Recognizing the sensitive nature of the study and the potential for psychological risk, we implemented a distress protocol. This protocol guided the interviewer in responding sensitively to a participants' emotions during and after the interview, ensuring timely provision of follow-up resources and support. A full-time social worker from the Interrupt_Violence study was also readily available for necessary or mandated referrals. We had 10 mandatory referrals; 5 non mandatory referrals and 5 participants did not require a referral. Mandatory referrals included cases such as participants

experiences of domestic violence including a weapon, suicidality symptomology especially in situations where there was a child in the home. Non- mandatory referrals included any instances where the participant felt that they would benefit from speaking to the social worker, this ranged from issues regarding accessing their social grants, accessing psychological assistance for their MH challenges and challenges of food insecurities.

Data management and analysis

All interviews were translated, transcribed, and analysed using Braun & Clarke's six-step thematic analysis [45]. The initial coding framework was deductively developed based on the study's objectives and an early review of transcripts [46]. Subsequently, a codebook was developed, which included the coding structure used to represent different themes and patterns found in the data.

The research team then applied the codes using several transcripts, ensuring they were relevant and appropriate to capture the data and that they captured the study's focus. For this analysis, we used MaxQDA 2022 software. Furthermore, an initial six transcripts were reviewed collectively by the research team to ensure the collected data's depth and richness. This exercise helped us to fine-tune our exploration areas, identify points requiring clarity, and identify any emerging themes [47, 48].

Findings

Characteristics of participants

The participants in the study were grouped into three categories based on their experiences with HIV, IPV and MH challenges. The first group consisted of seven participants, whose ages ranged from 24 to 45 years. Each participant in this group had experienced or were living with all three of the epidemics as disclosed in the questionnaire (HIV-IPV-MH syndemic). The second category included eight participants between the ages of 23 and 57. These individuals had experienced the HIV-MH syndemic. Lastly, the third group had five participants, aged between 22 and 49, who were living with the IPV-MH syndemic. For more detailed specifics on each of the participants refer to Table 1 below. Pseudonyms have been used to conceal the identities of the participants.

Intersecting epidemics and participant's experiences

Our study found that the interaction between the epidemics often created a mutually reinforcing dynamic that escalated the overall burden on the individuals affected.

Experiences of living with HIV-MH syndemic

Our findings highlighted a significant relationship between MH challenges and HIV. An exploration of the women's experiences revealed that an HIV diagnosis often triggered feelings of denial and a struggle with accepting their status for instance, when Nono (41) was asked to share how she felt when she was first diagnosed with HIV, she responded:

> *"It was very painful to even accept it, but I had to accept it and let it pass. But to be honest I only really started to accept and get healing maybe six years after I was diagnosed. You know it's hard when you know all the sexual partners you have had in your life, for me it was only two people so it hurt for this to happen to me. But it was only after I was positive that people told me about his history, it was then that I heard of all his past sexual partners who had died*

Table 1. Participant characteristics and epidemic combinations.

Participant	Age	Number of Children	Relationship Status	Education Level	Employment Status	Additional Information
Epidemic combination: HIV, MH and IPV						
Noxolo	28	Three	In a relationship	Grade 7	Unemployed	Noxolo is currently experiencing violence with the current partner. She shared MH challenges, with symptoms linked to depression and anxiety
Diana	43	One	In a relationship	Grade 1	Unemployed	Diana experienced IPV in the past with the current partner, although at the time of the interview the violence had ceased. She shared MH challenges with symptoms linked to depression.
Silindile	38	One	In a relationship	Grade 10	Part-time employment	Silindile's experiences of IPV were from a previous partner. She shared MH challenges with symptoms linked to suicidality.
Nokuthula	26	Two	In a relationship	Grade 11	Unemployed	Nokuthula's experiences of IPV were from a previous partner, the father of her first child. She shared MH challenges with symptoms linked to depression.
Sphe	28	Two	In a relationship	Grade 12	Unemployed	Sphe's was in a violent relationship at the time of the interview. She shared MH challenges with symptoms linked to depression.
Lerato	24	One	In a relationship	Grade 8	Unemployed	Lerato's experience of IPV is with her previous partner. She shared MH challenges with symptoms linked to suicidality and depression.
Paula	45	Three	In a relationship	Grade 6	Unemployed	Paula has a history of violence with the current partner However, at the time of interview the violence had ceased. She shared MH challenges with symptoms linked to depression
Epidemic combination: HIV and MH						
Nono (CG 7379)	41	Four	Widowed and single	No schooling	Part-Time Employment	Nono shared MH challenges with symptoms linked to anxiety and suicidality.
Rejoice	25	One	In a relationship	Grade 12	Casual Work	Rejoice shared MH challenges with symptoms linked to depression and anxiety.
Xoli	23	Three	Single	Grade 11	Unemployed	Xoli shared MH challenges with symptoms linked to depression and anxiety.
Ntombi	26	One	In a relationship	Grade 12	Part-time employment	Ntombi shared MH Challenges with symptoms linked to depression, she was also clinically diagnosed with Trichophagia
Phindi	48	Five	Married	Grade 12	Unemployed	Phindi shared MH challenges with symptoms linked to suicidality.
Pauline	42	Three	In a relationship	Grade 8	Full-time employment	Pauline shared MH challenges with symptoms linked to depression
Nelly	57	Two	Single	Grade 6	Unemployed	Nelly shared MH challenges with symptoms linked to depression and anxiety
Adelaide	46	Five	Married	Grade 7	Part-time work	Adelaide shared MH challenges with symptoms linked to suicidality and anxiety.
Epidemic combination: IPV and MH						
Palesa	22	Two	Single	Engineering Diploma	Unemployed	Palesa is caregiving for her sister's children. At the time of the interview, she was not in a violent relationship, her history of IPV is from previous partners. She shared MH challenges with symptoms linked to depression.
Nomie	28	Two	In a relationship	Grade 5	Unemployed	Nomie was in a violent relationship at the time of the interview. She shared MH symptoms linked to depression.
Cindy	49	Two	Married	Grade 8	Unemployed	Cindy has a history of violence with her current partner, however at the time of the interviewer the violence had ceased. She shared MH symptoms linked to depression and anxiety
Londiwe	42	Three	Married	No schooling	Part-time employment	Londiwe has a history of violence with her current partner, however at the time of the interviewer the violence had ceased. She shared MH challenges with symptoms linked to suicidality and depression.
Ntomfuthi	28	One	Single	Grade 12	Part-time employment	Ntomfuthi has a history of violence with her previous partner, however at the time of the interview she was single. She shared MH challenges with symptoms linked to depression.

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from HIV. When I found out I was always crying, constantly crying. Asking myself for how long I will I have to suffer like this.".

Furthermore, for many of these women, an HIV diagnosis triggered symptoms linked to depression, anxiety, and in extreme cases, suicidal ideation. Ntombi, (26), conveyed the anxieties accompanying her HIV positive status,

"It stresses me when, I think of what will happen when he [son] is grown up. I worry a lot especially when I think of times when I will not be around anymore. My heart is sore and I'm constantly scared."

For those participants who reported suicidal ideation, it was often in situations where their children had also acquired HIV. Silindile's (38) son, for example, was born with HIV, when asked which of all of the challenges, she had encountered is the most difficult for her to accept, she responded:

"I would say the most difficult for me is the HIV status because it directly affects my son. I don't even know where to begin with solving that situation. How will I ever tell my son, he won't even understand how he contracted this virus. This is the thing that breaks my heart the most, even now, sometimes I just have these feelings of wishing I could kill myself. Every time I think about his father, I just wish I had never met that man, if it were up to me, I would have never even walked in the same direction as that man."

Additionally, the perceived burden and the accompanied denial of an HIV diagnosis often significantly impacted their decision-making regarding treatment initiation. Paula, (45), shared how her HIV status and the emotional toll it took delayed her initiation of treatment:

"I wasn't ready to accept. . . so I waited five years after being diagnosed, I felt I needed to counsel myself before I could start taking treatment. There was a time where I did something. . . I would go fetch pills at the clinic and throw them away afterwards, then I fell sick. ***Interviewer:*** *"What happened afterwards?"* ***Paula:*** *"I do not remember exactly who it was, maybe it was the nurse, they told me not to stop taking the pills. They asked me who I want to leave my children with. I went back to the clinic and I never stopped taking them."*

Experiences of living with IPV-MH syndemic

For the participants who had experienced IPV, we found that many of them also reported symptoms indicative of anxiety and depression. Cindy (49) had been in an abusive relationship with the father of her children for many years, she shared how being in this relationship put her in a constant state of fear and worry:

Interviewer: *"So, were there other times in your life where you felt constantly scared or worried?"* ***Cindy:*** *"Yes, it was during that time of the abuse. I would worry all the time about what will happen to my children if I leave. I would look around at other people's lives and feel like I was the only one going through this and I didn't understand why my life was the way that it was. I was so afraid of this man; I thought one day he will kill me."*

Furthermore, Palesa (22), detailed how her abusive relationship created a constant state of anger in her, which she unconsciously directed towards her son. She shared:

"It was difficult, I won't lie, I was angry, I was an angry mother, very angry. Even when he [son] would try and speak to me, I would just insult him to the point that I would even regret it afterwards. I would get pissed off by my partner and take it out on the closest person to me and usually, it was my son he would do a small thing, like spill water, and I would overreact. Like, I realised that the way I was hitting him was not normal. I would take out a lot of pain on him, but I learned that he doesn't know anything, he is a baby".

On the other hand, some participants reported the relationship between MH and IPV as bidirectional where they felt that their MH challenges also lead to violence in their relationship. Nomie (28) shared how her challenges with anger which spurred from her childhood trauma often impacted on her intimate relationships at times leading to violence:

"I'm one person who is quick to anger. I've always been an angry person. I have serious anger issues especially when I think about how my parents can just abandon me like that as a child. If someone does something to me, I get very angry and I want us to hit each other". ***Interviewer:*** *"Oh, and have you ever hit each other?* ***Nomie:*** *"With this one [current partner], no it hasn't happened. I've noticed that he holds back even when I try to provoke him so that we can fight he holds back a lot. So, I tend to push him so that he can get to the point where he hits me so that I can also hit him back. But he holds back and doesn't hit me. [laughs]. But with the others? like my ex. We used to fight a lot. When we would start fighting everything would be all over the place, you'd see this table turned upside down. Ah we would beat each other."*

Experiences of women living with HIV-IPV-MH syndemic

In our study, the women among the group who had experienced all three intersecting epidemics, spontaneously shared their experiences of childhood sexual abuse (CSA), which appears to have contributed to MH challenges in adulthood especially in situations where they disclosed to caregivers and were not believed. It must be noted however, that the lack of disclosure in the other groups, does not preclude the existence of CSA in the histories of the other women who did not disclose. Although we did ask participants about experiences of violence during childhood, we did not explicitly ask about sexual abuse. This could mean that some participants may have chosen not to disclose such experiences. Nonetheless we did find that the MH challenges amongst this group were very severe. Lerato (24), reported:

"When I was living with my uncle and aunt it was not good. They used to abuse me. My uncle used to force me to have sex with him. He was abusing me. This river is where I used to go to be alone and wish that I could die. And in terms of the railway, I tried to tie myself with a rope and kill myself on the railway. But I didn't manage. And even now there are times when I still feel like this. Recently I even tried to kill myself."

When discussing her adult relationships, Lerato shared how she was in an abusive relationship with the father of her child:

"Ah that one used to hit me a lot. He would come home drunk and he would beat me. He didn't do anything for me and my son. I had to do everything for us" **Interviewer:** *"Is there anyone that you told about what was happening?"* Lerato: *"No, I didn't tell anyone. I'm not used to telling people about my problems because I generally don't trust people."*

Sphe (28), who also had an experience of CSA, shared how the experience left her confused and experiencing severe MH challenges, she shared:

> *"This is when I was raped [pointing at drawing], I lived with the effects of the rape even though I didn't know or understand what rape was. My family kept telling me that I hadn't experienced what I knew I went through and that really traumatised me. I even started experiencing memory loss and when that happened it was like it validated them and they started saying I am crazy that's why I was accusing that boy of raping me. My life after that was not okay, I was constantly scared and paranoid."*

Because of this experience Sphe was isolated from her family, which she believed made her susceptible to dating an abusive partner. When speaking about her partner Sphe recalled:

> *"Things between me and my partner started changing and I think they changed because he started learning more about my life and he found out that I am basically an orphan and I have nobody and I rely mostly on him. And that's when he became toxic"* ***Interviewer:*** *"Can you tell me a little bit more about what you mean when you say that he was toxic?* ***Sphe:*** *"One day, he asked me why he has never seen anyone in my family coming to visit me in all the time that we had been dating and that's when I told him about my family background. I told him that I do have family but we aren't close and we don't visit each other. From there on he started changing as he realised that I am alone and that's when he became toxic and abusive."*

IPV-HIV syndemic

In relation to the IPV-HIV syndemic, although there was no direct link that didn't include MH challenges, we did find participants who made their own association, participants shared that they believed that they had contracted HIV because of their abusive partners who had been cheating on them incessantly, Silindile (38) expressed:

> *"You know, what hurt me the most when I first found out was because I felt like I didn't deserve to have this thing [HIV]. Two sexual partners in my whole life. The reality of this really hurt me. . . I was loyal to my partner. I mean you stay with someone and you tell yourself that you are committed but on the other hand you are with a partner who is running the streets. And then I discovered I was HIV positive."*

Coping strategies

Participants from the different groups had varied ways of coping with living with the syndemic and other challenges in their lives. Some of the coping strategies included their own resilience and having the inner belief that they could overcome any obstacle. Religion and church also played a crucial role.

HIV-MH syndemic and coping strategies

Women living with the HIV-MH syndemic shared that a combination of self-reliance, family support, hope, and religious faith was how they coped. In terms of self-reliance, Rejoice (25) highlighted the significance of having to rely on herself to cope and overcome her adversities:

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S1 Checklist. STROBE statement—Checklist of items that should be included in reports of observational studies.
(DOCX)

S2 Checklist. Inclusivity in global research.
(DOCX)

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health [79]. A good example of this is the SHARE multicomponent intervention in Uganda which has effectively managed to reduce HIV incidence and IPV in women [80].

Furthermore, taking into consideration the diversity in coping strategies observed in the participants, there is a need to support positive coping strategies while providing targeted interventions for harmful coping strategies such as substance misuse among women living with the syndemic. An example is the coping strategies intervention implemented at the ART clinic of the All-India Institute of Medical Science in New Delhi. The intervention aimed to enhance positive coping mechanisms and quality of life among people living with HIV through informational support, adaptive coping strategies, social support, and positive living [81].

Furthermore, our study highlights the importance of considering the unique contexts and backgrounds of individuals when designing and implementing public health interventions. In particular, the role of cultural and socio-economic factors in shaping the experiences of HIV, IPV and MH epidemics requires context-specific strategies.

Moreover, the high prevalence of MH challenges identified in the current sample highlights a need for enhancement of MH care especially in peri-urban and rural areas, where MH services are close to non-existent [70]. Strengthening MH services in these areas would serve as a critical aspect in addressing the syndemic effectively. Research highlights the importance of community-based MH interventions as pivotal especially in low-resource communities. For instance, Malawi has integrated their Health Surveillance Assistants to deliver MH interventions into the community's already existing social and cultural structures [82]. Similarly, in South Africa there is an ongoing effort through the Mental Health integration program aimed at enhancing integration of MH services in the primary health care system. However, despite the innovativeness of this program, the effectiveness is significantly hindered by inadequate funding, poor administrative coordination and low MH awareness among officials and the general population. [83].

Future research should focus on the development of interventions that can address the co-occurrence and the multi-faceted nature of these epidemics. This includes the exploration of the efficacy of integrated care models and the potential of Mobile-health solutions in increasing accessibility to MH and support services, especially in resource limited settings. There is also a need for more qualitative research on the IPV, MH and HIV syndemic. Whilst there is an abundance of quantitative research in this area [84–87], qualitative research is critical in providing a deeper and more nuanced understanding of the syndemic.

Conclusion

Our study highlights the intricate hardships faced by women navigating combinations of HIV, IPV, and MH epidemics and how the combination of epidemics worsens each of these. MH challenges were a consistent factor, whether associated with HIV, or IPV. A deeper understanding into these women's multifaceted experiences is vital for developing targeted strategies that address their specific needs, thus enhancing their overall quality of life.

Supporting information

S1 Table. Referral flags and categories.
(DOCX)

S1 Text. Interview guide.
(DOCX)

S2 Text. Art-based method prompts.
(DOCX)

participants may not have met the criteria of the questionnaire leading them to not being categorized as experiencing a particular MH challenge. However, to refine this categorization, we re-categorized the groups, based on the information gathered from the qualitative interviews. For example, participants not initially flagged for MH challenges in the questionnaire but who later revealed symptoms indicative of such during the interviews were re-categorized accordingly. This additional layer of categorization aimed to capture more accurately the complexities of each participant's experiences.

Although there is much debate about what constitutes as sensitive research, according to Lee and Renzetti, any topic can be deemed as sensitive, however there are some topics that are likely to cause more distress in individuals than others such as HIV/AIDS, MH issues, death and bereavement [74, 75]. Research on personal experiences of violence and childhood trauma can be classified as sensitive [76]. The sensitive nature of the topics discussed in the interviews may have influenced the participant's willingness to fully share and be open, thus leading to potential underreporting due to discomfort or fear of stigma. To address this, interviewers assured participants of the confidentiality of their responses, and assurance that they would receive help if they felt distressed during the interview. Ensuring participants anonymity and confidentiality increased the likelihood of participants providing more truthful and genuine responses [77].

Reflexivity in qualitative research is imperative, this involves the ongoing, cooperative and multifaceted activities where researchers actively critique and assess the ways in which their personal perspectives and backgrounds can potentially affect the research [78]. We acknowledge that our personal beliefs, cultural understanding, and personal experiences may have shaped our interpretation as well as the presentation of the participants' stories and as a result potentially introducing subjective biases. As an attempt to mitigate this, the research team had regular debriefing sessions throughout the study, where we discussed and challenged each other's viewpoints, which helped in ensuring a more balanced perspective on the data. Furthermore, the interviewers also kept detailed field notes after the interviews which were reflective accounts of the interviews including the interviewer thoughts and reactions to the interview.

Furthermore, the potential for response bias due to the interview-led nature of the interviews was another limitation. However, to mitigate this, experienced qualitative interviewers were used and trained to maintain neutrality and foster a non-judgmental and supportive environment.

Finally, while the study's focus on the South African peri-urban and rural context provides in-depth and context specific insights especially due to the limited data in such settings, this also implies that the findings may not be directly transferable to other settings. The experience of women in this specific context are shaped by unique socio-cultural, economic, and environmental factors which may differ significantly from those in other provinces or countries.

Despite the limitations outlined, the study holds substantial value, particularly in understanding the experiences of women in South African peri-urban and rural contexts. It also lays a foundation for further research, suggesting the need for more studies with diverse samples to broaden the understanding of these complex experiences in varied settings.

Implications of the research and next steps

The findings of the current study highlight the importance of addressing the interconnected epidemics of HIV, IPV and MH in a comprehensive and integrated manner. A key implication is the need for holistic care approaches that are geared towards tackling these interlinked epidemics rather than treating them in isolation. A holistic approach has the potential to improve prevention and response strategies, ultimately contributing to beneficial outcomes in public

study by Sreelekshmi (2015) involving 150 HIV-positive individuals highlighted the prevalent use of emotion-focused coping techniques [23]. A significant 65.7% of participants identified acceptance as their primary coping approach. However, for some participants who had experienced IPV, the acceptance conveyed often leaned towards resignation. This type of acceptance was deeply entrenched in feelings of desolation and helplessness. Moreover, in the literature, acceptance in the face of IPV has also been characterised as a form of denial or avoidance which is often linked to PTSD symptomology [65–67]. On the other hand, there were some participants that seemed to have accepted and normalized the violence. In relation to the latter, research has also found that in some contexts young women may perceive violent men as more desirable partners and as being real men, in such situations, IPV is not only normalized but is also seen as a necessary component in romantic relationship [68, 69].

As mentioned, substance misuse, especially in the context of IPV was a recurrent theme amongst participants. This observation is echoed by Mehr et al. (2023), who define substance misuse as the consumption of substances in high quantities or inappropriate contexts [70]. Their research highlights that those subjected to IPV frequently resort to substance misuse as a way to manage the emotional and physical trauma they endure and as a form of self-medication. Our findings are in line with this, particularly among women who had experienced the combinations including IPV. Our findings add and expand to the literature on coping strategies among women living with the different combinations of HIV, IPV and MH epidemics, as we not only identified which strategies were more prevalent but also how their manifestations differed based on the unique combinations of epidemics each woman faced.

Understanding how women cope with these often-co-occurring epidemics is imperative as it provides an opportunity to better inform clinical practice, as well as contribute to the development of comprehensive, evidence-based strategies for prevention, support, and treatment. Furthermore, our findings also highlight the significance of considering the impact at the community and interpersonal levels in IPV research. They also affirm the perspective that IPV should be treated as a communal issue rather than an individual problem.

Limitations

Although the current study provides valuable insights, it is not without its shortcomings and limitations. The first limitation is related to translation of the interviews. Some researchers argue that translation during the research process has the potential to introduce a level of bias as translation involves some subjective interpretation [71]. It includes cultural interpretation and an understanding of the context, and herein is where the bias is often introduced [72]. It is thus critical to incorporate ethical translation practices in research to limit such biases. These include using translators who are not only proficient in the language but are also familiar with the context and the environment [73]. For the current research, interviews were conducted in Siswati and Xitsonga and subsequently transcribed and translated into English. Though this posed a potential limitation as some nuances may have been lost in translation, efforts were made to ensure accuracy and preserve the essence of the participants' responses. The measures included, having transcribers who were fluent in the language the interview was conducted in as well as English. Secondly the interviewers were also familiar with the community, with two of the interviewers having worked in the area for over a decade on various other research projects. Finally, in cases where there was no direct translation for a particular word or phrase, an explanation in English was provided in brackets.

Another limitation concerns the method used for categorizing participants into different epidemic combinations. While this approach initially provided a structured framework for analysis, it might have introduced some degree of arbitrariness, where in some cases some

deeper look at the experiences of women living with the IPV-HIV-MH syndemic is critical at this point.

The experiences of women living with IPV-HIV-MH syndemic

Among this group of women with the IPV-HIV-MH syndemic, a prominent shared experience was the history of CSA. The trauma from CSA has been identified as a potential precursor to adult MH challenges, given its long-lasting detrimental effects on psychological well-being [58–60]. Many of the participants reported symptoms indicative of depression, anxiety, and suicidality, which align with previous findings on the profound impact of CSA on survivors' psychosocial development [58, 61].

Furthermore, research indicates that CSA survivors face an elevated risk of sexual revictimization in later life, including within stable relationships [62]. This revictimization can manifest as various forms of IPV, such as psychological and physical abuse [59]. The latter indicates a cyclical pattern where early trauma can lead to MH challenges which in turn increase vulnerability to IPV [54].

Regarding the HIV component, while none of the participants directly linked their HIV diagnosis to violence, some believed that their acquisition resulted from their abusive partners' extramarital affairs. This perspective underscores the intersectionality of these epidemics: the compounded vulnerabilities from CSA and MH challenges potentially leading to relationships characterised by IPV, and within these relationships, an increased risk of contracting HIV.

It must be noted, however, that these relationships are not strictly linear but bidirectional. For instance, while CSA can predispose individuals to MH challenges [61], which might then lead to violent relationships and an elevated HIV risk [12, 59], the reverse can also hold true. MH challenges might manifest first, making the child more susceptible to CSA. Similarly, an HIV diagnosis might precipitate or exacerbate violence in relationships [12]. Recognizing this intricate web of bidirectional influences underscores the need for a nuanced and multifaceted approach to understanding and addressing the overlapping epidemics faced by these women.

Coping strategies

According to Lazarus and Folkman (1984) two primary coping modalities can exist: problem-focused and emotion-focused coping [63]. The former encompasses efforts to alter the environment or the problem itself, while the latter aims to alleviate emotional distress [63]. Most of our participants leaned towards emotion-focused coping strategies. The coping strategies used by women living with different combinations of the IPV, HIV and MH syndemic revealed several patterns and similarities. Acceptance emerged as a cross-cutting coping strategy observed across all combinations. Participants in the HIV-MH group expressed religion and belief in God as important in coping with challenges. Additionally, substance use was commonly mentioned in combinations involving IPV. Furthermore, the reliance of social support to cope was found in the groups who did not experience IPV. Research focusing on coping strategies among women dealing with IPV revealed that victims found their families, friends, and neighbours to be supportive and reliable resources for assistance [25]. Our study, however, did not find that participants experiencing IPV relied on family and social support structures as a way of coping, in such situations. Some theories have posited that the reason for this could be that often in IPV situations the perpetrator is likely to isolate their partner from their friends and family [64].

The notion of acceptance although cross-cutting across the groups, its manifestation differed based on the unique combination of adversities each participant faced. When considering HIV and acceptance, our findings resonate with prior research in the field. For example, a

positive pregnant women and suicidal ideation, our study identifies a gap in the literature specifically related to maternal suicidal ideation in the context of vertical transmission.

Furthermore, the current study is unique in that it emphasizes the role of internalized stigma within the syndemic. Our findings show that internalized stigma not only amplifies the maternal guilt often associated with vertical transmission but it also intensifies overall MH challenges faced by people living with HIV. Evidently despite the advancements in HIV treatment as well as widespread prevalence, HIV stigma still persists. This finding is significant as it highlights the importance of tackling the medical aspects of HIV, as well as the societal and psychological barriers such as stigma, which significantly contribute to these complex intertwined epidemics.

Moreover, many participants in this group reported initial feelings of overwhelming fear of death and denialism, which led to delays in seeking HIV treatment. Evidently the psychological impact of an HIV diagnosis exacerbated their MH challenges, which in turn impeded them from seeking timely medical intervention. This is in line with other research which has found a positive relationship between poor MH and delayed medical intervention [52]. Such findings highlight the need for psychological screenings alongside HIV testing. Incorporating psychological screenings alongside HIV testing presents multiple advantages. Firstly, it could enable early identification and management of potential MH challenges and as result possibly averting the worsening of both mental and physical outcomes. Secondly, the screening could also serve to address the psychological barriers such as anxiety, fear and denialism that often hinder timely HIV treatment [52]. By implementing psychological screening as part of HIV testing, this can mitigate the syndemic impact of these health challenges.

The experiences of women living with the IPV- MH syndemic

Women experiencing the IPV-MH syndemic often displayed symptoms indicative of anxiety and depression. For some participants these MH challenges existed before their IPV experience. This aligns with prior research indicating that pre-existing MH challenges can predispose individuals to IPV victimization [11, 53, 54]. Conversely for other participants IPV was a salient trigger or exacerbated MH challenges, creating a cyclical relationship where IPV and MH challenges intensify each other. This bidirectional relationship where each condition aggravates the other is indicative of a syndemic. The MH repercussions of IPV have been thoroughly reported on in the literature, with conditions ranging from PTSD and depression to anxiety and eating disorders [53, 55, 56]. Evidently the relationship between IPV and MH goes beyond co-occurrence. When these two epidemics intersect, they also mutually exacerbate the other, often resulting in a compound impact on the women.

The HIV-IPV intersection

In the present study, we didn't find an exclusive overlap between IPV and HIV, as all participants reported concurrent MH challenges. It appeared that any existing IPV-HIV connection was invariably connected with MH challenges. Research indicates that an HIV diagnosis can increase stress at both the individual and relationship level. This heightened stress can adversely impact women's mental health, potentially increasing their vulnerability to becoming involved in an abusive relationship [9, 57]. Other studies indicate that the influence of HIV on IPV is notably accentuated in women already struggling with IPV in their relationships, as their partners, often with a heightened antisocial disposition, might react more aggressively to an HIV diagnosis disclosure [12].

While we did not find evidence of a standalone IPV-HIV overlap, the data consistently highlighted the omnipresence of MH challenges, intersecting with the other two epidemics. A

"It has really affected my family because my younger sister and I were born with HIV. At first it was difficult to accept, but eventually I accepted that I have to take my medication and go to the clinic in order to live longer."

Finally, Cindy (49), who was living with the IPV-MH syndemic, shared that when she was being abused by her husband, what helped her cope was hope that he would change as well as acceptance of the situation because of her dependence on him, she reported:

"I hoped that one day things would turn out okay. I was afraid to go to social workers or the police because I didn't want him to get arrested because if he got arrested what would we eat. In life you have to accept everything that happens to you. You have to accept and let it pass and understand that this is life."

Our findings showed that substance use was more commonly mentioned in the combinations involving IPV, whilst hope, self-reliance, family support, and religious faith were prominent coping strategies in the HIV-MH syndemic.

Discussion

The experiences of women living with the HIV, IPV, and MH syndemic are complex. The study identified intersections and the synergistic interactions between HIV-MH, IPV-MH, and the relationship between IPV-HIV-MH. Our findings suggest that HIV, IPV and MH challenges interact in ways that exacerbate the severity and impact of each condition and we therefore propose that the co-occurrence of these epidemics constitutes a syndemic. Notably, beyond substance use, other MH challenges were evident among the participants, warranting an expansion of the SAVA syndemic concept. We found that among participants living with the HIV- MH syndemic, an HIV diagnosis was met with denial, symptoms related to depression, anxiety and suicidality and delayed treatment initiation. In the IPV-MH syndemic group, participants reported symptoms related to anxiety and depression in relation to the abuse they experienced, participants also reported a bi-directional relationship between IPV and MH with IPV worsening MH and MH challenges increasing women's vulnerability to IPV. Participants experiencing all three epidemics reported a history of CSA, which was associated with MH challenges over their life course and experiences with IPV from past and current partners. Participants coped with their circumstances mostly through acceptance of the situation and religion, while others used excessive substance use to help them cope and detach. In the groups where IPV was not present, participants relied on family, friends, religion and other social support.

The experiences of women living with the HIV-MH syndemic

In the HIV-MH interaction, the syndemic nature is evident. We found that an HIV positive diagnosis often triggered MH symptoms linked to depression and anxiety among participants and in many cases also exacerbated the symptoms. This was particularly apparent especially in cases of vertical HIV transmission where maternal guilt, which was often intensified by internalized stigma significantly increased the risk of severe MH challenges such as suicidal ideation. This complex interplay aligns with findings from KwaZulu Natal study which identified a significant prevalence of suicidal ideation among pregnant women diagnosed with HIV [49]. Additionally research from Mpumalanga reported that the factors associated with suicidal ideation among HIV positive pregnant women included, major depression, partner disclosure status, stigma, age, and partner aggression [49–51]. Despite the existing research on HIV

narrative paints a vivid picture of her struggle with her HIV diagnosis and her journey towards acceptance. She shared:

"I've accepted it because at the end of the day there is nothing, I can do about it".

When we probed deeper into the length of her acceptance journey, she touched upon the solace she sought in alcohol not only in relation to her diagnosis but also her childhood trauma experiences:

"It took a very long time. And during that time all I wanted to do was be at the tavern and drink because I didn't want to think about what had happened. I wanted to distract myself. I would just go to the tavern, drink and come back and pass out. If I passed out after a drunk night it was better because I wouldn't think about anything."

Diana (43) also shared her story, not only about living with HIV but also grappling with a childhood marred by abuse. The relative who fathered her first child had sexually assaulted her during her younger years. Further complicating her life was the consistent physical and emotional abuse she endured from her husband and the longstanding MH challenges that plagued her from childhood. In search of relief, Diana turned to alcohol. She recounted:

"He would hit me when he was drunk. . . Then I came back home and decided to never go back there. That was the time that I started drinking alcohol, I was too stressed. I gave my life away to alcohol, it felt as though what I was doing was the right thing. I felt good when drinking. I drank so much to a point that had I not stopped drinking, I would have been dead by now".

However, amid these challenges, the women's commitment to motherhood provided a sense of hope for them. Silindile highlighted this sentiment, asserting:

"I think it's my children that give me the go forward, because the last thing I want is for my children to struggle." Nokuthula (26) also shared the following when asked how she coped with her challenges, *"My children are the reason that makes me wake up every morning, raise my head, and say thank God for giving me another day to live. Then in my life, the people that I have as my priority, are my children and my brother".*

Overall, we found that acceptance was a cross-cutting coping strategy observed across all the different epidemic combinations. Nokuthula (26), who had experienced all three epidemics had the following to say:

"After being raped, the only thing I was scared of was a man. I did not want a man near me; they disgusted me. So, after getting raped for a second time, they ran tests on me, and that's where I found out that I have HIV. It became difficult for me to accept and live with it. It was difficult, very difficult. But as time went by, I decided and accepted that I am living with this thing for the rest of my life and to accept what that man did to me, so why should I be miserable because of it? I think I have to live with the fact that I am HIV positive and I contracted this through rape, and I won't change it."

Moreover, Xoli (23) who was living with the HIV-MH syndemic, shared how she had to accept her diagnosis,

"I guess the support system was mine. Yes, I had uncles and everything, but I believe that Rejoice helped herself out of this, even though somehow that hurt me, but it is also what kept me together to carry on."

Furthermore, hope, coupled with a solid support system, was emphasized as a crucial component for coping by other participants. Xoli (23), who was born with HIV, and struggled with MH symptoms linked to depression spoke about her hope as well as the support she received from her family in helping her survive to this point:

"Having the hope that things will get better and being able to confide in my aunt and having her support. . . I have learned that I can overcome anything no matter how difficult it is."

For some of the women, religious faith and their trust in a higher power were instrumental in navigating their challenges. Their conviction provided both comfort and resilience amid adversity. Nelly (57), who not only contracted HIV from her husband but also grappled with the loss of a child and socio-economic challenges stemming from unemployment, leaned on her faith for comfort She expressed:

"In everything that I do, I say, God, you are the alpha and omega in my life, you will not forsake me. I know in the end you will make my life better."

IPV-MH syndemic and coping strategies

For women struggling with the IPV-MH syndemic, two primary coping strategies emerged: the use of substances as described earlier for women living with the HIV-IPV-MH syndemic as a means of escape and distraction and clinging to the hope of a brighter future. Londiwe (49), who suffered severe IPV at the hands of her husband, shared that she coped by being hopeful that things would change, she reflected,

"It was the hope that everything would eventually be fine. I hoped that one day things would turn out okay."

On the subject of substance use as way for mental detachment, Nomie (28) noted:

"I just drink at home; I drink and then I sleep. I usually drink if I want to distract myself and I just don't want to think. ***Interviewer:*** *"What do you want to distract yourself from?"* ***Nomie:*** *"Honestly, everything hey, relationships, life, work, everything. I sometimes feel like nothing is going right in my life. I try do this and it doesn't work out, then I try something else and it also doesn't work, so I find myself feeling discouraged. Usually if I don't drink, I'll end up smoking dagga. But I like dagga because when I smoke, I don't think about anything; I just sleep."*

IPV-MH-HIV syndemic and coping strategies

The women living with the IPV-MH-HIV syndemic, when probed on how they coped with these intersecting epidemics, shared that acceptance, an unwavering commitment to their children, and, for some, substance misuse as a means of temporary relief. Many participants conveyed that alcohol, albeit briefly, provided some form of escape from their lives. Lerato's (24)

narrative paints a vivid picture of her struggle with her HIV diagnosis and her journey towards acceptance. She shared:

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The experiences of women living with the HIV-MH syndemic

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positive pregnant women and suicidal ideation, our study identifies a gap in the literature specifically related to maternal suicidal ideation in the context of vertical transmission.

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Moreover, many participants in this group reported initial feelings of overwhelming fear of death and denialism, which led to delays in seeking HIV treatment. Evidently the psychological impact of an HIV diagnosis exacerbated their MH challenges, which in turn impeded them from seeking timely medical intervention. This is in line with other research which has found a positive relationship between poor MH and delayed medical intervention [52]. Such findings highlight the need for psychological screenings alongside HIV testing. Incorporating psychological screenings alongside HIV testing presents multiple advantages. Firstly, it could enable early identification and management of potential MH challenges and as result possibly averting the worsening of both mental and physical outcomes. Secondly, the screening could also serve to address the psychological barriers such as anxiety, fear and denialism that often hinder timely HIV treatment [52]. By implementing psychological screening as part of HIV testing, this can mitigate the syndemic impact of these health challenges.

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It must be noted, however, that these relationships are not strictly linear but bidirectional. For instance, while CSA can predispose individuals to MH challenges [61], which might then lead to violent relationships and an elevated HIV risk [12, 59], the reverse can also hold true. MH challenges might manifest first, making the child more susceptible to CSA. Similarly, an HIV diagnosis might precipitate or exacerbate violence in relationships [12]. Recognizing this intricate web of bidirectional influences underscores the need for a nuanced and multifaceted approach to understanding and addressing the overlapping epidemics faced by these women.

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study by Sreelekshmi (2015) involving 150 HIV-positive individuals highlighted the prevalent use of emotion-focused coping techniques [23]. A significant 65.7% of participants identified acceptance as their primary coping approach. However, for some participants who had experienced IPV, the acceptance conveyed often leaned towards resignation. This type of acceptance was deeply entrenched in feelings of desolation and helplessness. Moreover, in the literature, acceptance in the face of IPV has also been characterised as a form of denial or avoidance which is often linked to PTSD symptomology [65–67]. On the other hand, there were some participants that seemed to have accepted and normalized the violence. In relation to the latter, research has also found that in some contexts young women may perceive violent men as more desirable partners and as being real men, in such situations, IPV is not only normalized but is also seen as a necessary component in romantic relationship [68, 69].

As mentioned, substance misuse, especially in the context of IPV was a recurrent theme amongst participants. This observation is echoed by Mehr et al. (2023), who define substance misuse as the consumption of substances in high quantities or inappropriate contexts [70]. Their research highlights that those subjected to IPV frequently resort to substance misuse as a way to manage the emotional and physical trauma they endure and as a form of self-medication. Our findings are in line with this, particularly among women who had experienced the combinations including IPV. Our findings add and expand to the literature on coping strategies among women living with the different combinations of HIV, IPV and MH epidemics, as we not only identified which strategies were more prevalent but also how their manifestations differed based on the unique combinations of epidemics each woman faced.

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Limitations

Although the current study provides valuable insights, it is not without its shortcomings and limitations. The first limitation is related to translation of the interviews. Some researchers argue that translation during the research process has the potential to introduce a level of bias as translation involves some subjective interpretation [71]. It includes cultural interpretation and an understanding of the context, and herein is where the bias is often introduced [72]. It is thus critical to incorporate ethical translation practices in research to limit such biases. These include using translators who are not only proficient in the language but are also familiar with the context and the environment [73]. For the current research, interviews were conducted in Siswati and Xitsonga and subsequently transcribed and translated into English. Though this posed a potential limitation as some nuances may have been lost in translation, efforts were made to ensure accuracy and preserve the essence of the participants' responses. The measures included, having transcribers who were fluent in the language the interview was conducted in as well as English. Secondly the interviewers were also familiar with the community, with two of the interviewers having worked in the area for over a decade on various other research projects. Finally, in cases where there was no direct translation for a particular word or phrase, an explanation in English was provided in brackets.

Another limitation concerns the method used for categorizing participants into different epidemic combinations. While this approach initially provided a structured framework for analysis, it might have introduced some degree of arbitrariness, where in some cases some

participants may not have met the criteria of the questionnaire leading them to not being categorized as experiencing a particular MH challenge. However, to refine this categorization, we re-categorized the groups, based on the information gathered from the qualitative interviews. For example, participants not initially flagged for MH challenges in the questionnaire but who later revealed symptoms indicative of such during the interviews were re-categorized accordingly. This additional layer of categorization aimed to capture more accurately the complexities of each participant's experiences.

Although there is much debate about what constitutes as sensitive research, according to Lee and Renzetti, any topic can be deemed as sensitive, however there are some topics that are likely to cause more distress in individuals than others such as HIV/AIDS, MH issues, death and bereavement [74, 75]. Research on personal experiences of violence and childhood trauma can be classified as sensitive [76]. The sensitive nature of the topics discussed in the interviews may have influenced the participant's willingness to fully share and be open, thus leading to potential underreporting due to discomfort or fear of stigma. To address this, interviewers assured participants of the confidentiality of their responses, and assurance that they would receive help if they felt distressed during the interview. Ensuring participants anonymity and confidentiality increased the likelihood of participants providing more truthful and genuine responses [77].

Reflexivity in qualitative research is imperative, this involves the ongoing, cooperative and multifaceted activities where researchers actively critique and assess the ways in which their personal perspectives and backgrounds can potentially affect the research [78]. We acknowledge that our personal beliefs, cultural understanding, and personal experiences may have shaped our interpretation as well as the presentation of the participants' stories and as a result potentially introducing subjective biases. As an attempt to mitigate this, the research team had regular debriefing sessions throughout the study, where we discussed and challenged each other's viewpoints, which helped in ensuring a more balanced perspective on the data. Furthermore, the interviewers also kept detailed field notes after the interviews which were reflective accounts of the interviews including the interviewer thoughts and reactions to the interview.

Furthermore, the potential for response bias due to the interview-led nature of the interviews was another limitation. However, to mitigate this, experienced qualitative interviewers were used and trained to maintain neutrality and foster a non-judgmental and supportive environment.

Finally, while the study's focus on the South African peri-urban and rural context provides in-depth and context specific insights especially due to the limited data in such settings, this also implies that the findings may not be directly transferable to other settings. The experience of women in this specific context are shaped by unique socio-cultural, economic, and environmental factors which may differ significantly from those in other provinces or countries.

Despite the limitations outlined, the study holds substantial value, particularly in understanding the experiences of women in South African peri-urban and rural contexts. It also lays a foundation for further research, suggesting the need for more studies with diverse samples to broaden the understanding of these complex experiences in varied settings.

Implications of the research and next steps

The findings of the current study highlight the importance of addressing the interconnected epidemics of HIV, IPV and MH in a comprehensive and integrated manner. A key implication is the need for holistic care approaches that are geared towards tackling these interlinked epidemics rather than treating them in isolation. A holistic approach has the potential to improve prevention and response strategies, ultimately contributing to beneficial outcomes in public

health [79]. A good example of this is the SHARE multicomponent intervention in Uganda which has effectively managed to reduce HIV incidence and IPV in women [80].

Furthermore, taking into consideration the diversity in coping strategies observed in the participants, there is a need to support positive coping strategies while providing targeted interventions for harmful coping strategies such as substance misuse among women living with the syndemic. An example is the coping strategies intervention implemented at the ART clinic of the All-India Institute of Medical Science in New Delhi. The intervention aimed to enhance positive coping mechanisms and quality of life among people living with HIV through informational support, adaptive coping strategies, social support, and positive living [81].

Furthermore, our study highlights the importance of considering the unique contexts and backgrounds of individuals when designing and implementing public health interventions. In particular, the role of cultural and socio-economic factors in shaping the experiences of HIV, IPV and MH epidemics requires context-specific strategies.

Moreover, the high prevalence of MH challenges identified in the current sample highlights a need for enhancement of MH care especially in peri-urban and rural areas, where MH services are close to non-existent [70]. Strengthening MH services in these areas would serve as a critical aspect in addressing the syndemic effectively. Research highlights the importance of community-based MH interventions as pivotal especially in low-resource communities. For instance, Malawi has integrated their Health Surveillance Assistants to deliver MH interventions into the community's already existing social and cultural structures [82]. Similarly, in South Africa there is an ongoing effort through the Mental Health integration program aimed at enhancing integration of MH services in the primary health care system. However, despite the innovativeness of this program, the effectiveness is significantly hindered by inadequate funding, poor administrative coordination and low MH awareness among officials and the general population. [83].

Future research should focus on the development of interventions that can address the co-occurrence and the multi-faceted nature of these epidemics. This includes the exploration of the efficacy of integrated care models and the potential of Mobile-health solutions in increasing accessibility to MH and support services, especially in resource limited settings. There is also a need for more qualitative research on the IPV, MH and HIV syndemic. Whilst there is an abundance of quantitative research in this area [84–87], qualitative research is critical in providing a deeper and more nuanced understanding of the syndemic.

Conclusion

Our study highlights the intricate hardships faced by women navigating combinations of HIV, IPV, and MH epidemics and how the combination of epidemics worsens each of these. MH challenges were a consistent factor, whether associated with HIV, or IPV. A deeper understanding into these women's multifaceted experiences is vital for developing targeted strategies that address their specific needs, thus enhancing their overall quality of life.

Supporting information

S1 Table. Referral flags and categories.
(DOCX)

S1 Text. Interview guide.
(DOCX)

S2 Text. Art-based method prompts.
(DOCX)

S1 Checklist. STROBE statement—Checklist of items that should be included in reports of observational studies.
(DOCX)

S2 Checklist. Inclusivity in global research.
(DOCX)

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Appendix H: Confirmation of Qualitative Paper still to be published

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Article	**Co-occurring Intimate Partner Violence, Mental Health, HIV and Parenting Among Women: A Scoping Review**
DOI	**10.1177/15248380241268807**
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