Investigating the prevalence of TBI in a sample of South African women who have experienced IPV in a South African context

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DECLARATION

This work has not been previously submitted in whole, or in part, for the award of any degree. It is my own work. Each significant contribution to, and quotation in, this dissertation from the work, or works, of other people has been attributed, and has been cited and referenced.

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Abstract

Intimate partner violence (IPV) and traumatic brain injuries (TBI) are widespread, both globally and in South Africa. It is crucial to recognize the link between IPV and TBI. Increasing numbers of international studies have demonstrated concerning rates of TBI in women who have experienced IPV. However, such studies have not yet been conducted in South Africa. Therefore, the current study aims to address this literature gap by investigating rates of possible IPV-related TBI in South African women and their lived experiences.

The current study sample included women who have experienced IPV (*n*=57) and women who have not experienced IPV (*n*=24). The research utilized a mixed methods approach, recruiting participants from low- to middle-income communities and shelters for abused women in Cape Town. Quantitative data were gathered through self-report questionnaires, namely a demographic questionnaire, the Brain Injury Screening Questionnaire (BISQ), and the Women Abuse Screening Tool (WAST), while qualitative data were obtained via semi-structured interviews. Descriptive statistics were used for the quantitative analysis, and thematic analysis was applied for the interview data.

Findings showed a significant prevalence of TBI among women with a history of IPV (51 of the 57 / 89.5%) compared to those without reported TBIs that were IPV-related. Four themes emerged from the qualitative results: 1) living with and experiencing physical abuse, 2) the impact of physical abuse on the face, neck, and head, 3) the impact of IPV on change to and in self, and 4) the impact of IPV on future intimate relationships.

The limitations of the study included challenges related to language, sample size, time constraints, and funding. Despite these limitations, the study yielded valuable data, highlighting the need for future research to address these constraints and increase the focus on screening for TBI among women who have experienced IPV.

Contents

Declaration……………………………………………………………………………1

Acknowledgement……………………………………………………………………2

Abstract……………………………………………………………………………..3

Introduction………………………………………………………………………...8

Chapter One: Traumatic Brain Injury, Intimate Partner Violence and its Intersection

Traumatic Brain Injury (TBI)…………………………………………………………..9

Definition and Classification of TBI ………………………………………………9;10

Non traumatic Brain Injury ……………………………………………………..10

Epidemiology of TBI………………………………………………………...10; 11

Neuropsychological Sequelae of TBI……………………………………………11; 12

Intimate Partner Violence (IPV)……………………………………………...............12

Definition and Information of GBV and IPV Against Women…………………12; 13

Classification of IPV ……………………………………………………………13; 14

Epidemiology of Against Women………………………………………14; 15; 16

The Risk Factors for IPV Among Women…………………………………..16; 17; 18

Lived Experiences of Women Who Have Experienced IPV……………………………18; 19

The Intersection Between IPV and TBI………………………………………………… 19; 20

Screening for IPV-related TBI among Women…………………………………20; 21

Rationale……………………………………………………………………………21

Research Questions…………………………………………………………………21

Aims/Hypothesis……………………………………………………………………21; 22

Chapter Two: Research Methodology

Research Design and Setting…………………………………………………………….22

Positionality ……………….…………………………………………………………….22

Participant/Sampling……………………………………………………………………..23

Participant Recruitment ……………………………………………………….23; 24

Screening Measures……………………………………………………………………....24

Demographic Questionnaire ………………………………………………………..24

Measures for The Prevalence of TBI ………………………………………………24

Brain Injury Screening Questionnaire (BISQ)………………………………24; 25

Screening Measures for IPV ………………………………………………………..25

Women Abuse Screening Tool (WAST)…………………………………….24; 25

Interview schedule for part two…………………………………………………….26

Procedure……………………………………………………………………….26; 27; 28

Data Analysis……………………………………………………………………………..28

Part One ……………………………………………………………………………….28

Part Two ……………………………………………………………………………….28

Ethical Consideration……………………………………………………………………..29

Ethical Approval ……………………………………………………………………….29

Informed Consent……………………………………………………………………….29

Confidentiality………………………………………………………………………......29

Referrals……………………………………………………………………………......30

Benefits and Risks ……………………………………………………………..30

COVID-19 Preventative Measures………………………………………………..30

Chapter Three: Results and Discussion

Quantitative Results …………………………………………………………………31

Descriptive Statistics and Demographics…………………………………………31

IPV findings……………………………………………………………………….34

TBI findings……………………………………………………………………….35

IPV and any TBI findings………………………………………………………...35

IPV-related TBI findings…………………………………………………………..36

Discussion……………………………………………………………………………....37

Part One: Quantitative Results ……………………………………………..37; 38

Participant Demographics………………………………………………38; 39

Prevalence of Any TBI…………………………………………………39; 40

Prevalence of IPV………………………………………………………40; 41

The Intersection Between IPV and TBI…………………………………….42

Part Two: Qualitative Results and Interpretation…………………………………43

Living With and Experiencing Physical Abuse…………………..43; 44; 45; 46; 47

The Impact of Physical Abuse on The Face, Neck, and Head…..........47; 48; 49; 50

Impact of IPV on Change to and In Self……………………………….50; 51; 52

IPVs Impact on Future Intimate Relationships…………………52; 53; 54; 55; 56

Chapter Four: Conclusion

Conclusion……………………………………………………………………………57; 58; 59

References………………………………………………………………………………60

Appendices

Appendix A: Consent form part one………………………………………………………89

Appendix B: Consent form part two………………………………………………………95

Appendix C: Demographic questionnaire………………………………………………...100

Appendix D: WAST questionnaire ………………………………………………………105

Appendix E: Part two questionnaire ……………………………………………………..106

Appendix F: Resource list………………………………………………………………...108

Appendix G: Advertisement -Women …………………………………………………...109

Appendix H: Advertisement- Control……………………………………………………110

Appendix I: Ethics approval letter ………………………………………………………111

Figures

Figure 1…………………………………………………………………………………33

Figure 2…………………………………………………………………………………34

Figure 3…………………………………………………………………………………36

Figure 4…………………………………………………………………………………37

Tables

Table 1…………………………………………………………………………………..32

Table 2…………………………………………………………………………………..35

Introduction

Women's experiences of violence have become a major healthcare and social concern globally and in South Africa (Lowery, 2023; Miza, 2023). Traumatic brain injury (TBI) is also a pressing concern nationally and internationally (Gxolo, 2021; Maas et al., 2022; Muili et al., 2024). The nature of physical intimate partner violence (IPV) can result in injury to the head, face, and neck, placing survivors at a higher risk of experiencing an IPV-related TBI. While the literature on both IPV and TBI is extensive, the intersection of the two IPV-related TBIs has not been extensively researched within South Africa among women.

Therefore, this study aimed to investigate the prevalence of IPV and TBI, particularly focusing on IPV-related TBI, in a sample of women in the South African context. The study also aimed to provide insights and understanding of the impact that IPV and potentially sustaining a TBI can have on the lives of South African women, by exploring the lived experiences of a subsample of the survivors.

The current thesis consists of this introduction and four chapters. The first chapter reviews the literature pertaining to TBI and IPV and how the two intersect. The second chapter addresses the methods used to collect the data. The third chapter contains the results and discussion thereof. The study results are sectioned into two parts of this mixed methods study: a descriptive, quantitative component, and an interview-based, qualitative component. The fourth and final chapter concludes the current study and includes the limitations and directions for future studies.

The research conducted contributes to the literature on IPV-related TBI by filling a knowledge gap, enhancing our understanding of the prevalence and impact of IPV-related TBI among women, which has not been frequently investigated globally and is particularly lacking within the South African context.

Chapter One: Traumatic Brain Injuries, Intimate Partner Violence and its Intersection

In this chapter, literature on brain injuries (traumatic brain injuries (TBI) in particular) and intimate partner violence (IPV) is reviewed, along with the intersectionality of IPV and TBI, which includes IPV-related TBI. Although I present an outline of non-traumatic brain injuries, given reference to strangulation in the IPV literature and results reported later on in this thesis, the current research was primarily focused on TBI. The review provides the background to the study presented in the current thesis.

Traumatic Brain Injury (TBI)

Definition and Classification of TBI

A TBI refers to changes in brain functions due to external forces to the skull, and it also forms part of a broader categorisation of Acquired Brain Injuries (ABIs; Centers for Disease Control and Prevention [CDC], 2024a; Suchoff et al., 2008). TBIs can be classified as mild, moderate, or severe based on the injury a patient sustains (Centers for Disease Control and Prevention [CDC], 2015). A review by Dewan et al. (2019) has indicated that there are generally more mild TBIs than moderate and severe cases. Severity is most often measured using the Glasgow Coma Scale score out of 15 (mild TBI: 13-15/15; moderate TBI: 9-12/15; and severe TBI: ≤8/15; Jain & Iverson, 2023). In addition, the duration of loss of consciousness and length of post-traumatic amnesia are also indicators of TBI severity (National Academies of Sciences, Engineering, and Medicine et al., 2019).

TBIs can also be classified as penetrating/open or non-penetrating/closed. Penetrating TBIs are a result of sharp objects piercing the skull and damaging the surrounding tissue (Ng & Lee, 2019). A penetrating TBI can be caused by a gunshot, a mechanism of injury depending on the site of entry that often results in death (D'Agostino et al., 2020; Kochanek et al.,2019; Tsitsipanis et al., 2024). Other mechanisms of injury that may result in open TBIs relate to stab wounds, such as a knife (Ali & Haile, 2023). Non-penetrating TBI can occur as a result of blunt force that strikes directly against the head or the head coming to an abrupt stop, which can put the brain into motion, resulting in acceleration or deceleration forces or both being applied to the brain (Santiago et al., 2012; National Academies of Sciences, Engineering, and Medicine et al., 2019). This can result in diffuse internal, axonal, and blood vessel brain injuries (Santiago et al., 2012; National Academies of Sciences, Engineering, and Medicine et al., 2019). Closed TBIs are more prominent than open TBIs (Ginsburg & Huff, 2023).

A final classification of TBI pertains to primary and secondary injuries. Primary injuries are caused by various mechanical forces during an initial incident involving the head and brain (Ng & Lee, 2019). Secondary injuries occur because of the presence of a primary injury as a result of tissue and cellular damage caused by the primary incident (Ng & Lee, 2019). Secondary injuries include hematomas (bleeding on the brain), anoxia/hypoxia (absence of oxygen supply to the whole brain or certain parts of the brain), and contusions within the brain tissue (CDC, 2015; Ahmed et al., 2017).

Non-traumatic Brain Injuries

A non-traumatic brain injury can occur as a result of internal causes, such as a stroke or infections, that can cause damage and death of the tissue in the brain (Goldman et al., 2022). Such injuries can also result from hypoxia and anoxia (Cerebral Palsy Guidance, 2024; Goldman et al., 2022), as can occur in the case of non-fatal intimate partner strangulation in the context of IPV (Dugan et al., 2024). Anoxia is when the brain and body of a person are completely starved of oxygen flow, and hypoxia is when part of the brain and body does not receive the correct amount of oxygen flow (Goldman et al., 2022; Huizen & Villalobos, 2024). Consequently, such full or partial deprivation of oxygen (anoxia and hypoxia, respectively) can result in serious brain tissue damage if experienced (Sreenvias & Ratini, 2022).

As noted, the current research was primarily focused on TBI and IPV, and therefore, the discussion will return to this focus below.

Epidemiology of TBI

The number of TBI cases globally is rapidly increasing. In 2019, it was reported that there were about 27.16 million new cases of TBI and around 10 million or more people sustaining non-fatal and fatal TBIs worldwide (Guan et al., 2023; Hyder et al., 2007; Oyesanya & Ward, 2016). The CDC (2024e) reported that in 2020, around 214,110 hospitalisation cases were related to traumatic injuries to the head/brain and between 2018 and 2019, over one million deaths were as a result of TBIs in the United States of America (Peterson et al., 2022). Some of the main causes of TBIs globally were reported as falls, car accidents involving a driver and/or pedestrian, and violence (CDC, 2024a; Guan et al., 2023).

Research shows that low- to middle-income countries [LMICs] have the highest rates of TBIs (Dewan et al., 2019; Georgoff et al., 2010). The high occurrence of TBIs in LMICs has resulted in higher mortality rates compared to similar injuries reported in more developed countries (Krebs et al., 2017). Sub-Saharan Africa’s prevalence rates of TBIs are estimated to be around 801 per 100,000 people compared to the worldwide average of 346 per 100,000

people (Huang et al., 2024; Muili et al., 2024). The high prevalence of TBI in LMICs could be attributed to the income status of these countries, as many people within LMICs rely on the primary sector to bring in their money by working semi- or unskilled jobs that place them at risk of sustaining different types of injuries, especially to the head (Khan et al., 2015; Servadei et al., 2018). Access to proper medical healthcare is not easily attainable within LMICs, especially for those from poorer socio-economic backgrounds, compared to high-income countries (HIC; Khan et al., 2015; Servadei et al., 2018). Further, causes of TBIs, such as rates of motor vehicle accidents and violence, including intimate partner violence (IPV), are higher in LMICs compared to HICs (Ahmed et al., 2023; Bowman et al., 2006; Ghoshal et al., 2022; Maas et al., 2022; Ralston et al., 2019).

As previously reported by Netcare (2016), new cases of TBIs in South Africa are estimated to be around 89,000 annually. As noted, TBIs are a massive health problem globally, but especially within Sub-Saharan Africa, and South Africa is one of the many countries in the region previously reported to have the highest rate of new TBI cases (Pretorius & Broodryk, 2013). In South Africa, TBIs are commonly reported as among the primary reasons for morbidity and mortality (Groshi & Enicker, 2022).

Although TBIs are consistently reported to be higher in boys and men as compared to girls and women, given greater externalising behaviours among boys and men (Blaya et al., 2022), trends differ depending on the mechanisms of injuries. A review by Biegon (2021) found that women are more likely to sustain a TBI from injury to the head because of contact sports and IPV. Research shows that an increasing number of women join military forces and engage in sports where they may experience injury to the head and consequent TBIs (Biegon, 2021; Blaya et al., 2022; Street et al., 2009). Experiencing IPV has been flagged as a main risk factor for TBI among women (Banks, 2007; Biegon, 2021; Monahan & O'Leary, 1999).

Neuropsychological Sequelae of TBI

Physiological changes to the brain as a result of a TBI can result in changes to a range of neuropsychological domains. The most commonly reported post-TBI cognitive sequelae across all types of severity of TBIs are deficits in executive functioning, memory, and attention (Said et al., 2018).

Deficits in executive functioning can result in the development of problems such as poor planning, organisation, decision-making, ability to form and understand concepts, and the development of impulsive behaviour, as a result of injury to the frontal lobes, which subserve executive functioning (Ozga et al., 2018; Wood & Worthington, 2017). Post-TBI cognitive deficits in memory, often attributed to problems with short-term memory (which

actually relates to attention), can result in a struggle to learn and retain new details and events (Hart & Sander, 2017). Deficits in attention following a TBI are common and usually affect a person's ability to focus, through a decrease in their speed of information processing, as well as hindering their ability to filter out stimuli that can distract them (Said et al., 2018; Tsaousides & Wayne, 2009; Wood & Worthington, 2017).

Post-TBI behavioural outcomes include secondary-Attention Deficit Hyperactivity Disorder [ADHD], and affective/emotional (e.g., mood disorders) dysregulation, as well as other physical outcomes such as headaches, fatigue and sleep disturbances (CDC, 2024c; Emery et al., 2016; Li et al., 2018; Rezaei & Jafroudi, 2023; Riggio, 2011; Salas et al., 2019; Weis et al., 2022). TBIs can also alter the quality of life given these changes in cognitive function, behaviour, and emotive responses, as well as the physical consequences associated with the injury, which, in turn, have an impact on a person's interpersonal, social, and occupational functioning (CDC, 2015).

Intimate Partner Violence (IPV)

Definitions and Information on GBV and IPV Against Women

Gender-based violence (GBV) is considered "physical, sexual or psychological harm or suffering to women, including threats of such acts, coercion or arbitrary deprivation of liberty, whether occurring in public or in private life" (United Nations [UN], 1993, p.2). GBV is a global issue experienced by many women, as 1 in 3 women will experience it throughout their lifetime (World Bank Group, 2019). GBV is a serious problem that is being faced globally and also in South Africa.

The literature emphasises that GBV is not only a surface-level problem but that it is much deeper than what is being portrayed in the media. For example, GBV only accounts for 2% of the news on television in South Africa (Gender Links, 2019). When news outlets cover GBV, only 5% of the stories reported cover prevention campaigns against GBV, while 16% of news outlets provide information on how women who are experiencing GBV can seek advice, support and help from anti-GBV organisations in South Africa (Gender Links, 2019).

The Human Sciences Research Council [HSRC] released its first study on GBV in South Africa in 2024. The study by Zungu et al. (2024), which reports from early 2022 to early 2024, depicts concerning rates of GBV in South Africa. A concerning concluding remark by Zungu et al. (2024) was that many women, 18 and older, had been physically abused during their lifetime. This report showed that within the sample, 33.1% of women nationally experienced physical violence within their lifetime, and 9.8 % experienced sexual violence within their lifetime (Zungu et al., 2024). IPV is considered the most common form

of GBV (Heise & Hossain, 2017; World Health Organization [WHO], 2013). IPV can be defined as abuse experienced by a person from their intimate partner in a present or past relationship (CDC, 2024b; Basile et al., 2007).

Classification of IPV

IPV has also been referred to as a form of domestic violence. The Domestic Violence Act of 1998 states that domestic violence is any form of violence that impacts a domestic relationship of "family, past or current marriage, cohabiting partners, individuals who are in any form of romantic relationship, i.e. dating or engagement which is either genuine or perceived as intimate or sexual" (Domestic Violence Act 116 of 1998 (RSA), s.7, p.2). The different types of domestic violence a victim/survivor can be exposed to are "physical violence, sexual violence, emotional abuse and controlling behaviour, stalking, harassment, economic abuse, intimidation, property damage, and entering the victim's residence without their consent"(Domestic Violence Act 116 of 1998 (RSA), s.7, p.2). The different types of domestic violence are outlined below.

Physical violence can be moderate or severe violence. Moderate physical violence would be slapping, throwing an object, pushing or shoving. Severe physical violence includes more serious forms of assault, such as a fist and/or an object, kicking, violently pulling, battering, choking, burning or setting someone aflame, and intimidating use or usage of any form of weapon to inflict harm on a person (Garcia-Moreno et al., 2006). Sexual violence within the context of an intimate relationship can be classified as physically forcing a significant other into having sexual intercourse against their will, a victim feeling obligated to sleep with their partner because they are afraid that they will be abused if they decline, and/or expecting sexual favours from a partner that can result in the humiliation and degrading of that person's dignity (Garcia-Moreno et al., 2006).

Emotional/psychological abuse and controlling behaviour include manipulation, preventing someone from seeing their friends, humiliating a partner through harmful name calling, cheating, restricting contact and visitation with family members, consistently monitoring the movement of the partner, and extreme jealousy if the partner speaks to another man or woman (Garcia-Moreno et al., 2006; Johnson, 2019).

Stalking is a form of IPV that can be classified as the terrorising and threatening of a partner or his or her family by calling or texting consistently, even when the partner has indicated to them not to do so anymore, frequently hanging around their partner's location without their knowledge, and/or damage to property that belongs to their partner to instil fear or intimidation (Resnick, 2021).

Harassment can be classified as engaging in behaviour that creates the fear of being harmed for the victim (Domestic Violence Act 116 of 1998 (RSA), s.7). This includes stalking the victim near their place of residence, work and/or institution of study (Domestic Violence Act 116 of 1998 (RSA), s.7). Harassment also includes making constant calls to the victim or asking another person to make those repetitive calls to the victim, as well as constantly sending or delivering letters, packages, and/or gifts to the victim (Domestic Violence Act 116 of 1998 (RSA), s.7).

Another form of IPV is economic abuse that can be classified as unfair deprivation of financial resources which a victim must receive under the right of law (Domestic Violence Act 116 of 1998 (RSA), s.7). Other types of IPV include intimidation, which can be classified as verbally or physically threatening a victim resulting in them developing a sense of fear, and damage to property and entering the victim's residence without consent (Domestic Violence Act 116 of 1998 (RSA), s.7). When no consent is given to enter a property, it is considered trespassing and is an infringement upon the rights of the victim being affected (Domestic Violence Act 116 of 1998 (RSA), s.7). Damage to the victim's property is also an infringement upon their rights in addition to being illegal (Domestic Violence Act 116 of 1998 (RSA), s.7). These classifications encapsulate all the possible types of IPV that women could encounter at the hands of an abusive partner.

Epidemiology of IPV Against Women

Globally, women, aged 15-49, have been exposed to IPV through various means such as "physical violence, sexual violence, emotional violence, possessive behaviour, stalking, harassment, economic/financial abuse, being threatened, property damage, and illegal entry into their residence by an abusive partner" (Domestic Violence Act 116, 1998, s.7, p.2; WHO, 2021). Almost 33.3% of women report a lifetime prevalence of physical or sexual violence from an intimate partner (WHO, 2024b). Reportedly, 38% of all the murders of women are carried out by their intimate partners (WHO, 2021; WHO, 2024b).

According to the WHO, one in three women worldwide will have been exposed to one of the forms of IPV (WHO, 2021). According to a previous WHO study, the lowest rates of lifetime prevalence of physical and/or sexual forms of IPV in the world are reported in the "sub-regions of Europe with 16 % to 23%, Central, East and South East Asia ranging from 18% to 21%, and Australia and New Zealand both with 23%" (WHO, 2021, p.23). Further, the regions with the highest rates of lifetime prevalence of physical and/or sexual forms of IPV are Sub-Saharan Africa at 33% and Southern Asia at 35% (WHO, 2021). More recent rates for IPV, globally appear consistent with these prevalence rates, with "22% to 25%

reported in HICs as compared to rates of 31% to 33% in LMICs" (WHO, 2024b, Scope of the problem section, para.2). However, there are high incidence rates reported even within some HICs. For example, Leemis et al. (2022) reported on findings from a National Center for Injury Prevention and Control Centers for Disease Control and Prevention in Atlanta, Georgia, United States survey, conducted in 2016/2017 on IPV, which revealed that 42% of women had experienced being physically abused by a partner and 32.5% of women had experienced a serious form of physical abuse from a partner during a relationship. Further, Turkstra et al. (2023) found that one out of two women visiting a fracture clinic in Southern Ontario had experienced physical abuse from a partner and that one out of five women had disclosed experiencing IPV the year before the study took place.

In a study the WHO conducted on health and domestic violence covering ten countries, namely Bangladesh, Brazil, Peru, Thailand, Tanzania, Ethiopia, Japan, Namibia, Serbia-Montenegro, and Samoa, nine of which were LMICs, some of the rates recorded for IPV which could be considered problematic, ranged "for physical abuse from 23% to 62% and for sexual abuse 6% to 59%" (Garcia-Moreno et al., 2012, p.2). The WHO has repeatedly shown that the lifetime prevalence of physical and sexual IPV among women aged 15-29 who are married, divorced, or partnered is among the highest in developing countries (WHO, 2021).

Other researchers have also demonstrated this high prevalence of IPV rates in more developing world contexts. For example, in a report by Hindin et al. (2008), the findings of existing demographic and health survey data from ten countries showed that cases of physical and sexual IPV were highest (75%) in Bangladesh. The United Nations Populations Fund's (UNFDA, 2021) 12-month study on ten countries found that the highest IPV prevalence rates were geographically dispersed, with most IPV incidents emerging from two sub-regions. The first sub-region was Sub-Saharan Africa, with three countries from this sub-region with prevalence rates of IPV ranging from 35% to 43.6%. The second sub-region was Oceania, with four countries from this sub-region with prevalence rates of IPV ranging from 41.8% to 47.6% (UNFDA, 2021). In Afghanistan, research findings suggest that just over 50% of the women in the country have been exposed to IPV throughout their lives (Central Statistics Organization et al., 2017). In Rwanda, a demographic and health survey conducted from 2014 to 2015 has illustrated that around "34.8% of women aged 15 to 49 have either experienced physical or sexual abuse by their husband/partner in the past year"(National Institute of Statistics of Rwanda [NISR] et al., 2016, p.292).

Violence against women by an intimate partner remains a serious problem in South Africa, with rates that are among the highest globally ranging from 20% to 50% of lifetime prevalence for women (Abrahams et al., 2014; Boonzaier, 2023; Dekel & Andipatin, 2016: Devries et al., 2013; Dunkle et al., 2004; Groves et al., 2011; Jewkes & Abrahams, 2002; Jewkes et al., 2010; Metheny & Essack, 2020; Mpondo et al., 2019; Roman &Frantz, 2013; Shai & Sikweyiya, 2015). In South Africa, IPV was previously reported to be the second most serious public health issue after HIV/AIDS (Gordon, 2016). In South Africa, just over one in five (21%) women, 18 years and older, who have ever had a partner has been physically abused, 6% have been sexually abused, and 17% have been emotionally abused, with an overall average of 26% of these women experiencing all three form of abuse simultaneously by their partner (National Department of Health et al., 2019). A study by Zungu et al. (2024) for HSRC found that 22.4% of women in South Africa who have ever been in a relationship have experienced being physically abused by a partner. Additionally, the report detailed findings on lifetime IPV, reporting that 7.9% of the women have experienced sexual IPV, 25.1% experienced emotional IPV, 13.1% experienced economic abuse, and 57.6% experienced psychological abuse, especially about being controlled by their partner (Zungu et al., 2024). The impact of IPV on the lives of South African women is thus profound and stretches far and wide, affecting many aspects of their lives, including their health, social, and work lives, as well as having economic impacts (Sere et al., 2021). Furthermore, it has been reported that there is a higher likelihood and higher prevalence of IPV among women in rural areas than those who reside in urban areas (Nabaggala et al., 2021; Sulaiman et al., 2025). In summary, the literature indicates how prominent IPV is globally, but more so in LMICs and South Africa in particular.

The Risk Factors For IPV Among Women

WHO has previously identified and classified the risk factors for IPV into an ecological model with four levels: "individual, relationship, community, and societal levels" (WHO, 2010, p.19).

The first level of the ecological model pertains to the individual, which focuses on factors that heighten the possibilities of a person becoming a victim/survivor of abuse, such as being younger, coming from a lower socioeconomic background, being less educated, separated or divorced, being pregnant, using/abusing substances, race and ethnicity, and exposure to intra-personal violence (Kouyoumdjian et al., 2013; Lipsky et al., 2005; WHO, 2010). For example, McDougal et al. (2019) showed that the more financially stable a woman's livelihood was, the lower the levels of IPV experienced. The study findings suggest

that higher income brackets for women can allow for more independence and opportunities to walk away from abusive relationships and, conversely, that socioeconomically disadvantaged settings may create more vulnerability for women in IPV situations (McDougal et al., 2019). Further, literature has proposed that black American women are more likely to experience IPV and IPV related-TBI, as it has been found that the rates of homicide related to IPV are four times more frequent among black women than white women (Banksm & Ackerman, 2002; Campbell et al., 2018; Cimino et al., 2019; Jenkins, 2002; Oden, 2000). The HSRC study referred to earlier also reported that physical abuse was notably more prominent among black women in comparison to women from other races in South Africa (Zungu et al., 2024).

The second level of the ecological model pertains to relationships, which focuses on factors such as interactions with others, including friends, romantic/intimate relationships, and family (WHO, 2010). This level contains a person's closest inner circle of people they interact with within their social group (WHO, 2010). As a result, these interactions between people could lead to disputes among close individuals or possible relationship issues, such as dating or marital issues, depending on the nature of the relationship. For example, Zungu et al. (2024) reported that sexual and physical violence in South Africa was far more prominent in women who lived with a partner but were not married to the partner. Further, in a systematic review conducted by Capaldi et al. (2012) on risk factors for IPV, the review indicated that the elements in a relationship that could present as risk factors for IPV included jealousy from men. Further, men's jealousy was connected to men being arrested for IPV experienced by women and the injuries women sustained from their partners during IPV (Kerr & Capaldi, 2011). Women exposed to IPV were also shown to have partners whose alcohol use was considered to be a major risk factor for the physical and sexual abuse they experienced (Lipsky et al., 2005).

The third level of the ecological model pertains to the community, which focuses on factors in which social relationships are found, created, and engaged within a person's life (WHO, 2010). For example, working relationships with colleagues, the community in which individuals reside, or social clubs that individuals join. A study by de Souza et al. (2024) demonstrates that violence within the community is a large predictor for the occurrence of IPV within that community. Additionally, a community and the individuals within it are important factors in understanding how violence is challenged within the community. Research shows that there is an association between community networking through intervention and prevention that can influence an individual's experience of violence within the community, such as IPV (Katague et al.,2025). It was also found in the same study that

women who have endured IPV, compared to those who have not endured IPV, have smaller social networking structures, as a result of threatening feelings of being with and around a man, or not feeling valued and supported, thus having a smaller number of men within these structures.

Finally, the last level of the ecological model pertains to society, which focuses on factors within a larger societal scope, such as traditional roles that are expected of a woman, poverty, negative social perceptions of women in media and entertainment, marriage laws that protect the perpetrator, and the shortage of actionable sanctions that protect the rights of women in abusive relationships (Kouyoumjian et al., 2013; Mishra, 2015; Santoniccolo et al., 2023; WHO, 2010). Media plays a large role in how perpetrators of GBV are reported on in– the language used to address perpetrators in the media is passive and perpetuates victim-blaming for the violence that women experience (Warren et al., 2024). Additionally, one of the highest contributors to IPV emerges as a result of social norms that enforce traditional standards of male dominance (Chadambuka & Warria, 2019).

Lived Experiences of Women Who Have Experienced IPV

Women's experience of living through and dealing with the aftermath of IPV starts the moment they are victims/survivors of abuse by their partner (Amarsanaa et al., 2024). In their study, Amarsanaa et al. (2024) found that the women in the research study had experienced physical, emotional/psychological, financial, and social abuse at the hands of a partner. The lived experiences of women who survive IPV often result in physical and mental health problems as a result of being subjected to some of the most violent and non-fatal abusive situations in their lifetime (Amarsanaa et al., 2024; Puente-Martinez et al., 2023). A woman's lived experience of IPV is impacted by many factors, such as alcohol or substance misuse/usage by a partner, jealousy, and socioeconomic factors that result in or influence their experiences of abuse (Gustafsson et al., 2024; Meskele et al., 2021; Puente-Martinez et al., 2023; Seeletse, 2024). A study conducted by Wellington et al. (2023) shared that women expressed their experiences of abuse from an intimate partner to be mentally and physically entrapping for them in these relationships. Women's experiences of IPV and feeling trapped within a violent relationship stemmed from women sharing their stories of their abuse (Wellington et al., 2023; Wessells & Kostelny, 2022). The stories women have shared are of fears towards their partner's abusive ways, self-blaming, feelings of guilt and shame about the abuse and the physical and mental suffering they have experienced that has rendered them unable to leave their homes (Badenes-Sastre et al., 2024; Jaquier & Sullivan, 2014; Wessells & Krostelny, 2022). Ultimately, these women have shared how they feel isolated and trapped

within these relationships. In brief, it can be understood that women's lived experiences of IPV are complex, stemming from the abuse they endure and live through, to the reasons they were forced to endure the abuse they experienced by their partner.

The Intersection Between IPV and TBI

The study of the intersection between IPV and TBI is an area of research that has yet to be explored within a South African context. However, a critical review of earlier international investigations has identified prevalence rates ranging from 30% to 74% for TBI in women who are survivors of IPV who sought help for the abuse and/or injuries (Kwako et al., 2011). Valera et al. (2019) state that women who have been physically abused have a greater likelihood of sustaining one and/or recurrent mild TBIs.

IPV and TBI overlap as trauma to the head, face and neck during such violence can result in brain injuries with associated sequelae, which have been reported by a few studies as alterations to an abused person's cognition and mental health (Cimino et al., 2019; Murray et al., 2016; Raskin et al., 2024). Non-fatal strangulation experienced during physical IPV can cause damage to the brain as a result of hypoxic-ischemic injuries that result from starving the brain of oxygen and nourishment that the brain requires to remain functional (Colantonio & Valera, 2022; Raskin et al., 2024; Valera et al., 2022). Hence, it can be understood from the above that physical IPV, in particular, can increase the risk of sustaining a TBI.

In previous investigations, it was found that nearly three-quarters of the women participants who have experienced IPV have reported strangulation by their partner, and nearly half of the women participants have also reported experiencing blows to the head by their partner during their relationship (Kwako et al., 2011; Goldin et al., 2016). As noted, the types of injuries that women sustain from IPV place them at increased risk of sustaining head and neck injuries that can leave them vulnerable to sustaining TBIs (Sheridan & Nash, 2007; Kwako et al., 2011).

For example, Jackson et al. (2002) previously estimated that 92% of women reported a history of being hit against the head or in the face during the abuse they experienced from their partners. More recent literature shows that 80% of the survivors of IPV have reported a history of injury to the head, with 65% of head injuries being caused by violence globally (Gagnon & De Prince, 2016). Considering all aspects, IPV can result in a TBI, and women who remain in abusive relationships are at an increased risk of having the negative consequences of the TBI exacerbated by the physical abuse they continue to experience (Hunnicutt et al., 2017). Assault that occurs with partners with whom one is in a romantic relationship often results in more serious injuries for women compared to men within the relationship (Smith et al., 2017). The

physical abuse experienced during IPV has resulted in women developing hearing or sight deficits, seizures or repeated headaches (Coker et al., 2000b).

Research also shows that women with injury to their heads as a result of physical abuse may be aware of the symptoms they are experiencing as a result of trauma to the head, but may not be aware of the real consequence that a TBI could pose to their health or the importance of getting medical testing for headaches that are experienced daily as a result of a TBI (Oakley et al., 2021). A study by Manoranjan et al. (2022) found that over a year, 1 in 6 women had a high likelihood of sustaining a TBI as a result of IPV. In addition, the study also found that when compared to sustaining a possible IPV-related TBI over these women's lifetime, the figure had nearly increased to 1 in 3 women (Manoranjan et al., 2022). Another study by Campbell et al. (2018) conducted with black women of African ancestry found that 50% of the participants who were exposed to physical IPV had symptoms related to that sustained in a TBI. Further, Chiou et al. (2023) found that the women who screened positive for a TBI as a result of IPV were more likely to report headaches, sound sensitivity, body numbness, dizziness and instability in balance, memory issues, and feelings of anxiety.

This literature on the intersection between IPV and TBI has shown the importance of conducting research within this area of knowledge. While more studies seem to be emerging over time, there remains a lack of such literature in an LMIC setting like South Africa. These studies generally point to the need for screening for IPV-related TBIs in women who have experienced IPV, given this intersection between the occurrence of IPV and TBI (St Ivany & Schminkey, 2016).

Screening for IPV-related TBI amongst women

A review of the literature suggests that screening for IPV-related brain injuries among victims /survivors is not routinely carried out by professionals who work within the health sector (Esopenko et al., 2024; Nicol et al., 2021). However, screening by staff at women's shelters for abused women could assist in increasing survivors' awareness of the possibilities of IPV-related TBIs (Nicol et al., 2021). Research has also shown that only a small number of women who have reached out to communicate about IPV-related TBI have been officially screened for a TBI (Oakley et al., 2021). Consequently, many women exposed to IPV do not receive the proper healthcare for IPV-related TBI and are at a greater risk of developing second-impact trauma[1] to the brain (Banks, 2007), which would lead to more severe health consequences for these women. Hence, the importance of routine screening for TBI among

[1] Second impact trauma is defined as a head injury, usually a concussion, that occurs quickly after the first injury to the head (McLendon et al., 2016; NeuroHealth Arlington Heights, 2022).

women who have experienced IPV is clear. Furthermore, an advantage of screening for IPV-related TBI is to bring awareness and educate women on the TBI symptoms that may emerge from an experience of IPV (Oakley et al., 2021). A disadvantage for women who have experienced IPV-related TBI is that access to screening in the healthcare sector may not be routinely available and can also be expensive, limiting women's access to screening for IPV-related TBI (Haag et al., 2019).

Rationale

The literature shows that TBI and IPV are both major public health issues in LMICs as a result of a range of socio-economic factors and that these two factors intersect. Although there are some international studies focused on TBI concerning IPV, studies of this nature are generally lacking. More specifically, there is little research that focuses on the prevalence of TBI in women who have experienced IPV in comparison to those who have not experienced IPV globally. Locally, no published research of this nature has been conducted within South Africa. Therefore, the areas of research mentioned above must be investigated to understand how these areas impact women, to facilitate appropriate intervention. The study will contribute to this understanding by conducting research that focuses on the prevalence of TBI in a sample of South African women who have experienced IPV, as well as exploring the lived experiences of these women. This work will contribute to the literature in this understudied field in South Africa and globally.

Research Questions, Aims and Hypothesis

Research Questions

Part 1: How many South African women sustained an IPV-related TBI in the study sample?

Part 2: How have IPV and TBI impacted and changed the lives of adult women?

Aims

The study includes two aims. The first aim of the study was to evaluate the prevalence of TBI in a sample of South African women who have experienced IPV compared to a sample of South African women who have not experienced IPV. The second aim of the study is to provide an understanding of the experiences of IPV and TBI in the lives of a subsample of the participants. These two aims inform parts one and two of the study, respectively.

Hypothesis

For part one of the study, the researcher hypothesized that there would be a higher prevalence of TBI reported in the sample of women who had experienced IPV in comparison to the

sample of women who had not experienced IPV. There was no associated hypothesis for part two, which was exploratory.

Chapter Two: Research Methodology

Research Design and Setting

The study is a mixed-methods design that has used a sequential explanatory design. The sequential explanatory, mixed method design consists of two sections (Creswell et al., 2003). The first section focuses on quantitative data that has been collected and analysed within the first sequence (Ivankova et al., 2006). The second section focuses on the qualitative data that was collected and analysed within the second sequence to assist in explaining and emphasizing quantitative findings (Ivankova et al., 2006). The sequential explanatory design uses qualitative data to provide insight and understanding of the quantitative findings. In the current study, participants' narratives add depth to the statistical figures (Creswell et al., 2003; Fetters et al., 2013). Furthermore, the paradigm used to inform this mixed-methods study was pragmatism, which uses what is the best of both quantitative and qualitative methods to investigate issues that are occurring within the real world (Andrew & Halcomb, 2006; Brierley, 2017).

The quantitative part (part one) of the study investigated the prevalence of TBI in a sample of South African women who have experienced IPV in comparison to a sample of South African women who have not experienced IPV. Data was collected using a combination of self-reporting questionnaires, namely the Brain Injury Screening Questionnaire (BISQ) and the Women Abuse Screening Tool (WAST). The qualitative part (part two) of the study sought to understand the lived experiences of the women victims/survivors of IPV. Part two of the study included a qualitative design, using semi-structured interviews and thematic analysis to answer the research question about the impact and changes that IPV and TBI have on the lives of women.

The data for the current study were collected in Cape Town from the Africa Community Project (ACP) in Belhar and Phillippi Village, where participants were recruited from the programme Breaking Beliefs. The shelters for abused women and/or women who require safety within Cape Town were also used as an alternative point to collect data from participants from low-to-middle socioeconomic status (SES) backgrounds. These shelters were located in the Manenberg and Bellville suburbs of Cape Town.

Positionality

As the researcher of this study, the focus of this research study was important to me as a woman who is aware of the high rates of GBV in South Africa, but, moreover, as an individual who also grew up in a low- to middle-income community where violence was prevalent. This study was also important to me, as I took a deep interest in TBI and wanted to understand how IPV impacted and changed the lives of women, especially if they had sustained a possible TBI. As a result, there is an awareness of how these positions as a woman from a low- to middle-income community, with a deep interest in this type of research topic, could influence the measures and research questions chosen, as well as the interpretation of the qualitative findings in particular. The researcher's positionality was addressed through debriefing with a psychologist due to the sensitivity of the data engaged with in the study, and through my supervisors during this research journey, to ground how, as a researcher, I interpreted and shared the narratives of the participants in the write-up of this minor dissertation.

Participant/Sampling

Judgment (purposive), snowball sampling, and convenience sampling were used to recruit adult women fluent in either English or Afrikaans. Adult women are defined as those who are 18 years and older (Mahery & Proudlock, 2011).

Participant Recruitment

Advertisements in the form of posters were handed out at Phillipi Village Centre and placed up at the entrance and/or notice boards of ACP, St. Vincent Clinic in Belhar and Delft Community Health Centre/Clinic. Word-of-mouth advertising to recruit adult women, as well as using snowball sampling with those women already invited to participate in the study, was employed. Convenience sampling was used to recruit participants in areas that were accessible to the researcher and the postgraduate students who assisted with the data collection process. This study formed part of a larger project looking at TBI and IPV in women. The data was collected by a team of researchers, all doing their research within the field of IPV-related TBI.

An initial power analysis conducted before the recruitment of participants indicated a total sample size of $N = 86$ for a goodness-of-fit test contingency table with a power of .95, an alpha error probability of 0,05, and a medium effect size. The total number of participants for whom data in the current study was collected was N=81. The sample size of the women interviewed during part two of the current study, sampled from those who participated in part one, was N=6. Furthermore, data saturation was reached at a point in the collection process of

the data where no further issues or discernment regarding the data arose in the study, as all possible patterns and themes had been thoroughly explored and depleted in the analysis of the data (Hennink et al., 2017; Rahimi & Khatooni, 2024).

The exclusion criteria for participants for both parts one and two included the following: women who could not speak fluent English or Afrikaans, as well as those individuals who had severe mental disabilities/disorders and brain trauma that hindered the participants from partaking in the study, and for part two, women who had not experienced IPV, especially physical IPV.

Screening Measures

Demographic questionnaire

The questionnaire that was used to capture the general demographic information of the participants included details about the participants, such as their level of education, career, and income, and whether the participants and their families had access to the basic needs related to their daily living expenses. This screening measure was used to determine whether a participant had a low, middle or high asset index (Harling et al., 2008). This data has been used to provide information about the participants' backgrounds.

Measures for The Prevalence of TBI

Brain Injury Screening Questionnaire (BISQ). The study used a TBI screening tool to record the lifetime history of self-reported TBI and the existence of possible present-day symptoms (Dams-O'Connor et al., 2014). The BISQ is based on the HELPS tool (Cantor et al., 2004). The HELPS is used to screen for TBI among survivors who have experienced domestic abuse.

The HELPS tool forms an acronym for the following screening components:

Have you ever Hit your Head or been Hit on the Head?

Were you ever seen in the Emergency room, hospital, or by a doctor because of an injury listed above?

Did you Lose consciousness, or were you dazed, confused, or could not remember what just happened?

Do you experience these Problems in daily life since the injury?

Any Significant Sicknesses? (Pricard et al.,1991, p.1)

The BISQ is divided into three sections: TBI history, symptoms, and other health issues (Dams-O'Connor et al., 2014). In terms of TBI history, the BISQ includes questions about whether individuals have ever experienced a blow to the head in nineteen specific situations where such injuries could have occurred (Dams-O'Connor et al., 2014). Participants

who fail to report a previous TBI in section one of the BISQ would be considered as a negative screen and are not asked to complete sections two and three (Dams-O'Connor et al., 2014). TBIs through military activity were not administered, as it was not relevant to our sample.

Section two of the BISQ includes a list of one hundred cognitive, physical, psychological, and behavioural symptoms that are used to distinguish acute or chronic symptoms which can develop after a TBI (Dams-O'Connor et al., 2014). Participants answer section two on a 4-point Likert scale in which they need to answer the extent to which each symptom has been an issue for them in the last month (Dams-O'Connor et al., 2014). Research done with the BISQ has observed that healthy participant control groups scored an average of three symptoms, whereas those participants who have a medical or physical disability scored an average of 10, and the participants with a mild TBI scored an average of 15 (Dams-O'Connor et al., 2014).

Section three of the BISQ was developed to assist with clarification of the relationship and timeframe between the reported symptoms that occurred before the development of a brain injury (Dams-O'Connor et al., 2014). This section considers the timeframe between the first and most current blow to a participant's head that has resulted in changes to their mental status, along with identifying the existence of a medical history that could have led to the participant's condition or explaining the symptoms a participant reports (Dams-O'Connor et al., 2014).

The BISQ is commonly used for its clinical accuracy in reporting TBI events and/or detecting possible chronic TBI (Dams-O'Connor et al., 2014).

Screening Measures for IPV

Women Abuse Screening Tool (WAST). In the study, this 8-item self-report questionnaire was used to evaluate the physical and emotional abuse of IPV (Basile et al., 2007). The questions of the WAST are all situated around women being abused by their partners (Brown et al.,1996). The WAST has been reported to be a reliable measure, as the coefficient alpha was calculated to be around 0.95. The WAST has good validity that could be used to differentiate between abused and non-abused women (Brown et al.,1996). This screening measure was used in this study to assess for any abuse the participants experienced either within their present or past relationships.

Interview Schedule for Part Two

The semi-structured interview used for part two of the research consisted of five questions, with sub-questions for a few of these. The questions for the semi-structured interviews pertained to women's relationship history and experiences of IPV and whether any of the women experienced an injury to the head and/or felt unwell after the abuse (see Appendix E). Trustworthiness, as stated by Lincoln and Guba (1985), focuses on credibility, transferability, dependability, and confirmability. Firstly, the qualitative part of the current study sought to maintain credibility through debriefing about the interview process with the study's co-supervisor and having the co-supervisor conduct some of the research interviews. Secondly, the current study sought transferability by explaining the research sampling and procedure as fully as possible. Thirdly, with regard to dependability, the study recorded each step and change to the respective aspects of part two through respective working drafts and notes from the start of the research process to the end of the current study. Lastly, confirmability was addressed in the study through the researcher discussing their positionality with academic peers who researched violence, as well as briefly reflexively journaling to keep awareness and acknowledgement of the researcher's feelings and thoughts towards the data analysis process.

Procedure

The study received ethical approval from the University of Cape Town's (UCT) Psychology Research Ethics Committee (REC) in June 2022. Once approval for the study was received, planning was set out for the recruitment of participants. Part of the planning involved advertisements that were put up at the relevant sites, and the respective organisations were emailed with attachments of the final approved study proposal, the advertisements (see Appendices G and H), and the ethical approval letter (see Appendix I). The primary researcher and co-researchers then started the recruitment process for adult women, both those who had and had not experienced IPV, from communities and organisations in Belhar, Phillipi, Delft, Manenberg, and Bellville in Cape Town, South Africa. The recruitment of participants was also done by approaching facilities such as community centres and shelters of safety for women. Two shelters in Cape Town assisted with advertising the study.

The demographic questionnaire, consent form, and advertisements were translated into Afrikaans by the Stellenbosch language laboratory using forward and backward translations and an authentication process. Women who were interested in the study made contact with the primary researcher or assistant researchers involved to arrange dates and times for sessions at the relevant sites to conduct the research.

In part one of this study, the relevant measures were administered to each participant as part of the larger study, which averaged around two and a half hours spent with each participant. The primary and assistant researchers administered the questionnaires to each participant in private office spaces provided by the ACP, Philippi Village Centre, Delft Civic/Community Centre and the shelters for women's safety. Part one of the study was conducted during the last two quarters of 2022. Participants who took part in the first part of the study were asked to indicate if they were interested in part two of the study, which involved an interview focused on their experiences of IPV and a possible TBI.

Participants who expressed interest in part two of the study were contacted, and an interview was scheduled. Part two commenced late in 2022 and continued into the beginning of 2023, with three participants being interviewed from the main sample in late 2022, with three more participants being interviewed during the first quarter of 2023.

During the data collection process for part one (which took place while COVID-19 restrictions were still in place), participants were offered a mask and hand sanitiser by the researcher upon entering the office space. Once participants settled into the space, a conversation would commence before each session to help them feel at ease and more comfortable with the research process. Participants and the primary researcher, and the co-researchers went through the consent form together during each session that was conducted by either the primary researcher or co-supervisor, allowing the participants the opportunity to ask questions about the consent form for part one and the study being conducted. If the participant agreed to sign the consent form, the study would commence. The participants were informed that they could take breaks between the questionnaires should they experience fatigue.

For part two of the research, the participants who agreed to participate were provided with the consent form electronically. Once the primary researcher received the consent forms from the participants, session times and dates were scheduled for the interview. One interview was conducted face-to-face, while the other five were conducted telephonically due to transport/geographical circumstances where the researcher and participants could not meet face-to-face to conduct the interview. The participants and the primary researcher went through the consent form together for the face-to-face interview, whereas participants in the telephonic interview were asked about their understanding of the consent form read to them by the primary researcher and co-supervisor. Once the participants agreed and signed the consent form, part two of the study commenced. All six participants were interviewed either face-to-face or telephonically by the primary researcher and telephonically by the study's co-

supervisor in a private office space. In part two of the study, interviews conducted ranged from 25 to 50 minutes with each participant.

Participants were offered snacks and refreshments during each face-to-face session of the study. Participants received a grocery voucher of R100 for each part of the study as a token of appreciation for their participation.

Data Analysis

Part One

SPSS Statistics version 28.0.1.0 was used to analyse the data for part one of the study. This part made use of some basic descriptive statistics to analyse the data in terms of the participant demographics. A Chi-square test for independence was used to investigate the relationship in categorical variables (University of Roehampton, 2025) such as reports of any TBI in the sample (those who had experienced IPV and those who had not) and specifically within the subsample of those who reported experiencing IPV (in terms of a possible IPV-related TBI), with a significance level for the study being set at $p>0.05$. The data was also tabulated and presented graphically, and the assumptions were met for the data pertaining to both Figure 3 and Figure 4, as further discussed in Chapter 3: Results and Discussion section.

Part Two

Qualitative interviews were analysed using a thematic analysis. A thematic analysis is a qualitative analysis tool that can be used to recognise, analyse and report on patterns in the data set to form themes relevant to what the data presents (Maguire & Delahunt, 2017; Braun & Clarke, 2006). The thematic analysis seeks to find patterns of meaning among the data that is collected (Braun & Clarke, 2006). The thematic analysis process, as indicated by Braun and Clarke (2006), includes six phases. The first phase requires a familiarity with the data; the second phase involves a generation of initial codes from the interview transcripts; the third phase requires searching and the development of themes for the research; the fourth phase needs a review of possible themes, which results in the reviewing of the developed themes in relation the data that was coded but also the dataset as a whole; the fifth phase needs clarity on the naming of themes, which is where the final development and naming of the themes for part two occurred; the final and sixth phase of the thematic analysis requires the production of a report which was the generation of the qualitative part two in dissertation.

The thematic analysis in the research sought to bring an understanding of how the participants' lives had been impacted and changed by their experience of IPV and the possible TBI experiences they have gone through within their relationships.

Ethical Considerations

Ethical Approval

Ethical approval was sought for the current study from the UCT Psychology Department's REC (reference number PSY2022-037). Once approved, the planning and the collecting of data commenced at the end of 2022 and into the beginning of 2023 and ended in the first quarter of 2023.

Informed Consent

Consent was sought from participants using the consent forms for the study (Appendix A and B). The consent forms were used during parts one and two of the study to brief participants about their participation and what it would entail, including the fact that it was voluntary and that they had the right to leave the study at any time without penalty. The participants were informed that they were not obligated to answer any question they did not feel comfortable answering during part one and/or part two.

Confidentiality

Once consent was provided by participants, it was communicated to the participants that their autonomy, integrity, confidentiality and overall well-being were always of utmost importance. The participants had been reassured at the beginning of each session that any information obtained from the study was highly confidential, was being kept safe, and would only be used for the study. During the briefing at the beginning of the study, participants were also informed that only the respective researchers and supervisors would have access to the results from the screening measures, interviews and personal information. The participants were informed that their names would not be revealed within the study and that each participant would be assigned a code (i.e., a number) that would be used in the data analysis and discussion.

Once the data was collected and scored, it was given to a supervisor, where it is kept it securely at UCT, and to which only the respective researchers and supervisors have access. The data that has been captured and stored digitally is being kept in a password-protected zip file that is to be stored on a password-protected hard drive that only the relevant people within the immediate research team have access to. The hard drive will remain in the protective care of one of my supervisors during and after this research process has been completed.

Referrals

In the interest of the participants' health, it was important to minimise the risks to the mental and physical health of the participants. Therefore, the participants were informed about the referral sheet (see Appendix F) at the beginning of the research process, when their consent was sought, and they received it after the session to facilitate any necessary referrals needed by them.

Benefits and risks

As the researcher, it was important that throughout the study, cognitive and physical fatigue were prevented from the study's data collection process. Participants were asked regularly how they felt during the sessions and if they required a break during both parts one and two of the study.

COVID-19 preventative measures

When the tests and interviews were administered in late 2022, the participants were still being screened for COVID-19, and their hands, the researchers' hands, and relevant surfaces were sanitised. The participants were also told beforehand and reminded when entering the research sites about the COVID-19 protocol set out by the South African government that would still be followed during the data collection process of the study.

Chapter Three: Results and Discussion

Quantitative Results

Descriptive statistics and demographics

The study's final sample size was *N*=81 women. The mean age of the women in the sample was approximately 31 years, with a standard deviation of 9.45 and a range of 19 to 58 years. Additional demographic information regarding the participants is presented in Table 1.

Table 1 shows the participants' educational, vocational, and socio-economic data. The results show that > 40% of the participants had not completed secondary schooling (i.e., grade 12 [matric]). Furthermore, nearly 46% of participants reported an annual household income between R25 000 and R100 000.

Most of the participants (74%) who took part in the research indicated that they were unemployed at the time. The participants largely reported English as a second or third language, but they were able to converse in English during the sessions. Most (70.4%) of the current and past jobs participants reported having held were within categories six (semi-skilled), seven (unskilled), and nine (student, disabled, no occupation). Table 1 also illustrates that most participants (61.7%) reported a medium asset index, indicating having access to at least six to twelve assets (e.g., a television, a washing machine, running water, a flushing toilet, and the ability to shop at a supermarket) in their homes.

Table 1

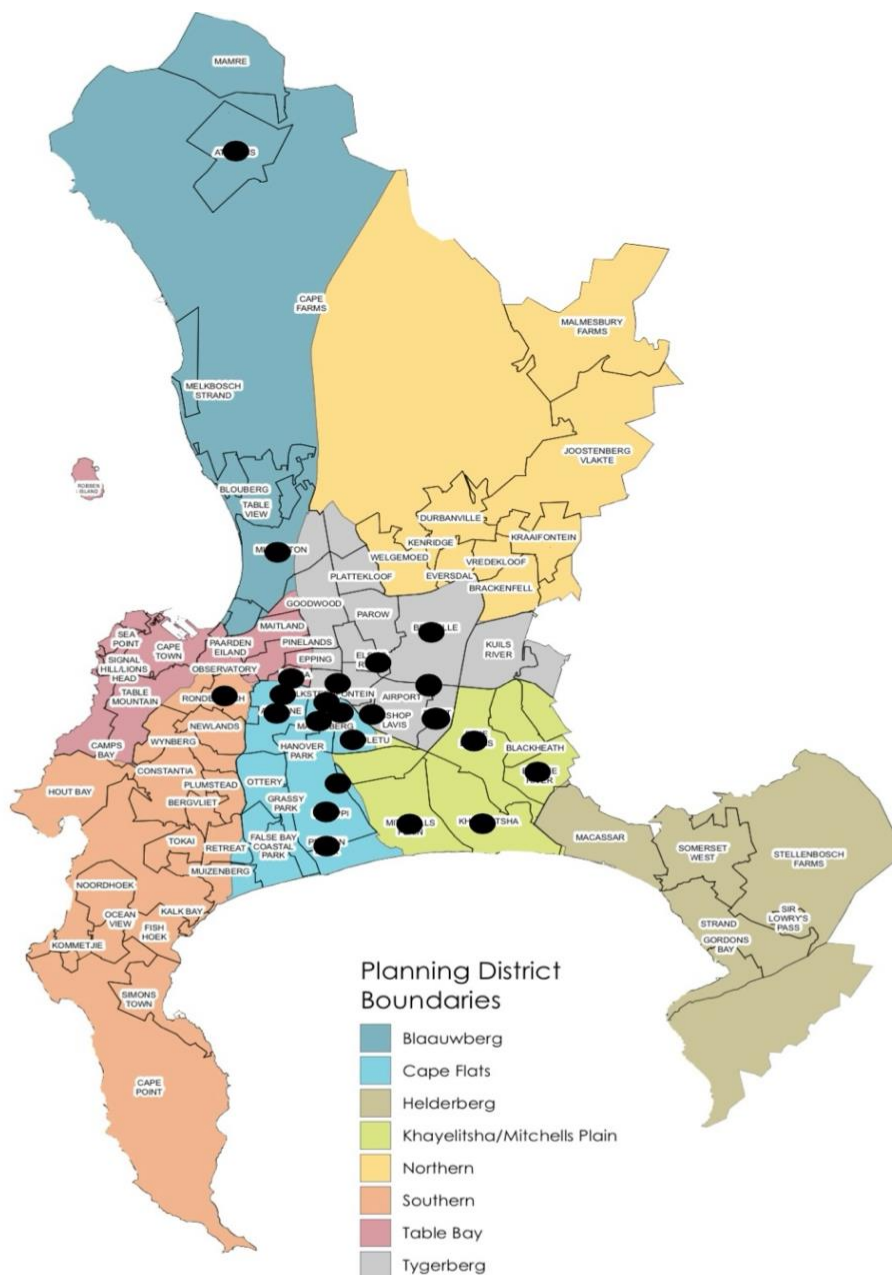
Socio-economic questionnaire findings of the participants (N=81)

Variable	Frequency	Percentage
Level of education		
1 = No formal education	0	0
2 = Grades 1-6	2	2.5
3 = Grade 7	5	6.2
4 = Grades 8-11	28	34.6
5 = Grade 12	31	38.3
6 = Tertiary education	15	18.5
Yearly income		
1 = R0	6	7.4
2 = R1-5001	8	9.9
3 = R5001-25,000	23	28.4
4 = R25,000-100,000	37	45.7
5 = R100,001+	5	6.2
6 = Did not know	2	2.5
Participant currently employed		
No	60	74.1
Yes	21	25.9
Home Language		
Afrikaans	14	17.3
English	11	13.6
Shona	1	1.2
Swahili	1	1.2
isiXhosa	54	66.7
Participant's current or past job		
1 = Higher executives, major professionals, owners of large businesses	0	0
2 = Business managers of medium sized businesses, lesser professions	3	3.7
3 = Administrative personnel, manager, minor professional, owners/proprietors of small businesses	3	3.7
4 = Clerical and sales, technician, small businesses	12	14.8
5 = Skilled manual - usually having had training	6	7.4
6 = Semi-skilled	16	19.8
7 = Unskilled	21	25.9
8 = Homemaker	0	0
9 = Student/ disabled/ no occupation	20	24.7
Participants' asset index		
0-5 assets (low)	19	23.5
6-12 assets (medium)	50	61.7
13-17 assets (high)	12	14.8

Figure 1 illustrates the residential areas of the study participants. The results shown in this figure were that most of the participants (48.1%) resided in Philippi, which is part of the Cape Flats district within Cape Town.

Figure 1

Areas of residence for the participants (N=81)



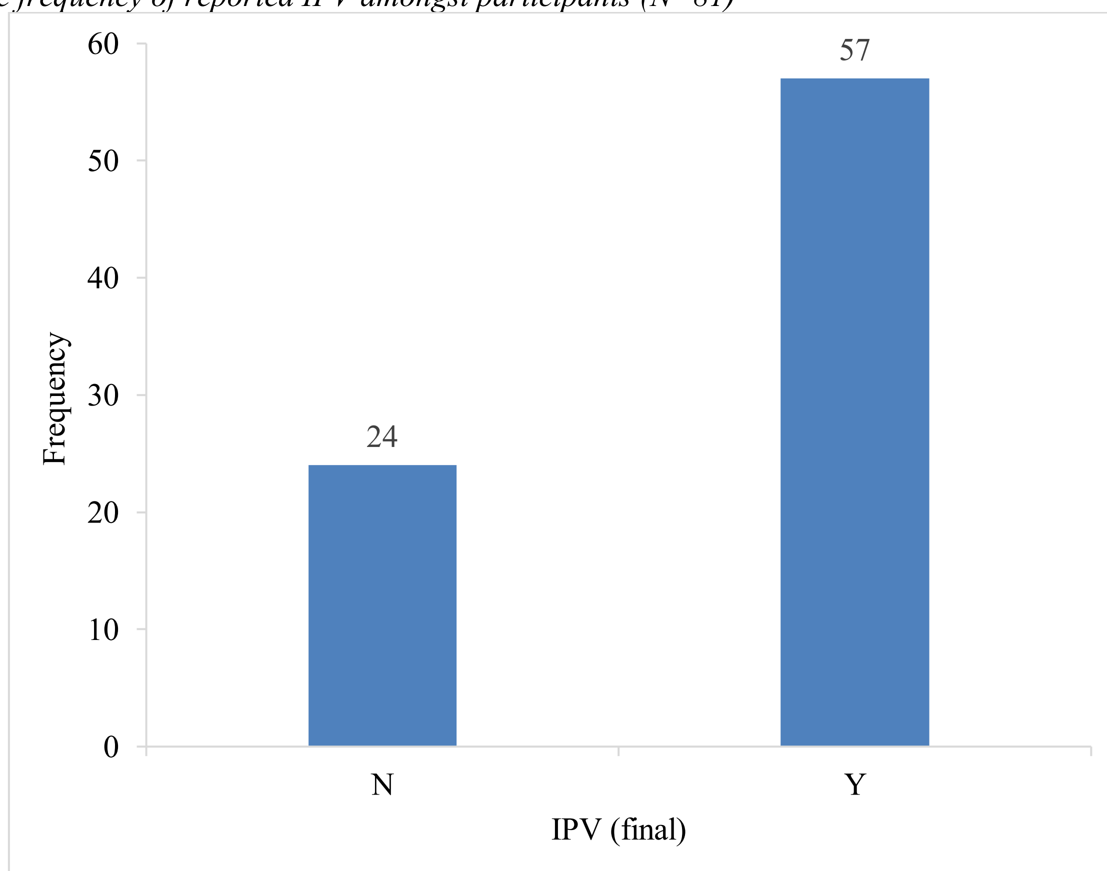
Note: Participants report a total of 23 areas of residence. From District Boundaries, by Urban Planning & Design Department, 2019, City of Cape Town (in the public domain). (https://resource.capetown.gov.za/documentcentre/Documents/Maps%20and%20statistics/District%20and%20Suburb%20Boundaries%20Map.pdf).

IPV findings

Figure 2 illustrates that 70.4% (57/81) of participants reported experiencing IPV. As Table 2 shows, almost 67% of participants reported that they were physically abused, 76.5% of participants reported that they were emotionally abused, and nearly 30% of participants indicated that they were sexually abused. These responses in Table 2 include occurrences described as 'sometimes' or 'often.' A cross-tabulation of responses across the three categories suggests that a significant proportion of participants reported experiencing multiple forms of abuse (physical, and/or emotional, and/or sexual) by their partner, with just over 28% of participants reporting experiences of all three forms of IPV and almost 31% reporting experiencing both physical and emotional abuse.

Figure 2

The frequency of reported IPV amongst participants (N=81)



Note. IPV = Intimate Partner Violence; N= No; Y= Yes.

Table 2

IPV findings of the WAST: Physical, Emotional, and Sexual results (N=81)

IPV exposure	Frequency		Combined Percentage
	Sometimes	Often	
Physical[a]	34	20	66.6%
Emotional[b]	31	31	76.5%
Sexual[c]	18	6	29.6%
	Overlap		
P and E	25		(30.9%)
P and S	0		
E and S	1		
P and E and S	23		(28.4%)

Note. WAST= Women Abuse Screening Tool; The total [a]*n*= 54/81 have experienced being physically abused either sometimes or often; The total [b]*n*= 62/81 have experienced being emotionally abused either sometimes or often; The total [c]*n*= 24/81 have experienced being sexually abused either sometimes or often; P and E= Physical and Emotional; P and S= Physical and Sexual; E and S= Emotional and Sexual; P and E and S= Physical, Emotional, and Sexual.

TBI findings

Regarding TBI (see Figure 3), 86.4% (70/81) of the participants, regardless of whether they had or had not experienced IPV, reported sustaining at least one TBI in their lifetime.

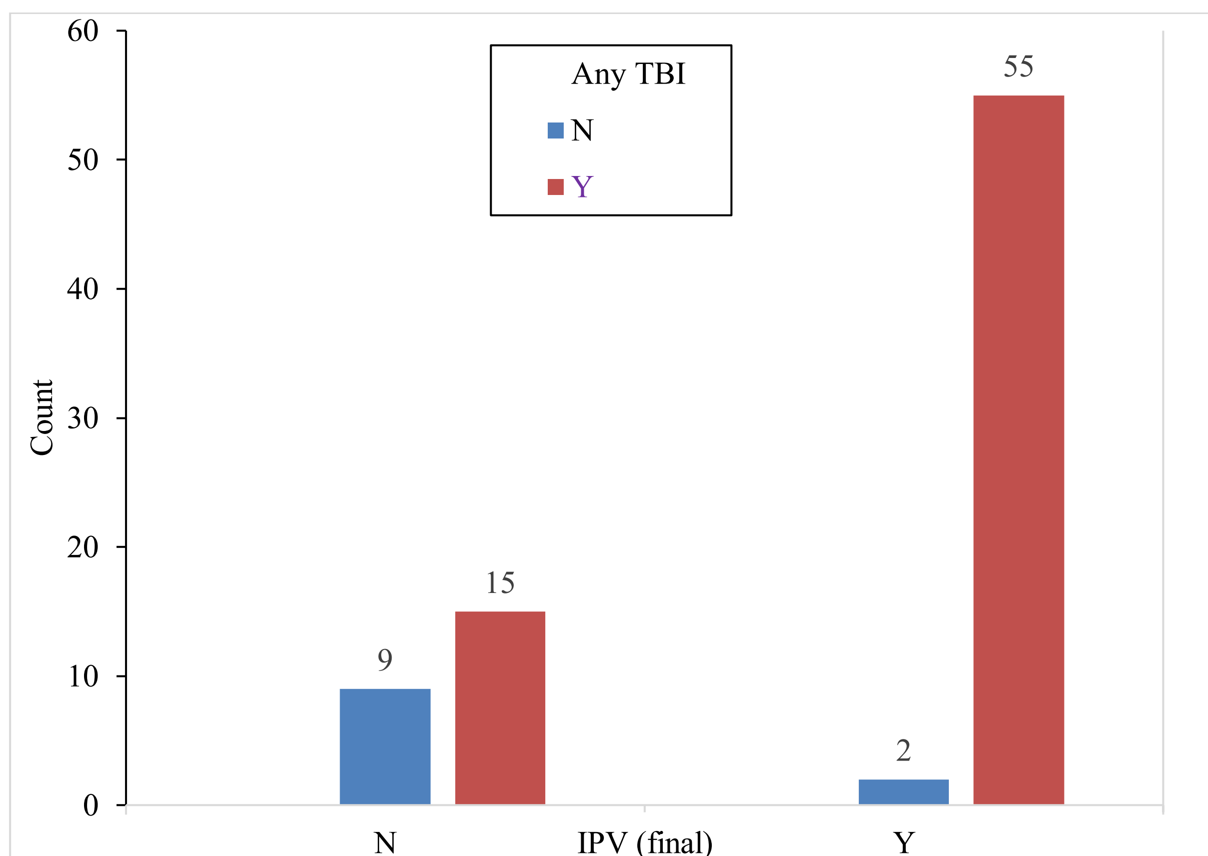
IPV and any TBI findings

In Figure 3, the final numbers of women who have and have not experienced IPV, and who have or have not sustained any TBI (not specifically reported in the context of IPV) are presented. As illustrated in Figure 3, 9/81 (11.1%) of participants reported not having experienced IPV nor sustained any TBI, and 15/81 (18.5%) of participants reported not having experienced IPV but reported having suffered any TBI. These participants reported sustaining these TBIs because of injury to the head from other incidents that occurred outside of the sphere of IPV, such as vehicle accidents and sport-related events that were reported during the administration of the BISQ. Figure 3 also illustrates that 2/81 (2.5%) participants reported having experienced IPV but not having sustained any TBI, compared to 55/81 (67.9%) participants who reported having experienced IPV and sustaining any TBI.

The Chi-square results indicated that there was a significant relationship between exposure to IPV and sustaining any TBI, $\chi^2(1, N= 81) = 16.63$, $p <.001$. The effect size, $\varphi = .453$, indicates a medium/moderate association between IPV and sustaining any TBI.

Figure 3

The women who have and have not experienced IPV and any form of TBI(N=81)



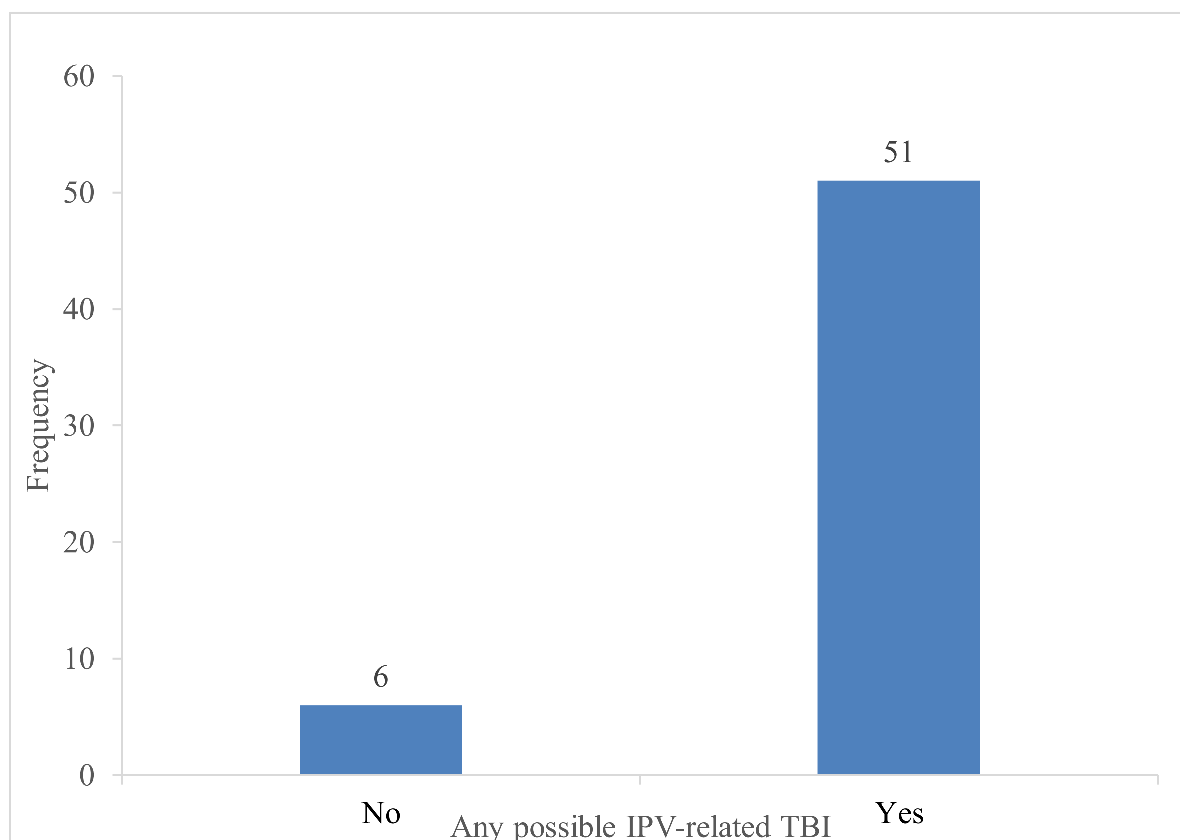
Note. IPV= Intimate Partner Violence; Any TBI = Any Traumatic Brain Injury (not necessarily related to IPV)

IPV-related TBI findings

Figure 4 illustrates the number of women who reported having experienced a possible TBI, specifically related to the physical abuse they experienced in the context of IPV. Results show that 51/57 (89.5 %) of participants who reported experiencing IPV also reported possibly sustaining an IPV-related TBI. This result also translates into 51/55 (92.7%) participants who reported having experienced IPV and sustaining any form of TBI, with at least one of these TBIs sustained in their lifetime, possibly being IPV-related. The Chi-square results indicated that there was a significant relationship between exposure to IPV and sustaining a possible TBI in the context of IPV, χ^2 (1, N= 81) = 57.98, p <.001. The effect size, φ = .846, indicates a strong association between IPV and IPV-related TBI.

Figure 4

The results of IPV-related TBI (N=57)



Note. IPV= Intimate Partner Violence; TBI= Traumatic Brain Injury.

Discussion

Part One: Quantitative Results

TBI and IPV are highly prevalent and concerning issues faced globally and within South Africa (Brits, 2022; Dewan et al., 2019; Selin et al., 2019). An emerging field of literature examines the prevalence and/or correlation between IPV and TBI, especially among women. However, this issue has not been investigated in a South African context despite the contextual vulnerability of both TBI and IPV. Therefore, this study aimed to investigate the prevalence of IPV and possible IPV-related TBI among women within a South African context. As noted, the current study contains a quantitative and a qualitative part/component. Given that the results of qualitative studies are often best presented alongside a discussion, I present the discussion of the quantitative results here. I will also draw on these results in the interpretation/discussion of the qualitative results.

The first aim of this study, which pertains to the quantitative component, was to evaluate the prevalence of TBI in a sample of South African women who had experienced IPV compared to a sample of South African women who had not experienced IPV.

The research question for part one associated with this aim asked how many women sustained a possible IPV-related TBI. The hypothesis associated with this aim was that there would be a higher prevalence of TBI reported in the sample of women who had experienced IPV in comparison to the sample of women who had not experienced IPV. I discuss the findings of part one below.

Participant Demographics. The participant demographics showed that they resided in areas situated in six out of the eight districts within Cape Town (see Figure 1). A large proportion of the participants came from a suburb within the Cape Flats, Philippi, which is considered one of the low to middle-income areas (that includes both urban and semi-rural living areas) in Cape Town. A previous report provided by the City of Cape Town (2013), which included statistics from the 2011 census, reported that the income per month was ± R3200 for 78% of the households in Philippi. Furthermore, almost three-quarters of the participants in this study were unemployed at the time of their participation. These results (considering the rates of IPV discussed later) align with several studies suggesting a correlation between experiencing IPV and residing in a socio-economically disadvantaged community (Benson et al., 2003; Cunradi et al., 2000; Miles-Doan, 1998; Pearlman, 2003).

The literature indicates that this association between social disadvantage and experiencing IPV is due, at least in part, to social and financial factors (Ahmadabadi et al., 2020; Jewkes et al., 2002). The financial factors refer to residing within communities in which women and their partners are not able to maintain their basic needs and are at higher risk of engaging in disagreements within their relationships because of economic challenges (Ahmadabadi et al., 2020; Jewkes et al., 2002; Reyal et al., 2024). Furthermore, the literature shows that men often struggle to adequately handle not being the financial provider, based on the patriarchal norms of society that have been set out for them to be the provider within the household. This expectation then may put pressure on men to live up to this standard, which may indirectly result in them exerting power by engaging in IPV (Courtenay, 2000; Jewkes, 2002; Boonzaier, 2005).

Regarding social factors, a recent longitudinal study conducted by Gracia et al. (2021) from 2011 to 2018 found that social factors linked to a higher probability of increased experiences of IPV among women in disadvantaged neighbourhoods included lower levels of education and high community crime rates. Although I did not report on exposure to

community violence in the study, most areas of residence reported by participants generally have high levels of exposure to community violence (Gastrow, 2021; Phaliso, 2023). Furthermore, as noted in Table 1, < 20% of participants reported having tertiary education, with > 40% having not completed secondary schooling.

The participants in the current study was high among teenage women and older adults. Literature has indicated that the reproductive age for women spans from 15 to 49 years (Schneider et al., 2006; Garcia-Moreno et al., 2013; Tessema et al., 2023). A report by Garcia-Moreno et al. (2013) for WHO indicated that the prevalence of IPV was high among women of reproductive age (Getinet et al., 2022; WHO, 2024).

Prevalence of Any TBI. The results concerning participants' reports of any TBI show a high prevalence of such injury (86.4%) in the sample. These reports were based on TBI at any point in their lifetime and about any mechanism that pertained to sustaining a TBI. Research shows that the prevalence of TBI is around 55 to 69 million people globally, with the prevalence being especially problematic in low and middle-income countries (LMICs; De Silva et al., 2009; Dewan et al., 2019; G/Michael et al., 2023; Hyder et al., 2007; James et al., 2019; Wong et al., 2015). Although South Africa is classified as a middle-income country within Sub-Saharan Africa (SSA; Jobarteh, 2023), there are major disparities in the SES of its people, from exceptionally poor to extremely wealthy (Ochi, 2023).

The number of reported TBI cases in SSA is approximately 801 per 100,000 people (Dewan et al., 2019). Additionally, South Africa's rates were previously reported in 2016 as 680 cases per 100,000 people (James et al., 2019). The prevalence rate of TBI has long been a concerning and pressing issue in South Africa (Gxolo, 2021). This concern arises from the mechanisms of injury for TBI in South Africa and LMICs more generally. Motor vehicle accidents that could involve numerous road users, such as pedestrians and motorbike drivers, present one such mechanism (Maas et al., 2022). Muili et al. (2024) noted that in addition to road traffic accidents, falls and the perpetration of violence or exposure to violence (from interpersonal violence) that leads to injury to the head, can influence the probability of an individual sustaining a TBI (Naidoo, 2013).

Additionally, literature has also indicated that the risk of sustaining a TBI due to escalated sequelae such as violence or a motor vehicle accident may be exacerbated by socio-economic and infrastructural issues in LMICs, such as lack of the required medical and health facilities to deal with a TBI (Lanesman & Schrieff, 2021; Miller et al., 2023; Muili et al., 2024; Ross & Mirowsky, 2001; Turrell et al., 2007; van der Horn et al., 2020). Communities in LMICs lack access to necessary screening and treatment for TBIs due to a shortage of

healthcare professionals trained to deal with TBI and the limited availability of rehabilitation for associated sequelae of TBI (Lanesman & Schrieff, 2021; Miller et al., 2023; Muili et al., 2024;Ross & Mirowsky, 2001; Turrell et al., 2007; van der Horn et al., 2020). This is especially the case with less severe cases of TBI, which may be missed or disregarded given no obvious symptoms at the time of injury (Miller et al., 2023; Ross & Mirowsky, 2001; Turrell et al., 2007; van der Horn et al., 2020).

Prevalence of IPV. The results from this study showed that there was a high prevalence of IPV reported among the participants, with over 70% of the sample of women having experienced IPV within their lifetime. Additionally, the descriptive results for this section also indicate that most participants (76.5%) reported experiencing emotional IPV, whilst close to 30% of the women reported having experienced sexual IPV from the sample, followed by reports of physical abuse being experienced by 66.6% of the sample. Additionally, the results also indicated that most of the participants had experienced a combination of physical and emotional IPV (30.9%), with just over 1 in 4 women (28.4%) experiencing a combination of all three physical, emotional, and sexual abuse within their relationship or past relationship.

The prevalence rates reported in this current study exceed those reported in the most recent national prevalence study on South Africa by Zungu et al. (2024). Research shows that some of the reasons found for the high rates of GBV more generally, are situated, at least in part, in societal norms and SES (Cornelius et al., 2015; The Centre for the Study of Violence and Reconciliation [CSVR], 2016), some of which have already been discussed in the sample demographics section (e.g., SES factors that related to financial security problems (Cornelius et al., 2015; The Centre for the Study of Violence and Reconciliation [CSVR], 2016), and which I expand on here. Victims/survivors of GBV report experiences linked to societal norms that perpetuate gender stereotypes. For example, society's idea of the "perfect woman" is expected to conform to the gender norms of not working but staying at home and raising the children (Cornelius et al., 2015). This gender hierarchical system privileges men as dominant and as the leaders of communities, families, and homes, resulting in the creation of the power imbalances that currently exist between men and women (Cornelius et al., 2015; CSVR, 2016; Malatjie & Mamokhere, 2024). As a result, this type of system could introduce violence into the lives of women when men expect conformity with these gender norms – as a way of 'keeping women in their place'.

Furthermore, societal and patriarchal norms may project the idea that men are generally considered to be the financial providers within their homes, and with that, women

are expected to remain dependent on a man to survive (Cornelius et al., 2015; CSVR, 2016). This role of being the provider is considered a representation of a man's power and control within a relationship as prescribed by society over the centuries (Clare et al., 2021; CSVR, 2016). Consequently, losing this role could be viewed by a man as an attack on his male identity. Hence, to regain this sense of loss of what it means to be a man, men may engage in dominant and often violent behaviour toward their partners (Clare et al., 2021). A study by Boonzaier (2005) indicated how men sought to maintain their attachment to the patriarchal notions of "what it means to be a man" in South Africa, including keeping control over the financial income in the household and exerting control with an iron fist within their relationships in the form of violence towards their partners. Additionally, another factor that pertains to the increased rates of IPV is the tolerance and generally high rates at which violence occurs, which, to a degree, has become a normalised part of South African society (Cowling, 2024; Willman et al., 2019). In South Africa, violence, over many decades, has come to be seen as a normalised means of conflict resolution (Collins & Plüg, 2020; Khosa & Abdulkareem, 2024).

Finally, another factor found to be associated with high rates of GBV is alcohol abuse (CSVR, 2016; Kyriacou et al., 1998; Ramsoomar-Hariparsaad & Maker-Diedericks, 2021). In a review, Ramsoomar-Hariparsaad and Maker-Diedericks (2021) show that men who drank and/or abused alcohol were more susceptible to perpetrating GBV, specifically in the form of IPV. These outcomes of alcohol abuse/misuse have previously been shown in LMICs globally (Gil-Gonzalez et al., 2006). A local review by the South African Medical Research Council [SAMRC] and the South African Alcohol Policy Alliance [SAAPA] has also indicated that there is a relationship that exists between alcohol abuse and GBV within South Africa (Ramsoomar-Hariparsaad & Maker-Diedericks, 2021). Although alcohol use by partners who inflict violence was not reported on in the current study, social issues around alcohol use and abuse in South Africa are clear. A previous WHO (2014) report has shown that the annual alcohol intake for South African individuals,15 years and older, was higher than the average reported for Africa and globally (South Africa Medical Research Council [SAMRC], 2020). In summary, it can be understood that there are several contextual vulnerabilities in South Africa that can contribute to the high rates of IPV reported in the current study.

The Intersection Between IPV and TBI. The results for the rates of TBI and IPV reported by the study participants are concerning. However, in line with the first aim of the current study, this concern becomes even more significant when reports of sustaining a TBI are reported to relate to many participants' experiences of IPV.

While there was a high prevalence of any TBI reported in the sample, results also showed that there was a higher prevalence of reported TBI in the sample of women who reported IPV. Close to 90% of participants who reported experiencing IPV in the sample also reported sustaining a possible TBI in the context of IPV in their relationship, compared to less than 1 in 5 women (18.5%) having sustained any TBI but having not experienced IPV. Results also show a high prevalence of physical abuse reported by the participants in the sample (54/57 women who reported experiencing IPV; ±97%), which is likely associated with sustaining an IPV-related TBI due to injuries to the head and strangulation, which can result in trauma to the brain (Cimino et al., 2019; Corrigan et al., 2003; St Ivany & Schminkey, 2016). These reported findings in the current study are higher than those reported in several previous studies, where reported prevalence rates ranged from 27.1% to 74% (de Souza et al., 2024; Marcantonis, 2003; Molinares et al., 2023; Valera & Berenbaum, 2003).

A study by Daugherty et al. (2020) examined the differences in brain volumetrics and structure among victims/survivors of IPV as compared to the control group of participants who had not experienced IPV. The findings by Daugherty et al. (2020) demonstrated a relationship between IPV and TBI and the influence IPV-related TBI had on changes to brain volume and structure in terms of area and thickness based on the region of the brain that had been impacted after the physical abuse.

It has been noted that the results regarding the intersection of IPV and TBI are concerning, as both TBI and IPV represent significant public health issues in South Africa (Gordon, 2016; National Department of Health et al., 2019; Netcare, 2016). Furthermore, this intersection suggests high rates of reported IPV-related TBI, a matter of concern emerging globally, but which requires greater attention locally, as suggested by these results.

This chapter now continues with part two of the research results, which explores the second aim, of exploring the lived experiences of the participants who reported experiencing IPV, including injuries to the head, face, and neck that could contribute to the high rates of reported TBIs in part one of the results and discussion.

Part Two: Qualitative Results and Interpretation

Four themes emerged from the thematic analysis, namely: (1) Living With and Experiencing Physical Abuse, (2) The Impact of Physical Abuse on the head and body, (3) Impact of IPV on Change to and In Self, and (4) IPVs Impact on Future Intimate Relationships. These themes respond to the research question: How have IPV and TBI impacted and changed the lives of adult women (in the study sample)? Each of these themes is discussed below.

Living With and Experiencing Physical Abuse. Women who experience IPV within their lifetimes are at a high risk of experiencing different forms of violence directed towards their bodies (Gupta & Renteria, 2023). The quantitative results also spoke to the frequency at which women who reported experiencing IPV reported physical abuse. This theme seeks to offer an understanding of what women endure in their lived experiences of physical abuse. These experiences also include the frequency of the abuse within their relationships. Consistent with some of the quantitative results, participants also shared information about the frequency of the physical abuse they endured. Some of the stories they shared were about when the abuse would occur, such as during arguments or when the participant had asked the whereabouts of her partner. Other participants shared stories about the frequency of the abuse in their relationships, as below:

"…then when he's drunk, he beat, he stabbed me… he did that once, he stabbed me… with a screwdriver". But sometimes he beat me, or he then goes, and he didn't come back, and I ask [2](for something), and he just beat me." (Participant One)

"… when I fell down he still come to me and hit me, stand on top of me and hit me like we are on the fight… I stay there (and) bleed…it was on the 31st of October on my birthday when he hit me until he throw me in the wall … he will hit me until I bleed..." (Participant Two)

"…he is drinking or whenever, and then alcohol comes first." (Participant Six).

[2] Words in brackets have been included as explanatory notes for ease of reading- otherwise, the quotes have been reproduced verbatim.

The extent of the physical abuse is captured in the descriptions by Participants One and Two above. It moves us beyond the numbers captured in the frequency to the nature, brutality, temporality, and severity of violence participants experience.

Further, in Participant One's and Six's quotations above, we see descriptions of how physical violence occurred because their partners consumed alcohol. These descriptions are in alignment with the proposed contextual explanations offered for the quantitative rates of IPV described in part one. In Shubina et al's. (2023) study on men in romantic relationships with a woman, men reported their alcohol consumption over one year, and over a quarter of men who drank alcohol over the previous year reported being abusive towards their partner. As also noted previously in the quantitative part, the heavy use of alcohol is a major public health problem in South Africa (SAMRC, 2020). Ramsoomar et al. showed that the more men engaged in alcohol consumption, the higher their chance of perpetrating IPV (Ramsoomar et al., 2021). Consequently, these findings show that there is some connection between alcohol use and misuse, and IPV perpetration – in how women frame their experiences. The perpetration of alcohol-induced IPV is vividly presented in the experience shared by Participant One of being stabbed and beaten at the hands of a drunk partner.

Additionally, the theme addresses how participants described the consequences of the physical abuse from their partners as causing injury and hurt to their bodies below:

"…like buy pain blocks, since I feeling like my body is painful and stuff…" (Participant Three)

"… I get uhm body pains such as stiffness in the shoulders." (Participant Four)

The lived experiences shared by Participants Three and Four illustrate the negative outcomes that the physical abuse had on their bodies and how the beatings these participants took resulted in them physically having symptoms of pain after the assault from their partners. Participant Three indicated that she had to take pain medication to help deal with the pain of her sore body that she developed from the abuse. The word 'pain' emerged within both quotes. Various studies report on the association between IPV and generalised and chronic pain (Campbell et al., 2002; Coker et al., 2000b; Weinbaum et al., 2001). These shared experiences have demonstrated a link between physical abuse and the effect on the body of women. The negative impact of IPV on health includes many conditions that can affect

women's bodies internally and externally, impacting their lives (Black, 2011; Campbell, 2002; Dillon et al., 2013; Stubbs & Szoeke, 2022).

The interview data also showed that physical abuse was experienced by some of the women at the hands of jealous partners. It seemed women could be abused because of the irrational feelings of a partner, which stemmed from the jealousy shown towards these women. This association between the perpetration of physical abuse and jealousy of the intimate partner has also been reported in recent literature (Stritof & Snyder, 2024). Experiences of physical violence as a result of sexual jealousy were relevant for a few participants in this study, as illustrated below:

"After three years, I lost my job, and uhm, I had to move into his house 'cause I couldn't afford myself, like rent and then other stuff…I'll ask him maybe for money so that I go look for a job so that I can meet him halfway … then I'll try by means to get money. Every time went to look for a drop my CVs or go to an internet café… and I will go to the internet café to email my CV and stuff like that. When I come back home, he will tell me that, like I have a boyfriend, why must I bath and look nice and stuff like that what I'm I doing that for, all of that, and then he'll start to hit me…" (Participant Two)

"… I was actually friends with his friends, and then he would get jealous … we are having a braai or whatever, and I am talking too much with this one, and he would get jealous, and the moment I would walk away, then he would smack me or whatever. And in the past, there was physical abuse, but I would mostly …jealousy a very jealous type back then." (Participant Five)

"It was usually on the weekend, you see when we having snacks, the two of us and maybe a friend would join sometimes, or we went out so he would get jealous, or maybe when I went out with my friends and not come back home, even we together and just dating and then he'd get jealous when I go out with my friends only, and then he's not there, you see. So, he would like to start a fight or something like that, and then he would start to hit me …" (Participant Six)

In the example above, Participant Two narrates a story showing the connection between her partner's sexual jealousy and his physical violence against her. The romantic jealousy of the boyfriend could be witnessed in the way the participant was verbally and physically treated when she took care of herself to seek a job: "*when I come back home he*

will tell me that like I have a boyfriend, why must I bath and look nice and stuff like that what I'm I doing that for". The participant also additionally experienced both emotional and physical violence, which she attributes to her partner's sexual jealousy.

A common story shared in the interviews about how the violence intersected with jealousy was the experience of being at a social event with friends or others and the partner's sexual jealousy being triggered there, resulting, according to women, in physical violence. It appeared from the interview with Participant Six that her partner's jealousy seemly viewed the participant as property that exclusively belonged to him, based on the behaviour expressed towards the participant, as shared above. The partner's behaviour also seemed to indicate that he did not like the participant engaging with others, even when they went on dates together. Similarly, Participant Five's partner did not like the participant engaging with his friends, as it seems he perhaps felt threatened by the idea that the participant and his friends were casually talking and engaging, and this resulted in his abusive behaviour towards her.

To summarise, the participants' narratives above clearly illustrate the connections they make between their experiences of physical violence and their partners' jealousy. Romantic jealousy, as defined by White (1981), is a "complexity of perceptions, feelings, and actions that threaten the self-esteem and/or the being and nature of a relationship" (*p*.141). The jealousy that a partner portrays within a relationship is because of the threat that is perceived towards their relationship, which can be real or imagined (White, 1981). Research indicates that romantic jealousy felt by men can be a catalyst which drives their abusive behaviour towards women within the relationship (Buller et al., 2022). Furthermore, a qualitative meta-synthesis study by Pichon et al. (2025) found that men experienced romantic jealousy when their partner interacted with other men. These findings from Pichon et al. (2025) encapsulated the individual and interpersonal levels of the ecological model of engaging and interacting within interpersonal relationships. This is shown by the experience shared by Participant Five, who described how her partner might have felt —perhaps jealous of the interactions between her and his friends —resulting in the partner abusing her. Studies from within Latin, North America, and Europe have argued that men use IPV to control their partners from engaging with other men and as a means of male rivalry (Pichon et al., 2020). Studies have also argued that romantic jealousy and IPV are connected because of the threat of patriarchal beliefs that speak to societal gender normative systems that have sought to oppress and control women within a relationship (Pichon et al., 2020).

Participant Two's story (in the quotes above) and what the participant further shared in the interview seem to indicate that she was reluctant to report her partner for the abuse

because she had a baby and was not financially secure *"…I don't want to take him to the police station because if I take him to the police station who's gonna feed this baby, what Im I (what am I) going to do…"* shows the financial struggles she had to endure and how the only way for the participant to survive, economically, was to move in with her partner. Participant Two's financial precarity put her at the mercy of her partner's will and decisions – making her more vulnerable to his control and violence. She describes how, even in trying to find a job, she had to rely on him for money; her story thus illustrates the intersections between emotional, physical, and economic forms of abuse and financial precarity. These results also overlap with those reported in part one. The quantitative data illustrated that a large majority of the sample were unemployed and living in low-income areas – making issues around financial precarity relevant for many of them. Coker et al. (2000a) found that socio-economic factors had a significant impact on the prevalence of abuse that was occurring from a partner within a relationship.

In brief, the experiences the women shared above have highlighted what women experienced and had to endure within their relationships in terms of physical abuse. The theme shares a look into the brutal, jealous, abusive, and alcohol misuse behaviours participants were exposed to at the hands of their intimate partners. The theme has also presented how different forms of IPV can overlap, which has also been established in research. For example, Krebs et al. (2011) reported that collective acts and types of IPV can occur all in one instance of violence, complicating women's experiences and causing further harm.

The Impact of Physical Abuse on The Face, Neck, and Head. Against the backdrop of theme one, which looked at physical abuse that the participants experienced generally, this theme specifically looks to illustrate and understand the negative outcomes that physical abuse has on the face, neck, and head of women who have experienced IPV within their lifetime. Participants shared the following:

"Worse part, he stabbed me five times with a screwdriver…one on my face, one at the head…" (Participant One)

Participant One indicated that this was the worst of the abuse she had experienced and that when she was stabbed, one of the five stab wounds was in the face and one in the head. This type of impact the participant experienced could have resulted in an open TBI, which could also result in damage to the brain, especially considering the locations of the stab

wounds of the participant. Pavlidis et al. (2016) present a review of cases of TBI as a result of assaults from screwdrivers, which mainly occurred in the context of interpersonal violence. A high proportion of these cases were fatal (±48%), and in almost a quarter of these cases, the trauma associated with the incidents was missed because the entry wounds (given the pointed/sharp end of the screwdriver) were not noticed on medical admission and therefore the severity of the injury may not have been realised (Pavlidis et al., 2016). Participants Three and Five also described injuries to the face and neck:

"He holds my neck. And I told him I don't like it because I if I could die…I can die each and anytime … the choke one time, only happen once and didn't happen again…starts maybe klapping [3] (slapping) me in the face…" (Participant Three)

"I think I went to the doctor with a blue eye because I had blood clots in my eye…I can recall telling you about the kick to the curb when I banged my head…" (Participant Five)

Here Participant Three describes a choking or strangulation incident, terms often used interchangeably by the public (and even among some health professionals; Monahan et al., 2019). Strangulation can result in loss or alteration of consciousness in the brain (Valera & Berenbaum, 2003; Valera et al., 2022). Therefore, this non-fatal choking experience that the participant describes could leave her vulnerable to oxygen deprivation and a possible ABI through anoxia/hypoxia. Nyemgah et al. (2024) classified severe physical IPV as beating a person with an object, kicking, stabbing or threatening them with an object such as a knife, strangling/choking, dragging, and burning them, in an intimate relationship (Ergöçmen et al., 2013). Hence, Participant Three describes a severe form of physical IPV. Further, Cimino et al. (2019) put forward that physical abuse from a partner that includes strangulation that does not result in death (i.e., non-fatal strangulation) can bring about changes to the brain that are related to sustaining a TBI. The participant also experienced physical abuse that resulted in her being slapped in the face by her partner. Depending on the force, a slap to the face can result in the head, and consequently the brain, also being impacted (set in motion), which can also create vulnerability to sustaining a TBI, through the brain being shifted around in the hard skull cavity (Brain Injury Association of America, 2024; Lavadi et al., 2024; the

[3]The brackets have given context to what was meant by the word "klapping"

University of California Davis Health, 2024). Other participants also describe impacts to the head below:

Participant Five also describes a direct impact to the head as she was 'kicked to the curb', banging her head in the process. The fact that the participant was kicked by her partner, resulting in her hitting her head, showed the severity of the violence women could experience when being abused. Participant Five also describes blood clots in her eye. Even though this is not stated directly, in the context of IPV, research shows that petechial haemorrhages visible in the eyes (which could show up as 'blood clots') may reflect signs and symptoms of non-fatal strangulation (Holbrook & Jackson, 2013), which, as noted, can result in ABI (St. Ivany et al., 2021).

Both Participants Four and Six describe the negative effect that the physical abuse had on their heads, resulting in them describing recurrent and extremely painful headaches below:

"…like I'm getting headaches, extremely headaches…it was just chronic headaches and stuff, you know, like chronic headaches." (Participant Four)

"Afterwards, I started to develop a lot of regular headaches I couldn't cope with like my head was always like on knock…It was this day that I fainted when he was beating me. So maybe those headaches are coming from, so maybe I hurt my head when he was beating me, that's why I fainted."(Participant Six)

Research shows that exposure to IPV results in severe headaches in comparison to those who have not been exposed to IPV which may be because of or exacerbated by, the physical impact IPV can have on the head (Campbell et al., 2018; Gelaye et al., 2016). Furthermore, Participant Six's story of her headaches described very clearly how bad the pain of the headaches had become for her: *"I couldn't cope with like my head was always like on knock".* The severity of the pain the participant experienced when she had headaches felt like her head was 'knocking'. Additionally, the participant also shared that while her partner abused her, she fainted, and she wondered about possibly injuring her head during the abuse from her partner. Fainting and dizziness have also been described as signs and symptoms of non-fatal strangulation (Patch et al., 2018), so it might be conceivable that Participant Six was also exposed to this type of physical violence. There is, of course, also the possibility of sustaining an injury to the head because of the reason the fainting occurred, but also the possibility of the head heating an object when a person faints (CDC, 2024d).

Collectively, these reports of abuse to the face, head, and neck and its negative outcomes the participants recalled during the interviews illustrated the physical impact IPV had on participants. The stories shared highlighted outcomes of suffering women had to endure because of the physical abuse. Women who have been physically abused often sustain injuries that are related to the head, neck and face (Pilchta, 2004), and research increasingly shows how such injuries may result in brain injuries (Sheridan & Nash, 2007; Toccalino et al., 2023). The experiences shared by the participants, as captured in this theme, have contextualised the quantitative findings regarding rates of TBI in the sample, which showed that a large proportion of women—89.5%—reported having experienced IPV and sustaining a possible IPV-related TBI. This theme has gone on to provide a deeper understanding of how these IPV-related TBIs occur when women are abused by their partners.

It is these stories shared by these women that allow for the visible and possibly invisible traumas that impact their lives to come to light, encapsulating the health challenges women have to deal with and cope with after being physically abused in their daily lives. The negative health outcomes of IPV often also stretch beyond these visible and invisible traumas, possibly harming the overall well-being of abused women (WHO, 2024b).

Impact of IPV on Change to and In Self. A study conducted by Matheson et al. (2015) found that among women who experienced IPV, the physical wounds would heal, but the harm to a woman's self-esteem remained after the physical abuse. Such persistent effects of abuse impact how they feel about, and view themselves (Tariq, 2013). Thus, this third theme seeks to illustrate and bring an understanding of the negative impact IPV has on the self-esteem of women who have experienced abuse. Here, we refer to self-esteem as defined by Güler et al. (2022) as incorporating the self-concept, affirmation, and respect of the self. In this context, participants Two and Four describe the following:

"I lost my self-confidence through that." (Participant Two)

"Ja, I will say the change is a lot, so when I think back about, uhm confidence, uhm self, like self-confidence, self, low self-esteem, uhm I will say embarrassment because for me working in the community, with the community, facing on GBV, uhm working with clients who face, you know on every day, day to day bases, facing gender base violence now became a victim…" (Participant Four)

Participant Four describes dealing simultaneously with a negative change in self-confidence and self-esteem, as indicated above, but also the shame of experiencing the abuse. Participant Four notes the embarrassment she felt towards working in the field of GBV and then becoming a victim/survivor of IPV herself. Due to the negative impact of the traumatic experience of such abuse, those who have been exposed to it are more prone to developing emotional responses to trauma, such as shame, which may consequently result in a negative view of the self (Beck et al., 2011). Friederic (2024) describes such shame as emerging at different stages within the course of IPV, from thinking that one has done something wrong to deserve such abuse, to feeling shame from family members if one decides to leave an abusive partner or report them, which may consequently disrupt the family setup.

This type of shame from the trauma was shared by Participant Two where she developed a negative view of herself because she felt ashamed and disappointed towards herself for returning to her partner whilst fearing what others would also think about her *"...I was so ashamed of myself. I was so disappointed that I disappointed myself and I'm shy now that what people are going to say I'm stupid, mos to go back to this same guy that put me through this..."*[4]. These experiences shared by the participants reveal the complexities of being in their relationships; that is not as simple as just packing up and leaving for many reasons, such as love or finance (duRivage-Jacobs & Gasparini, 2023). As such, leaving an abusive relationship can be very difficult for women; it can take a victim/survivor up to seven attempts to leave an abusive partner successfully (duRivage-Jacobs & Gasparini, 2023).

The collective examples shared above by the participants show how damaging IPV has been to women's sense of themselves. All the above quotations from participants shared how the abuse has impacted their self-esteem and their overall perception of themselves. "…I lost my self-confidence…"; "say the changed is a lot…confidence…like self-confidence…". The participants' shared narratives demonstrate the role IPV plays in damaging the self-confidence of women, which is an important facet in shaping a person's self-esteem. A lack of self-confidence can result in self-doubt and often low self-esteem (Lupcho, 2023). Research shows that the abuse women experience at the hands of an intimate partner constantly has an impact on their self-esteem and self-identity (Matheson et al., 2015). The impact IPV has on eroding women's self-esteem/confidence is usually the result of

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[4] mos (you know): is an Afrikaans slang word which emphasises what is being said within a statement.

psychological/emotional abuse, as many participants who reported experiencing IPV had experienced such emotional/psychological abuse. The quantitative data showed that nearly 80% of the women in the study sample reported experiencing psychological/emotional abuse. Two other participants also shared the following in the interviews: one that her partner told her that she was useless, and the other that her partner wanted to control the narrative of their relationship by not allowing her to give her opinion within their relationship. These are clear indications of emotional/psychological abuse, and the long-term consequence of this type of abuse starts to heavily impact the confidence and self-worth of a person (Gupta & Renteria, 2024).

In summary, the impact that IPV has on abused women's self-esteem is evident in the literature, but also from the experiences participants shared with me as the researcher in the interviews. IPV can, as seen above, result in guilt and shame amongst the victim/survivors. Furthermore, women's low self-esteem is one of the invisible consequences of being a victim/survivor of IPV, and research shows that such consequences may place these women at risk for the development of mental illness (Costa & Gomes, 2018). Thus, the constant abuse women face at the hands of their partners could bring about a change in self. The impact of IPV on change in and to the self of women appears to have become part of women's lives, as these participant stories have indicated to some degree the consequences of such changes that they seem to be dealing with and living with, which include low self-esteem and self-confidence, and even shame. As noted, these are common consequences of IPV reported in the literature (Matheson et al., 2015). In addition to the change in self, IPV can also impact future intimate relationships, should victims/survivors choose to leave the abusive relationship.

IPVs Impact on Future Intimate Relationships. When women deal with abuse, it may harm how they feel about being in another intimate relationship (Fulton & Litner, 2020; Telloian & Litner, 2022). Literature shows the negative consequences of IPV and how it can impact the behaviour of women in a new relationship (Ko & Park, 2018). For example, women might be hesitant and/or scared that the new partner will do the same to them as their past abusive partner did, in the new relationship. This theme illustrates how IPV impacts how women feel about and behave within intimate relationships in the future. Participant One describes this:

"…I did tell that but not all of the stuff… when he asked then I just answer ...I don't tell him all of the story about me…" (Participant One)

In the above excerpt, Participant One only partly relays the abuse she endured with her ex-partner but struggles to share her past with her new partner in their relationship. Women have ways in which they deal with their trauma, such as avoiding being vulnerable or engaging with memories or triggers that are tied to their past abusive relationships (Ko and Park, 2018; St Vil et al., 2018). This reluctance or avoidance can be because it is too painful, triggering, and difficult for her to recall the memories of her past abuse in sharing them with her new partner. This shows how women must navigate new relationships because of the trauma they must continue to live with and work through within their lives because of IPV. Among various mental health challenges from the trauma that victims/survivors may be prone to during or following IPV, PTSD is reportedly among the most significant of these challenges (Pill et al., 2017).

Further, participants expressed their disillusionment with 'finding love' in future relationships and their fear of the cycle of repeated exposure to IPV in different relationships, as expressed by Participants Two and Four.

"Also, the trust it made me believe that uhm love doesn't exist when it comes to men like a relationship like this doesn't exist." (Participant Two)

The narrative above of Participant Two encapsulates how experiencing IPV made her feel about future relationships after what she had to endure. It seemed that the participant no longer trusted 'what love was' or the hope of finding a relationship where intimacy outside of IPV could be experienced.

"I was getting out of it. Now, stepping into another relationship, the person has the same behaviour and the same ways of doing things. Now, it is the second time I'm stepping into a similar situation, so for me thinking, thinking the ways forward. I don't see myself… walking into another relationship, cause now I'm actually scared. I'm scared that the cycle can happen again where the third person will do the same". (Participant Four).

As noted, Participant Four shares her concerns about not wanting to step into a new relationship because of the fear of stepping from one abusive relationship into another. The narrative seemed to indicate that because of the abuse and the trauma it has left behind, the participant was reluctant to get into another romantic relationship: *"I don't see myself at this stage, walking into another relationship, cause I'm scared"*. This fear is understandable, because the participant had trusted her partner to take care of her in their relationship, but the

partner never upheld this trust. For these reasons, trust issues and fear of future relationships are common among women who have experienced IPV (Fulton & Linter, 2020; St Vil et al., 2018).

Similarly, Participant Six felt that she could not romantically involve herself with another man after all the abuse she went through in her old relationship:

"I couldn't be with any guy after that after I broke up with him like I was so, not in a good space of dating…I could not even stare at men I hated everything to do with men."(Participant Six)

It appears, from what Participant Six shares, that the abuse she endured seemly left different types of hurt behind that affected how she felt about men, not wanting to even look at them, and feeling a sense of hatred towards them (described in a general sense) because of what her partner did to her in their relationship.

Research indicates the long-term consequences of experiencing trauma related to IPV and the impact it can have on a person's overall well-being, influencing how they progress from and within challenging situations in their lives (Leonard & Lawrenz, 2024), which may include managing future relationships (Ko & Park, 2018). In their study (Ko & Park, 2018), participants shared their experiences not only of physical abuse but also emotional/psychological and sexual abuse from their partners. Enduring either one or two, let alone all these forms of IPV, created a great sense of pain among these participants. One can thus imagine a similar kind of pain among the participants in the current study, given their experiences of some or all these types of IPV (as shown in the quantitative results that 76,5% of the sample experienced emotional IPV, 29.6% experienced sexual IPV, and over 1 in 2 women from the sample experienced physical IPV). It appeared that, based on how the participants spoke about these experiences during the interviews, there was pain that stemmed from the abuse they had to live through and from the fear that they would experience abuse again in their new relationships. As well as not wanting to step into another relationship in the future because they had been hurt and their trust betrayed by their ex-partner, which impacts their ability to form future romantic bonds (Velotti et al., 2018). Hence, Wessells and Kostelny (2022) describe that the consequences of IPV from women's current or past relationships can bleed into their future intimate relationships. Thus, there is a possibility that because women have experienced IPV, this will ultimately impact the participant's ability or

readiness to form romantic bonds in future relationships. This appears to be the case, as seen in what the participants have shared above about not wanting or being ready for future relationships, but also the belief that a potentially loving relationship may never be because of the IPV trauma they have experienced.

In brief, the lasting impact IPV can have on women's future intimate relationships can affect how victims/survivors behave and feel about being in new relationships. Therefore, the lasting effect IPV has on women does not just end with past abusive relationships. The trauma left behind from abusive relationships could have a lasting impact on the lives of abused women (Dexter & Bronstein, 2024; Villines & Brito, 2022). Lastly, in line with the theoretical framework used in the study, these participants' fear about engaging in future relationships reflects the damage done at the individual and interpersonal level of the ecological model that pertains to intimate and interpersonal interactions and social networking. Victims/survivors of IPV were less likely to engage with men if they felt that their safety was at risk or they were not being supported by the men in their existing circle, as shared in the participants' narratives above.

In summary, the four themes outlined above aimed to enhance the understanding of the participants' experiences with IPV and potential TBI. Furthermore, the themes also contextualise the participants' narratives of how they could have understood their experiences of abuse and how having injuries either to and/or the head, face, and neck could have impacted and changed their lives. These themes highlight various elements of the participants' accounts of the abuse they have faced in their relationships. Where applicable, references to the quantitative data are included; however, the qualitative data offer a deeper understanding of the quantitative results by contextualising the participants' narratives of abuse. Subsequently, the qualitative findings illustrate that there are aspects at both individual and interpersonal levels of the ecological model that account for women's experiences of IPV- which includes romantic jealousy, for example. In addition, these factors at these levels appear to be more salient to women's experiences than any others at the other levels of the ecological framework (although men's dominance, through patriarchy,is also a key factor at the societal level). Furthermore, the participants' narratives shed light on the high rates of IPV in the sample, which may offer insights relevant to similar sample groups and illustrate the negative impacts of IPV as expressed by these women. Additionally, the shared qualitative narratives contributed to understanding the link between IPV and the occurrence of a possible TBI based on the descriptions of injuries to the head, face and neck sustained during their abuse. In conclusion, the study's findings show convergence of the qualitative and

quantitative findings. The quantitative data have indicated a high prevalence of IPV-related TBI as predicted. The qualitative data support this prediction, through the four themes through narratives the participants shared about the abuse they endured, which addresses the research question. The quantitative and qualitative findings convergence supports the aims that were set out in the study, but also the sequential explanatory mixed method design chosen for the study.

Chapter Four: Conclusion

This research study's first aim was to evaluate the prevalence of TBI in a sample of South African women who have experienced IPV compared to a sample of South African women who have not experienced IPV. What this study found was that there was a high prevalence of IPV-related TBI among those women who had experienced IPV. Despite high rates of TBI in the country, South African women become even more vulnerable to sustaining a possible TBI when experiencing IPV, as it further increases the possibility of such injuries. The rate of IPV-related TBI reported by participants exceeded that of those who had not experienced IPV but who sustained a TBI through other mechanisms of injury. The study's findings of a high prevalence of IPV-related TBI are supported by other studies investigating similar outcomes (de Souza et al., 2024; Marcantonis, 2003; Molinares et al., 2023; Valera & Berenbaum, 2003).

This study's second aim was to provide an understanding of the experiences of IPV and TBI in the lives of a subsample of the participants. Four themes emerged in the qualitative component, namely: living with and experiencing physical abuse, the impact of physical abuse on the face, neck, and head, the impact of IPV on change to and in self, and IPV's impact on future intimate relationships. Overall, the qualitative data offered depth and complexity that contextualised the quantitative findings in this research. The first theme captured the narratives of participants' understandings of the severity and brutality of abuse that was experienced during IPV and articulated some of the reasons shared by the women why they believed the physical abuse occurred, such as sexual jealousy and control or alcohol consumption/misuse. The second theme captured the narratives shared by participants of their experiences with physical abuse to the face, head, and neck. The third theme captured the narratives of participants' experiences of IPV, which the participants understood as impacting their self-esteem and self-confidence and possibly resulting in feelings of shame. The fourth theme captured the narratives of abuse the participants shared, that they experienced and how they felt it impacted their behaviour in a future relationship. The four themes aimed to contextualise and amplify the narratives shared by the participants to bring forth a better understanding of living and dealing with IPV for victims/survivors and the compounding impacts of possible TBIs.

Ultimately, this mixed-methods design aimed to encapsulate the intersection between IPV and TBI. It is hoped that this was achieved by integrating the outcomes of the thematic analysis with the descriptive data, in providing a deeper understanding of the experiences of IPV and the additional impact sustaining TBIs can have on women's life experiences.

Limitations and Directions for Future Research

The first limitation of the study pertains to the sample size, as the original number of participants intended for the quantitative component was not met, and thus, this component of the study was underpowered. Further, an additional limitation was that the study's geographical outreach was primarily in a few low- to middle-income communities and, therefore, is not representative of the Western Cape.

Another limitation was in part two of the research study; the sub-sample had a small number of participants, which impacted the overall richness of the qualitative data. The sample size here was also determined by research and time constraints. A further limitation here was language, as the interviews were conducted in English. However, most of the participants were isiXhosa-speaking women but were able to converse in English. Funding constraints did not allow for the recruitment of isiXhosa-speaking interviewers; hence, isiXhosa-speaking participants could not be included within the study. However, this would be a recommendation for future research studies that will contain greater representation of individuals with various home languages spoken in the Western Cape. Additionally, funding/resource and time constraints for the current minor dissertation did not allow for the recruitment of the five extra participants, and the nature of the research topic understandably also had an impact on women reaching out to engage in the study; thus, statistical power was not reached. However, this issue of the statistical power not being reached will be addressed in future studies, given the knowledge and insight gained from the data collection process in the current research.

Finally, also noted in the current study is the limitation with self-reported data, particularly of TBI, given that it is retrospective and not confirmed by brain imaging or hospital records, and these reported brain injuries remain unconfirmed in this regard. However, having said this, the measures used have good psychometric properties and have been used successfully in other studies that have investigated brain injuries in the context of TBI. Additionally, the study was also limited by the self-reported data on IPV, as these screenings were done outside of a healthcare setting. However, in stating this, the measure used to screen for IPV was a reliable and valid psychometric tool that was further strengthened by the use of both the BISQ and the WAST, which were designed for screening for IPV.

Despite these limitations, the study was the first South African work to illuminate the intersections between a woman's experience of IPV and a subsequent TBI. Some direction for future studies is to address the limitations that impacted sampling and qualitative data richness

to assist with improving the generalizability of future studies. Future studies could also conduct more qualitative interviews in person to assist with the possibility of issues arising with telephonic and digital platforms, especially considering the demographics of the women who may take part in the future, based on the current findings.

Significance of this study

IPV and TBI are serious global health and societal issues that affect many women worldwide and within South Africa. Thus, it is important to understand the prevalence of TBI regarding IPV, the impact IPV has on the lives of women, as well as what it is like living with a possible TBI and/or violence within their living space. Understanding the intersections between TBI and IPV is crucial, as it is an area of study that has not been frequently looked at in the literature, especially within a South African context, compared to the vast amount of literature on the other mechanisms of TBI. Therefore, this study's contribution was to contribute to filling the gap in the literature and to provide an understanding of the prevalence and impact of IPV-related TBI on the lives of women within a South African context.

The international literature on mixed methods studies on the prevalence and experiences of IPV-related TBI is lacking, and South African literature on IPV-related TBI is non-existent. Therefore, this study sought to bring awareness to the impact IPV can have on women's lives by investigating the prevalence of IPV-related TBI and the impact IPV and a possible TBI have on the lives of women using this type of research design. While the descriptive statistics offered an indication of the high prevalence of IPV and IPV-related TBI, the qualitative data offered an in-depth understanding of what this meant for the lives and experiences of the women interviewed.

As indicated in the literature review, given the high rates of IPV and TBI globally and within South Africa, and the deleterious effects it has on women's health - it is evermore important to examine the health effects of IPV and TBI on women, especially concerning how they intersect. It is hoped that the results of the current study can at least present a start in research of this nature, which can be used to raise awareness of these issues and to inform policies around the importance of screening for IPV and TBI and IPV-related TBI, especially within South Africa, where rates of both IPV and TBI are high. Additionally, the study results could also assist in guiding future strategies for rehabilitation programs for those women who have been suffering emotionally and who have sustained a TBI due to the violence experienced in the context of their relationship with their intimate partner.

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Appendix A: Consent Form for Part One

UCT Department of Psychology

Participant Consent Form

Informed Consent to Participate in Research and Authorization for Collection, Use, and Disclosure of Questionnaire and Other Personal Data

You are invited to take part in part one of a research study. This form provides you with information about the study and asks for your permission to part take in the research study. Consent is also asked for the collection of data from your participation within the study. The Principal Investigator (the person in charge of this research) or a representative of the Principal Investigator will describe this study to you and answer all your questions before you sign this consent form. Your participation is entirely voluntary, and you may leave any time during the research. Before you decide whether to take part, read the information below and ask questions about anything you do not understand. You will not be punished in any way by not participating in this study.

1.Title of Research Study

Investigating the prevalence of injury to the brain in a sample of women who have experienced abuse by a husband or partner in a South African context.

2. Principal Investigators and Telephone Numbers

Caron Loren Zimri
MA in Psychological Research (student)
Department of Psychology
University of Cape Town
Email: zmrcar002@myuct.ac.za

Associated Professor: Dr Leigh Schrieff
Supervisor
Department of Psychology
University of Cape Town
Email: leigh.schrieff-elson@uct.ac.za

Professor: Dr Floretta Boonzaier
Co-Supervisor
Department of Psychology
University of Cape Town
Email: Floretta.boonzaier@uct.ac.za

3. What is the purpose of this research study?

The proposed study will consist of two parts, which informs the two study aims. The first aim of the proposed study is to evaluate the injury to the brain in a sample of South African women who has been exposed to abuse by a husband or partner compared to a sample of South African women who has not been exposed to abuse by a husband or partner. The second aim of the proposed research study is to provide an understanding of the experiences of abuse by a husband or partner and injury to the brain in the lives of a subsample of the participants from part 1.

4. What will be done if you take part in this research study?

You will complete a general screening measure questionnaire; three screening measure questionnaires for injury to the brain and abuse by a husband or partner for part one of the study. Those participants who will be moving to part two of the research study, will be assessed again based on a semi-structured interview where participants will speak freely and comfortably about their experiences of how abuse by a husband or partner and injury to the brain has impacted and affected their lives.

5. If you choose to participate in this study, how long will you be expected to participate in the research?

Completing the questionnaires will take place during one session, which should not last longer than 2 and a half hours. If at any time during the session you wish to stop your participation, you are free to do so without penalty. Part two of the study will involve interviews with participants about their current or past experiences or exposure to abuse

from their husband or partner. If you chose to participate in part two of the research study, you will be interviewed in a separate session, which will also take no longer than one and a half hours.

6. How many people are expected to participate in the research?

Total sample of 86 participants.

7. What are the possible discomforts and risks?

There are possible known risks associated with participation in this study, as completing the questionnaire and talking about traumatic experiences can be very difficult and bring about a lot of emotional discomfort. Should you get tired during the study, you will be allowed to rest. If you wish to discuss the information above or any discomforts you may experience, you may ask questions now or call the Principal Investigators listed in #2 of this form.

8a. What are the possible benefits to you?

You will not benefit from participating in this study, but the findings may help in our understanding of the number of women who could develop an injury to the brain with regards to the experiences of abuse from a husband or a partner. If you are feeling any psychological discomfort during the process of the research sessions, you will be referred to the appropriate parties that can assist you with what you are dealing with.

8b. What are the possible benefits to others?

The information gained from this research study will help improve our understanding of the women who have experienced abuse from a husband or a partner and who are living with injury to the brain because of these experiences.

9. If you choose to take part in this research study, will it cost you anything?

Participating in this study will not cost you anything.

10. Will you receive compensation for taking part in this research study?

You will receive a R100 voucher for your time and participation

11a. Can you withdraw from this research study?

You are free to withdraw your consent and to stop participating in this research study at any time. If you do withdraw your consent, there will be no penalty.

If you have any questions regarding your rights in this research, you may phone the Psychology Department office and get in touch with Rosalind Adams.

Her email address is rosalind.adams@uct.ac.za or you may contact her via telephone – 021 650 3417.

11b. If you withdraw, can information about you still be used and/or collected?

Information already collected during the research process may be used within the proposed study.

12. Once personal and performance information is collected, how will it be kept secret (confidential) in order to protect your privacy?

Only certain people have the right to review these research records. These people include the researchers for this study and certain University of Cape Town officials. Your research records will not be released without your permission unless required by law or a court order. Your identity will not be revealed and all the information you give will be strictly confidential. Any reports will only provide the average data under specific categories, and no-one will be able to identify you in the report.

13. What information about you may be collected, used and shared with others?

This information gathered from you will be your data from the screening measure and possibly the semi-structured interview. If you agree to be in this research study, it is possible that some of the information collected might be copied into a "limited data set" to be used for other research purposes. If so, the limited data set may only include information that does not directly identify you. For example, the limited data set cannot include your name, address, telephone number, ID number, or any other numbers or codes that link you to the information in the limited data set.

14. Signatures

As a representative of this study, I have explained to the participant the purpose, the procedures, the possible benefits, and the risks of this research study; and how the participant's performance and other data will be collected, used, and shared with others:

____ ____________________

Signature of Person Obtaining Consent and Authorization Date

You have been informed about this study's purpose, procedures, possible benefits, and risks; and how your performance and other data will be collected, used and shared with others. You have received a copy of this form. You have been given the opportunity to ask questions before you sign, and you have been told that you can ask other questions at any time.

You voluntarily agree to participate in this study. You hereby authorize the collection, use and sharing of your data. By signing this form, you are not giving away any of your legal rights.

____ ____________________

Signature of Person Consenting and Authorizing Date

Please indicate below if you would like to be notified of future research projects conducted by our research group:

______________ (initial) Yes, I would like to be added to your research participation pool and be notified of research projects in which I might participate in the future.

Method of contact:

Phone number: ________________________

E-mail address: ________________________

Mailing address: ________________________

____

15. After part one of the study has been conducted would you liked to be contacted regarding part 2 of the proposed research study (Please circle your answer).

YES OR NO

*** Once part one and two data collection has been completed participants who have experienced IPV will be invited to attend a debriefing session with a therapist/counsellor, if they would like to do that.***

Thank you for partaking in the study titled: Investigating the prevalence of TBI in a sample of women who have experienced IPV in a South African context.
Your participation and answers to questionnaires and interviews are appreciated.

Should you have any worries or concerns regarding your participation in this study or feel anxious or unsettled in relation to your participation, you may contact the researcher, her Supervisors on the contact details mentioned above.

This current study is being conducted at UCT by a Psychology Masters student.
This study aim is to evaluate the prevalence of TBI in a sample of South African women who have experienced IPV compared to a sample of South African women who have not experienced IPV.

Appendix B: Consent Form for Part Two

UCT Department of Psychology

Participant Consent Form

Informed Consent to Participate in Research and Authorization for Collection, Use, and Disclosure of Questionnaire and Other Personal Data

You are invited to take part two of a research study. This form provides you with information about the study and asks for your permission to part take in this part of the research study. Your consent is also requested for the collection of data from you for part two of the study. The Principal Investigator (the person in charge of this research) or a representative of the Principal Investigator will describe this study to you and answer all your questions before you sign this consent form. Your participation is entirely voluntary, and you may leave at any time during the research. Before you decide whether to take part, read the information below and ask questions about anything you do not understand. You will not be punished in any way by not participating in this study or deciding to leave it at a later stage.

1.Title of Research Study

Investigating the prevalence of TBI in a sample of women who have experienced IPV in a South African context.

2. Principal Investigators and Telephone Numbers

Caron Loren Zimri

MA in Psychological Research (student)

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Professor: Dr Floretta Boonzaier

Co-Supervisor

Department of Psychology

University of Cape Town

Email: Floretta.boonzaier@uct.ac.za

3. What is the purpose of this research study?

The purpose of part two of the proposed research study is to provide an understanding of the experiences of IPV and TBI in the lives of a subsample of the participants from part 1.

4. What will be done if you take part in this research study?

During this part of the proposed study, you will be invited to an interview where you will be invited to talk about your experiences of violence, and how these experiences have impacted and affected your life. If you take part in the research study your permission will be asked to record the interview during the session with the researcher to assist with processing of the data during the writing of the research paper. The interview can take place face-to-face or telephonically.

5. If you choose to participate in this study, how long will you be expected to participate in the research?

Completing the semi- structured interview will take place, which should not last longer than one and a half hours. If at any time during the session you wish to stop your participation, you are free to do so without penalty.

6. How many people are expected to participate in the research?

We expect 25 people to do the study

7. What are the possible discomforts and risks?

Talking about traumatic experiences can be very difficult and bring a lot of emotional discomfort but it can also be a relief. Should you get tired during the study, you will be allowed to rest. If you wish to discuss the information above or any discomforts you may experience, you may ask questions now or call the Principal Investigators listed in #2 of this form.

8a. What are the possible benefits to you?

You will not benefit from participating in this study, but the findings may help in our understanding of the number of participants that could develop a traumatic brain injury because of experiencing of intimate partner violence. If you are feeling any psychological discomfort during the process of the research sessions, you will be referred to the appropriate parties that can assist you with what you are dealing with.

8b. What are the possible benefits to others?

The information gained from this research study will help improve our understanding of the women who have experienced IPV and who are living with TBI because of these experiences.

10. If you choose to take part in this research study, will it cost you anything?

Participating in this study will not cost you anything.

11. Will you receive compensation for taking part in this research study?

You will receive a R100 voucher.

12a. Can you withdraw from this research study?

You are free to withdraw your consent and to stop participating in this research study at any time. If you do withdraw your consent, there will be no penalty.

12b. If you withdraw, can information about you still be used and/or collected?

Information already collected during the research process may be used within the proposed study.

13. Once personal and performance information is collected, how will it be kept secret (confidential) in order to protect your privacy?

Only certain people have the right to review these research records. These people include the researchers for this study and certain University of Cape Town officials. Your research records will not be released without your permission unless required by law or a court order. Your identity will not be revealed and all the information you give will be strictly confidential. No-one will be able to identify you in any reports from the study.

14. What information about you may be collected, used and shared with others?

This information gathered from you will be your data from the interview.

15. Signatures

As a representative of this study, I have explained to the participant the purpose, the procedures, the possible benefits, and the risks of this research study; and how the participant's performance and other data will be collected, used, and shared with others:

____ ______________________

Signature of Person Obtaining Consent and Authorization **Date**

You have been informed about this study's purpose, procedures, possible benefits, and risks; and how your performance and other data will be collected, used and shared with others. You have received a copy of this form. You have been given the opportunity to ask questions before you sign, and you have been told that you can ask other questions at any time.

You voluntarily agree to participate in this study. You hereby authorize the collection, use and sharing of your data. By signing this form, you are not giving away any of your legal rights.

____ ______________________

Signature of Person Consenting and Authorizing **Date**

(if face-to-face)

Consent for telephonic interview provided and recorded (if telephonic): Y N

Please indicate below if you would like to be notified of future research projects conducted by our research group:

______________ (initial) Yes, I would like to be added to your research participation pool and be notified of research projects in which I might participate in the future.

Method of contact:

Phone number: ________________________

E-mail address: ________________________

Mailing address: ___________________________

16. Authorization to record the interview.

For the purpose of the reporting accurate information of the interview during the analysis of the data and the writing of the report. The participant's consent is required to record the interviews during the telephonic interview session. If there are any questions about this, please feel free to contact the researcher and/or supervisors mentioned in #2 of these documents.

____

Signature of Person Consenting and Authorizing of the recording of interview

____

Date

18. Questions / queries

Should you have any questions about your participation in this study or feel anxious or unsettled in relation to your participation, you may contact the researcher, or her Supervisors on the contact details mentioned above.

If you have any questions regarding your rights in this research, you may phone the Psychology Department office and get in touch with Rosalind Adams.

Her email address is rosalind.adams@uct.ac.za or you may contact her via telephone – 021 650 3417.

Thank you for partaking in the study titled: Investigating the prevalence of TBI in a sample of women who have experienced IPV in a South African context.

Your participation and answers to questionnaires and interviews are appreciated.

Appendix C: Demographic Questionnaire

DEMOGRAPHIC QUESTIONNAIRE AND ASSET INDEX

Now that you have agreed that you'd like to be part of this study, we'd like to start by learning more about you by asking you a few questions about your background: where you live, your schooling, if you are working or have worked before, etc.

GENERAL INFORMATION

Full name (Participant):	
Telephone:	Work: ( ) Home: ( ) Cell:
Home Language:	
Date of Birth:	
Area of residence	
Relationship Status:	

EDUCATION:

What is your highest level of education?

EDUCATION: (Please circle appropriate number)

Highest level of education reached? Mark one response for each person as follows:	
1. 0 years (No Grades / Standards) = No formal education (never went to school)	1.
2. 1-6 years (Grades 1-6 / Sub A-Std 4) = Less than primary education (didn't complete primary school)	2.
3. 7 years (Grade 7 / Std 5) = Primary education (completed primary school)	3.
	4.

4. 8-11 years (Grades 8-11 / Stds 6-9) = Some secondary education (didn't complete high school) 5. 12 years (Grade 12 / Std 10) = Secondary education (completed senior school) 6. 13+ years = Tertiary education (completed university / technikon / college) 7. Don't know	5. 6. 7.

HOUSEHOLD INCOME:

Approximately, what is the current (yearly) income in your household? If you're not sure about the yearly amount, you can tell us the total monthly income in your household.

HOUSEHOLD INCOME: (Please circle appropriate number)

Household income per year:	1. R0 2. R1 – R5 000 3. R5001 – R25 000 4. R25 000 – R100 000 5. R100 001+

EMPLOYMENT

Are you currently employed?

Yes or No

- If you are employed, what job are you doing?
- If you are not currently employed, have you worked before and what job were you doing?

EMPLOYMENT: (Please circle appropriate number)

Hollingshead categories:	Circle
1. Higher executives, major professionals, owners of large businesses)	1.

2. Business managers of medium sized businesses, lesser professions (e.g. nurses, opticians, pharmacists, social workers, teachers) 3. Administrative personnel, managers, minor professionals, owners / proprietors of small businesses (e.g. bakery, car dealership, engraving business, plumbing business, florist, decorator, actor, reporter, travel agent) 4. Clerical and sales, technicians, small businesses (e.g. bank teller, bookkeeper, clerk, draftsperson, timekeeper, secretary) 5. Skilled manual – usually having had training (e.g. baker, barber, chef, electrician, fireman, machinist, mechanic, painter, welder, police, plumber, electrician) 6. Semi-skilled (e.g. hospital aide, painter, bartender, bus driver, cook, garage guard, checker, waiter, machine operator) 7. Unskilled (e.g. attendant, janitor, construction helper, unspedified labour, porter, unemployed) 8. Homemaker 9. Student, disabled, no occupation	2. 3. 4. 5. 6. 7. 8. 9.

MATERIAL AND FINANCIAL RESOURCES (ASSET INDEX): (Please circle appropriate number)

Which of the following items, in working order, does your household have?

Items	Yes	No
1. A refrigerator or freezer	1.	1.
2. A vacuum cleaner or polisher	2.	2.
3. A television	3.	3.
4. A hi-fi or music center (radio excluded)	4.	4.
5. A microwave oven	5.	5.
6. A washing machine	6.	6.
7. A video cassette recorder or cd player/radio	7.	7.

Which of the following do you have in your home?

Items	Yes	No
1. Running water	1.	1.
2. A domestic worker	2.	2.
3. At least one car	3.	3.

4. A flush toilet	4.	4.
5. A built-in kitchen sink	5.	5.
6. An electric stove or hotplate	6.	6.
7. A working telephone	7.	7.

Do you personally do any of the following?

Items	Yes	No
1. Shop at supermarkets	1.	1.
2. Use any financial services such as a bank account, ATM card or credit card	2.	2.
3. Have an account or credit card at a retail store	3.	3.

Appendix D: WAST screening tool

WOMAN ABUSE SCREENING TOOL1 (WAST)

1. In general, how would you describe your relationship?
a lot of tension
some tension
no tension
2. Do you and your partner work out arguments with:
great difficulty
some difficulty
no difficulty
3. Do arguments ever result in you feeling down or bad about yourself?
often
sometimes
never
4. Do arguments ever result in hitting, kicking or pushing?
often
sometimes
never
5. Do you ever feel frightened by what your partner says or does?
often
sometimes
never
6. Has your partner ever abused you physically?
often
sometimes
never
7. Has your partner ever abused you emotionally?
often
sometimes
never
8. Has your partner ever abused you sexually?
often
sometimes
never

Source: Brown, J., Lent, B., Schmidt, G., & Sas, S. (2000). Application of the Woman Abuse Screening Tool (WAST)
and WAST-short in the family practice setting. *Journal of Family Practice, 49,* 896-903.

Appendix E: Semi-Structured Interview for Part Two

Good morning/Good afternoon, thank you for your time and for attending this interview with me today. Today's interview session will be to explore your experiences of intimate partner violence and how it might have impacted on you. The interview session is a continuation of the research study in which you completed the questionnaires. You have indicated that you are willing to talk more about the abuse you experienced in your relationship (this will be past or present, depending on the participant). I understand that this will not be easy to talk about. You are more than welcome to take breaks at any time during this interview or if you decide that any point that you no longer wish to take part in this interview you may do so, without any penalty.

Do you feel comfortable for us to begin?

Questions

Question 1

Can you tell me about your relationship you had with your spouse or partner and how long had you been in your relationship with your spouse or partner?

- What has it been like for you?

Question 2

Can you tell me about the abuse in your relationship?

- When did it start?
- What happened? How often?
- What did you do?
- What forms of support have you had?

Question 3

Can you tell me about what your relationship was like before the abuse started, and how it has changed after you experienced the abuse?

- Do you remember when your spouse or partner's behaviour towards you began to change within the relationship?

Question 4

Can you remember, how often the abuse would occur within your relationship?

Question 5

How have your experiences living with physical assault changed and/or impacted your life?

- Has it ever made you feel unwell?
- Has it ever changed your daily living/routine?

- Has it affected you physically? Have you sustained any injuries to your head and neck? Tell me about those experiences.
- If it has affected your head and neck, how has this impacted your life?
- If your head and neck has been affected and has impacted on your life, have you considered seeing a doctor or getting assistance for the injuries?
- If you have experienced physical assault to you head and neck, have you ever had any health problem that related to this ? Can you tell me more about those experiences.
- Has the physical assault ever made you view life differently then before the abuse or how you view your relationship now or within the past?

Is there anything more that you would like to add regarding your experiences of abuse from you partner?

Appendix F: Resource list

ORGANISATIONS DEALING WITH GENDERED AND SEXUAL VIOLENCE

1. The National Institute for Crime Prevention and Reintegration of Offenders (NICRO):
Mitchell's Plain: 021-397 3782
Cape Town: 021-422 1690
Bellville: 021-944 3980 or visit their website on: www.nicro.org.za
2. Family and Marriage Society of South Africa (FAMSA):
Observatory: 021 447 7951 or visit their website on: www.famsa.org.za
3. Mosaic Training, Service and Healing Centre for Women:
Wynberg: 021 761 7585 or visit their website on: www.mosaic.org.za
4. Saartjie Baartman Centre for Women and Children:
Manenberg: 27 21 633 5287
or visit their website on: http://www.saartjiebaartmancentre.org.za/
15. Rape Crisis

Observatory (Head office)
23 Trill Road, Observatory, 7925, Cape Town
P O Box 46 Observatory 7935
Email: communications@rapecrisis.org.za
Complaints: complaints@rapecrisis.org.za
Telephone: 021 447 1467

Athlone
335a Klipfontein Road, Athlone
Telephone: 021 684 1180

Khayelitsha
89 Msobomvu Drive, Khayelitsha
Telephone: 021 361 9228

Appendix G: Study Advertisement -Women who have been exposed to domestic violence

RESEARCH PARTICIPANT RECRUITMENT

The study is investigating head injuries in women who have been exposed to physical violence by a partner.

****Your safety, privacy and wellbeing will be respected during the study****

DETAILS

We are looking for adult women 18 years and older, that are or have been in a relationship, married or divorced, and who have been physically abused.

For this study, participants will answer some questions in an interview during part one of the research. Researchers will go through 6 questionnaires in which take about 2-2.5 hours to complete.

In part two of the research, those who would like to continue will be interviewed about their experiences.

If you agree to participate in this study and we have completed the data collection process, we will offer you a R100 voucher as a token of appreciation for your time.

Finally, this study seeks to understand and increase awareness of how partner physical violence and possible injury to the head as a result can forever change the life of a

Appendix H: Study Advertisement- Control participants

RESEARCH PARTICIPANT RECRUITMENT

The study is investigating head injuries in women.

****Your safety, privacy and wellbeing will be respected during the study****

DETAILS

We are looking for adult women 18 years and older who have NOT experienced domestic violence.

During the study, participants will answer some questions in an interview. Researchers will go through 6 questionnaires which take about 2-2.5 hours to complete.

If you agree to participate in this study and we have completed the data collection process, we will offer you a R100 voucher as a token of appreciation for your time.

Appendix I: Ethics Approval Letter

UNIVERSITY OF CAPE TOWN

Department of Psychology

University of Cape Town Rondebosch 7701 South Africa
Telephone (021) 650 3417
Fax No. (021) 650 4104

05 September 2022

Caron Zimri
Department of Psychology
University of Cape Town
Rondebosch 7701

Dear Caron

I am pleased to inform you that ethical clearance has been given by an Ethics Review Committee of the Faculty of Humanities for your study*, Investigating the prevalence of TBI in a sample of South African women who have experienced IPV in a South African context.* The reference number is PSY2022-037.

I wish you all the best for your study.

Yours sincerely

Lauren Wild (PhD)
Associate Professor
Chair: Ethics Review Committee