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Intimate Partner Violence, Social Support, Mastery, and Mental Health

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Abstract

Background

Despite the growth in research on intimate partner violence (IPV) as a chronic stressor, including studies on the negative mental health impacts of IPV, limited attention has been given to understanding the *stress process* in terms of the direct impact of IPV on mental health and the simultaneous mediating effects of social support (emotional or practical assistance from one's network) and mastery (a sense of personal control) on the relationship between IPV and mental health [Depression symptoms and Post-traumatic stress disorder (PTSD) symptoms]. These mechanisms are also poorly understood in the context of the concurrent effects of age, mothering, education, and intimate partner status.

Purposes

This dissertation examined the direct impact of IPV on mental health (Depression symptoms and PTSD symptoms) and the mechanisms that explain the relationship between severity of IPV and women's mental health at a specific point in time, with a particular focus on testing whether and how social support and mastery mediated this relationship, in the context of selected conditions of women's lives. The specific purposes were: (i) to examine whether mastery and social support mediate the effects of IPV severity on mental health and (ii) to identify which aspects of the social context of women's lives account for variations in the mechanisms between IPV and mental health.

Methods

Drawing on feminist intersectionality, a secondary analysis was conducted using data from a sample of 462 women with histories of recent IPV (i.e., past 6 months) and who participated in the iCAN plan 4 safety trial. Participants completed online surveys comprised of

standard self-report measures for each study variable: IPV severity (Composite Abuse Scale), Depression (Center for Epidemiologic Studies Depression Scale), PTSD (PTSD checklist, Civilian Version), Mastery (Pearlin's Mastery Scale) and Social Support (Medical Outcomes Study Social Support Survey). Structural equation modeling techniques were used to examine the mediating effects of both social support and mastery on the relationships between IPV severity on both depression and PTSD symptoms, while examining the effects of selected covariates capturing conditions of women's lives (e.g., education, age, whether living with partner and mothering a minor child) on the direct and indirect effects of IPV on mental health.

Results

The four key results are: (1) there was overall support for both direct and indirect effects in the model although direct effects were stronger; these results suggest strong relationship between severity of IPV and mental health problems even in the presence of mediators; (2) mastery but not social support mediated the relationship between IPV and mental health (for both outcomes: depression and PTSD symptoms), supporting nonconcurrent mediating effects of social support and mastery on the relationship between IPV and mental health, as opposed to the simultaneous mediating effects of these resources proposed in the Stress Process Model; (3) mothering reduced the negative effects of IPV on mental health, and although this effect was weak, it was stronger for depression than for PTSD; thus, mothering may offer some protection against the negative effect of IPV on depression and PTSD symptoms; (4) based on a subgroup analyses conducted with women who were and were not mothering dependent children, different mechanisms may explain the impact of IPV on mental health for women based on mothering status: social support mediated the relationship between IPV and mental health in women who

identified as mothers of dependent children, while mastery mediated this relationship in women who did not identify as mothers of dependent children.

Conclusions

The dissertation study produced new evidence that mastery mediates the relationship between severity of IPV and women's mental health. If mastery is eroded by IPV, efforts to help women regain control could also help strengthen women's health. Further, mothering is an important context for understanding the varied impacts of IPV on mental health. This reinforces the importance of taking an intersectional perspective and attempting to unpack the complexity of the mechanisms that explain the pathways between IPV, resources and mental health in ways that account for women's differing realities.

Keywords: Intimate Partner Violence, Social Support, Mastery, Post-Traumatic Stress Disorder Symptoms, Depression Symptoms, Age, Education, Intimate Partner Status, Mothering, Stress Process Model, Feminist Intersectional lens, Structural Equation Modelling

Lay Summary

Informed by the Stress Process Model and Feminist Intersectional lens, the dissertation advances knowledge of the negative mental health impacts of intimate partner violence on Canadian women by offering novel insights about the role of mastery in mediating the relationship between IPV and mental health and the potential role of mothering (a key social location/condition) in protecting against these negative impacts in ways that needs to be more fully explored to promote holistic intervention against intimate partner violence.

The dissertation also underscores the complexity and variation in women's experiences of violence and the mechanisms that explain the impacts of IPV on mental health based on women's mothering status. For women who identified as mothering dependent children, social support was the means through which intimate partner violence reduced mental health. But for women who identified as not mothering dependent children, mastery was the means through which intimate partner reduced mental health.

These findings point to the value of intersectional lens in research and in developing programs and policies that prioritize women's choice and control, and are responsive to their varied needs and contexts, as a pathway to better mental health.

Co-Authorship

As the dissertation was completed under the supervision of Dr. Marilyn Ford-Gilboe, and Committee Members, Dr. Michael Kerr, and Dr. Kelly Scott-Storey, they will be co-authors of publications produced from the dissertation.

Acknowledgment

With so much heartfelt gratitude beyond words, I say thank you to Dr. Marilyn Ford-Gilboe, my PhD supervisor, and the dissertation committee members (Dr. Michael Kerr and Dr. Kelly Scott-Storey) for overseeing this dissertation with intellectual wisdom, critical insights and training. Thank you to the women who participated in the iCAN plan 4 safety trial for boldly sharing their experiences of intimate partner violence and other aspects of their lives.

Dedication

I am honoured to dedicate my doctoral dissertation to the memory of Anna “Daavi” Aku Lotsu for the foundations of my education.

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Chapter 1

Introduction

This monograph dissertation has 5 distinct chapters. Chapter 1 is the introductory chapter, entailing a brief overview of the entire dissertation as a foundation for the more detailed chapters that follow. Chapter 2 focuses on a review of literature pertaining to themes reflecting the study focus: Intimate Partner Violence (IPV), Consequences of IPV and Indirect Effects of IPV. Chapter 3 explores the methodology and methods, while Chapter 4 contains details of the study results. Chapter 5, the last chapter, summarizes the results and situates them within existing literature, and presents the implications of this dissertation study. Information about the original study (e.g., Study Measures and Letter of Information and Consent), which provided the data for the secondary analysis reported in this dissertation, is located in the Appendices.

Background

The occurrence of intimate partner violence (IPV) culminates in negative effects, including mental health problems, requiring resources for recovery. Global prevalence rates indicate at least 3 in 10 women experience IPV in their lifetime (World Health Organization [WHO], 2013). This rate remained unchanged in a recent follow-up multi-country study conducted in 2018 (WHO, 2021). IPV refers to patterns of victimizing acts of physical, sexual, economic and/or psychological abuse and controlling behaviours by a current or former intimate partner (WHO, 2021). IPV is a chronic stressor not only because it proliferates from the occurrence of existing stressors (e.g., gendered disadvantaged positions), but also because the mental health problems arising from IPV have significant economic costs arising from illness and associated healthcare problems that are linked to lost productivity and challenges enacting social roles (see Aneshensel & Avison, 2015). The cost of IPV on the Canadian economy was

estimated to be $7.4 billion in 2009 more than a decade ago, with victims bearing 74% of this total amount (Zhang et al., 2012). IPV and its mental health consequences can last a lifetime, continuing even after leaving an abusive relationship (Alhalal et al., 2012; Rezey, 2020). In short, IPV results in enduring burdens for individuals, and fuels health and social inequity, disproportionately affecting the lives of many women.

Mechanisms Explaining the Impact of IPV on Mental Health

IPV has been well-documented as adversely affecting many aspects of women's lives directly or indirectly (Devries et al., 2013; WHO, 2021). The literature, ranging from theoretical propositions (e.g., Pearlin, 1989; Pearlin & Bierman, 2013) to empirical evidence (e.g., Agyemang et al., 2022; Beeble et al., 2009; Ogbe et al., 2020; Ford-Gilboe et al., 2009) affirms that chronic stressors such as IPV disrupt (mental) health, and resources mediate or moderate the impact of IPV on (mental) health (Pearlin, 1989; Pearlin & Bierman, 2013). Social support (the availability of emotional or practical assistance from one's network) and mastery (one's sense of control over life) may be essential resources in how IPV impacts mental health, defined here as emotional well-being (Pearlin & Bierman, 2013).

Despite the growth in research on IPV and its impact on mental health (Dillon et al., 2013; Lagdon, Armour & Stringer, 2014; Sparrow et al., 2017) and increased attention to the mechanisms that explain how IPV affects women's mental health (Black 2011; Paulson, 2022), limited attention has been given to the parallel mediating effects of social support and mastery in explaining the relationship between IPV and women's mental health. Given that mental health is part of overall health, IPV could also erode these resources, including social support and mastery, making them less available to support the health of individuals (see WHO, 2014). Since mastery and social support are positively correlated (Green & Rodgers, 2001), it has been suggested that

their interaction, or combined effect, may lead to positive impacts on health (Hasson-Ohayon et al., 2018; Uchino, 2006).

A large body of evidence supports direct negative effects of IPV on mental health (e.g., Post-Traumatic Stress Disorder [PTSD] and depression) (Dillon et al., 2013; Sparrow et al., 2017), and both social support and mastery have been positively related to mental health outcomes in women experiencing IPV (Herman, 1992; Skomorovsky & LeBlanc, 2017; Rodríguez et al., 2010). A growing body of research has identified social support as a mediator of the relationship between IPV severity and mental health (Ogbe et al., 2020; Ford-Gilboe et al., 2009). However, limited attention has been given to examining whether mastery mediates the relationship between IPV and mental health, or whether social support and mastery are mechanisms that explain the relationship between IPV and mental health at a specific point in time or over time.

In women, access to resources explain the mental health impacts of IPV, as IPV has been shown to reduce the availability of social support, resulting in poorer mental health (mediating effect) in several cross-sectional studies (Ogbe et al., 2020; Coker et al., 2003; Ford-Gilboe et al., 2009). A few longitudinal studies have considered associations between IPV and mental health, with mastery and social support identified as predictors of changes in mental health (Chuang et al., 2012; Rodríguez et al., 2010). Mastery and social support may not only moderate and mediate the relationship between IPV severity and mental health on their own, but these resources may also exert a combined impact on women's mental health in the context of IPV, yet these concurrent effects have not been previously tested. Cross-sectional analysis of the IPV-social support/mastery-mental health relationship is foundational to addressing some critical gaps in the literature. Due to bidirectionality between IPV, social support, mastery and mental health

(e.g., Gerino et al., 2018), longitudinal studies are also needed to account for the temporal orderings of the mechanisms between IPV and mental health such that the process that explains the effects of IPV on changes in mental health is better understood.

Social Locations of Women's Lives

From a feminist intersectional perspective (Crenshsaw, 1989; Collins, 2019), the varied social locations that women occupy have powerful effects on how they experience and respond to life events/stressors, such as IPV, and the impacts of these experiences. These social locations reflect social status hierarchies that act in an interactive way to confer layers of relative advantage or disadvantage (Crenshaw, 1989; Collins, 2019; Hankivsky, 2014). There is considerable evidence that women's experiences of IPV are shaped by multiple social locations and that some women deal with greater disadvantages in the face of IPV (Ford-Gilboe et al., 2009; George & Stith, 2014; Hegarty et al., 2013; West, Rice II, Cottman & Gardner, 2020). However, the relationships between the social locations of women's lives (such as their age, education, intimate partner status, or whether they are mothering) and their experiences of IPV, access to resources and their mental health have seldom been studied from feminist intersectional perspective. A more complete understanding of the relationships between IPV, resources and mental health must take women social locations into account. In this study, feminist intersectionality was used to explicitly draw attention to variations in women's experiences of IPV, its impacts (symptoms of PTSD and depression) and mechanisms (mediating effects of social support and mastery) in the context of differences in women's social locations.

The Use of Feminist Intersectional Lens

Feminist intersectionality was used as a *broad lens* to draw attention to the importance of possible differences in women's experiences of IPV, resources and mental health based on their

social locations, and in the mechanisms that explain the impact of IPV on mental health, and as a reflection of relative advantage/disadvantage and power (Collins, 2019). As a theoretical lens, feminist intersectionality was used, along with insights from the literature review (chapter 2), to inform the quantitative analysis conducted in this study. Given my interest in power tied to social location, rather than identity, I did not plan to conduct a full intersectional analysis but used intersectionality as a way of thinking about how the features of women's lives were linked to power relations that could be important in understanding the direct and indirect effects of IPV on women's mental health based on the Pearlin's Stress Process Model. This was an effort to counter the tendency in research to ignore variations in women's experiences and without considering context. Thus, in this study, feminist intersectionality extended the testing of Pearlin's model by drawing explicit attention to differences in the direct and indirect effects of IPV on mental health and how these were shaped by various social locations.

The Present Study

Purpose

This dissertation examined the direct impact of IPV on mental health and the mechanisms that explain the relationship between severity of IPV and women's mental health at a specific point in time, with a particular focus on testing whether and how social support and mastery mediated this relationship, in the context of selected conditions of women's lives. The specific purposes were: (i) to examine whether mastery and social support mediate the effects of IPV severity on mental health, while controlling the effects of women's social locations and (ii) to identify which aspects of the social context of women's lives account for variations in the mechanisms between IPV and mental health.

Theorizing Variations in the IPV-Resources-Mental Health Relationship

Pearlin (1989) and Pearlin and Bierman (2013) provide a model that links chronic stressors such as IPV to the strains (e.g., mental health [PTSD symptoms and depression symptoms]) resulting from these stressors. Between chronic stressors and their strains, social support and mastery are theorized as mediating and/or moderating resources. The experience of chronic stressors, associated mechanisms, and outcomes are also theorised to be shaped by the individual's locations in the social structure. The stratification of the social structure where individuals are differently located could lead to variations in the IPV- Support/Mastery-mental health relationship. Such effects and its varied mechanisms are not clearly understood because little to no attention has been given them.

The research is further informed by feminist intersectionality. Based on feminist intersectional perspectives rooted in the feminist scholarship of Crenshaw (1989) and Collins (2019), I explicitly identify the patriarchal social structure as the landscape through which women experience their social locations (i.e., age, education, intimate partner status and mothering) to shape their experiences of IPV, access to resources and their mental health. Drawing on feminist intersectionality fosters a recognition and analysis of women's mutually occurring social locations (Hesse-Biber, 2011) as they experience IPV, its effects and mechanisms to enhance the understanding of, and knowledge about, distinct societal groups (Hankivsky, 2011).

Method

An existing dataset from the longitudinal iCAN Plan 4 Safety trial (Ford-Gilboe et al., 2017) was used to explore the indirect effects of social support and mastery on the relationship between IPV severity and women's mental health based on the analysis of the baseline data (see

Figure 2 on page 41) to provide an initial understanding of these relationships. This is in response to the limited attention that has been paid to testing these mediators concurrently in relation to women's social locations.

The data were collected from a community sample of 462 Canadian women who had experienced recent IPV (i.e., in the previous 6 months) and who participated in the iCAN Plan 4 Safety trial (herein iCAN trial), a Canadian Institute of Health Research (CIHR)-funded randomized controlled trial (RCT) that tested the effectiveness of an online safety and health intervention in these women (Ford-Gilboe et al., 2017). In the iCAN trial, information was collected about IPV severity, social support, mastery, and mental health using standardized self-report measures at 4 timepoints (baseline, and 3, 6 and 12 months later) as well the selected social locations, which were captured using single questions.

Data Analysis

The preliminary analysis used SPSS version 27 to inspect data for errors, recode variables, conduct missing data analysis, calculate descriptive statistics, estimate reliability coefficients of self-report scales, and to estimate bivariate relationships between variables to be included in the main model. This preliminary analysis informed the relationships tested in the structural equation modeling (SEM) using lavaan version 0.6-9 (Rosseel, 2012) in R based on maximum likelihood (ML) estimation scheme. The models were estimated and assessed according to the guidelines stipulated by Brown (2015).

In the SEM framework, the latent structure of social support and mastery (the two latent variables in the hypothesized model (see Figure 2) was tested using confirmatory factor analysis (CFA). Model testing in SEM involved testing whether the severity of IPV affects mental health (depression and post-traumatic stress disorder [PTSD]) symptoms directly and, indirectly,

through its impact on social support and mastery, while accounting for the influence of women's relevant social locations. The selection of social location variables to include in model testing was guided by earlier analyses of these relationships and involved estimating the variations in the IPV-social support/mastery-mental health effects within relevant social categories.

Significance

This study addressed knowledge gaps related to the direct and indirect effects of IPV on mental health through social support and mastery. Further, this research substantiates these effects through an intersectional lens to determine variations in the IPV-Social Support/Mastery-Mental Health Relationship, a novel contribution to knowledge in a body of research on IPV that has largely focused on outcomes, and not more complex mechanisms that explain the effects of IPV on mental health. It is envisioned that results of this research could advance theory as it relates to our understanding of the relevance of social support and/or mastery and support the design of socially sensitive interventions to improve women's mental health in the context of IPV. This understanding is timely in light of the increased rates of both IPV and mental health problems during the COVID-19 pandemic (Brabete et al., 2021; Valera et al., 2022), and recognition of the need to understand the diversity of mechanisms that results in mental health problems.

Chapter 2

Review of Literature

An iterative literature search was conducted using web-based databases including Google Scholar, CINAHL, MEDLINE and SCOPUS. Databases were searched using keywords alone or in combination including intimate partner violence against women, mental health, mastery, social support, and feminist theories of intimate partner violence. During the literature search, the terms "stress" and "trauma" were found to be variants of intimate partner violence; therefore, "stress, trauma and mental health" was subsequently added as a search term. For a thorough review, grey literature including non-refereed journal studies, dissertations and policy reports, were included. Reviewed articles were limited to English only with an initial search of the years from 2015 to 2022. The literature included in this review was selected based on its relevance for supporting and reflecting contemporary understandings of the variables under investigation, alongside recent theoretical and empirical works from the past 10 years, but with the inclusion of classic works where these added an important or novel element to the review. The literature reviewed here provides a critical frame of reference for examining the relationships between IPV, mastery, social support, and mental health, as well as identified gaps and/or tensions. This review is organized according to three subtopics that align with the variables of interest and overall focus of the study: Intimate Partner Violence; Consequences of Intimate Partner Violence; and Indirect Effects of Intimate Partner Violence on Mental Health. These themes reflect each component in the *stress process*, as theorized by Pearlin (1989) and Pearlin & Bierman (2013).

The Stress Process

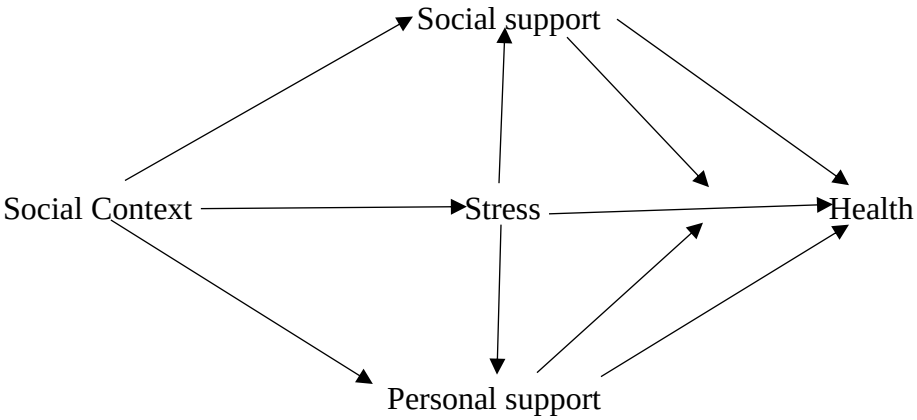
Pearlin's (1989) theorization of the stress process qualifies IPV as a chronic stressor as it encompasses concurrent patterns of victimization through acts of physical, sexual, economic

and/or psychological abuse, and controlling behaviours committed by a current or former intimate partner that often persist over time (WHO, 2021). Mechanistically, stressors, both acute and chronic, are identified to activate the use of social and personal support systems, with attention on countering adverse outcomes related to, but not limited to, mental health. Social resources (e.g., social support) and personal resources (e.g., mastery) may mediate and/or moderate the relationship between stressors and their outcomes, as fashioned out of systems of social stratifications (Pearlin & Bierman, 2013) (Figure 1). Pearlin, Menaghan, Liebermann and Mullan (1981) make the point that enduring stressors often affect one's perspective of their personal capacity to manage events, leading to a greater negative impact on mood (Pearlin, Menaghan, Liebermann & Mullan, 1981). This means intrinsic resources, such as mastery, may be more negatively affected than social support.

Overall, in the stress process model, access to social support and mastery are *defences* against adverse effects of chronic stress, including IPV, yet these resources can also be worn down by stress. This is the mediating relationship. In what follows, the literature review aligns with thematic elements of the stress process, indicating that IPV has consequences for mental health and that access to social support and mastery are key parts of the process through which mental health problems are regulated. Each section of the literature review thus illuminates the interconnections among concepts in the stress process specifically related to the IPV-Resources-Mental health relationship.

Figure 1

Elements of the Stress Process



Intimate Partner Violence

Recent theorizing suggests that there is more than one type of abusive relationship. In Johnson's (2011) conceptualization of abusive relationships, *intimate terrorism*, a severe form of IPV, is almost always perpetrated by a male against a female victim and is characterized by patterns of coercive controlling tactics, along with physical, sexual, psychological abuse, and/or fear for life or safety. In contrast, in *violent resistance*, a woman may respond with violence as a means of protecting herself, typically against an abusive male partner. Each of these types of abuse is gender asymmetrical. That is, women or men are more likely to be victims or perpetrators of violence.

Johnson also shows that violence can be symmetrical when women and men equally participate in *situational couple violence* that is marked by an absence of coercive control and when neither partner consistently is seeking power over the other (Johnson, 2011). This violence is characterized by conflicts that turn into aggression on the part of either partner (Johnson, 2011). The IPV perpetrator's desire to c*ontrol* feeds more into intimate terrorism than the other two types of IPV.

In this dissertation, IPV refers to women's experiences of violence by a partner, consistent with the concept of intimate partner terrorism. Many women have historically been positioned for victimization, and to suffer the severe consequences of male violence. It is, however, important to say that my stance is not intended to undermine the evidence of men as victims of IPV (Scott-Storey et al., 2022) or violence against women by female partners (Jaffray, 2021a) or emerging evidence of risk of IPV among Trans people (Jaffray, 2021a). I also note that I use "women experiencing IPV or with history of IPV" to denote IPV as a social problem linked to both current and former partners, often with enduring effects, but not as a characteristic of the individual woman.

In Canada, 80% of IPV cases reported to the police in 2011 involved women with men as perpetrators (Sinha, 2013). In 2016, IPV comprised nearly one-third of police-reported violence and the majority of victims were women (79%) (Burczycka & Conroy, 2018). Analyses of the Canadian 2014 General Social Survey (GSS), a population-based study, have supported gender symmetry of IPV based on an equal proportion of women (4%) and men (4%) reporting experiencing *at least one act* of physical or sexual violence from intimate partner abuse in the previous five years (Statistics Canada, 2021). However, other analyses of the GSS (Burczycka 2016) and the most recent population-based Survey of Safety in Public and Private Spaces (SSPPS) (Cotter, 2021) also show that women are more likely to experience more *severe* forms of IPV, along with more serious associated harms. For example, women are more than twice as likely as men to report being threatened with a weapon in the five years preceding the survey (Burczycka, 2016) and in the SSPPS more women (44%) than men (33%) experienced IPV in their lifetime (Cotter, 2021).

Critiques of research showing gender symmetry in rates of IPV in population surveys have focussed on limitations in conceptualizing and operationalizing IPV (see Johnson, 2006; 2011; Scott-Storey, 2011). In Canada, the items used in both the GSS and police reported victimization data tend to focus on acts of physical and/or sexual abuse, derived from the widely employed Conflict Tactics Scale (CTS), that are consistent with criminal offenses (DeKeseredy & Dragiewicz, 2009). Psychological violence (Dokkedahl et al., 2019; Ford-Gilboe et al., 2016; Cotter, 2021) is documented as more common than either physical or sexual violence and can occur prior to or in the absence of physical, sexual and economic IPV, with psychological violence causing more severe mental health impairment (Dokkedahl et al., 2019). The possibility of underestimating the need for resources to address a range of health effects resulting from psychological abuse looms due to limited recognition of this type of IPV. IPV data have limitations that could undermine the development of interventions and resources for reducing or eradicating violence. This dissertation adds to a growing analysis of IPV data operationalized with the Composite Abuse Scale (CAS), a more feminist-centred approach to the broader measurement of relevant IPV dimensions, compared to the previously mentioned CTS, and one that is consistent with the broader definition of IPV proposed by the WHO (see Ford-Gilboe et al., 2016).

Methodologically, severity of IPV has been measured in varied ways, including by estimating how often events occur (Wathen et al., 2016), the degree of assault(s) and/or injuries associated with the abuse (Johnson, 2011), and chronicity, and/or accumulation of IPV (see Davies et al., 2015). Women experiencing more severe IPV in the form of intimate terrorism, (compared to those in situational couple violence relationships) are more likely to seek institutionalized services, including domestic violence shelters, emergency healthcare services

and police departments (Johnson, 2006), especially when their lives or their children's well-being are threatened (Ford-Gilboe et al., 2015). This has been empirically supported by results of a longitudinal study of disclosure of IPV in 26 primary health care settings in Ontario in which more than half of the study participants (55%) reported experiences of severe IPV in the previous year (Wathen et al., 2016). Johnson (2011) ascertains these women may be less likely to participate in population-based studies because of the woman's concerns about experiencing recurrent abuse from an intimate partner who fears that their IPV may be reported to authorities. Thus, population surveys maybe characterized by shortcomings that contribute to selection bias or interpretations that underestimate violence severity otherwise recorded in research conducted in health care settings— the severity and profile of IPV seems to vary between clinical samples (where abuse is often more severe) and population samples (which typically include a large percentage of people experiencing conflict in the relationship).

The overall prevalence of IPV is difficult to estimate because of varied approaches to measurement and sampling, along with limited data about context-specific abusive relationships (Johnson, 2006). Further, all types of violence are thought to be under-estimated because of fear of social stigma and shame among victims, safety risks, not to mention a lack of public awareness (Garcia et al., 2018; Benoit et al., 2015). The public may be more likely to define abuse as physical and sexual violence and less likely to identify acts of psychological and financial abuse as 'abuse' because they do not result in obvious physical injuries. These insights are essential for exploring social variations that may characterize the origins and consequences of IPV.

Feminist Intersectionality: Variations in the Relationship Between IPV, Resources and Mental Health

Feminist intersectionality as an analytical lens and perspective holds together the manifestations of the social structure, including education, age, partner status and mothering. The core tenet of feminist intersectionality is that experiences, such as the impact of IPV on mental health and the mechanisms of such impact, differ because these experiences coexist with overlapping social locations of hierarchies (Crenshaw, 1989). Specifically, feminist intersectionality draws attention to the joint influence of the domains of privilege and disadvantage on experiences (Jaggar, 2015) as a means of understanding and then mitigating the production of biases in knowledge that present women's experiences as homogenous.

When used in quantitative research, drawing on feminist intersectionality typically involves designing studies that connect and quantify social hierarchies as both correlative and interactive (Rouhani, 2014). Quantitative analysis of the influence of women's social locations using (feminist) intersectionality are rare for several reasons, including difficulties operationalizing mutually constituting categories (Rouhani, 2014; Bauer 2014) and the challenges of recruiting large enough samples with sufficient diversity to allow for meaningful subgroup analysis.

From a feminist perspective, IPV is a crisis of gendered relations upheld under patriarchy (Price, 2005). Hunnicutt (2009) provides a systematic conceptualization of patriarchy that focuses on the link between gender and power: a system of societal institutions and ideological and political practices that sustain domination and control, creating inequitable positions for many women. As Hunnicutt (2009) notes, societies recording the highest levels of gender-based violence also have the strongest manifestations of masculinity sanctioned by patriarchy. This is

consistent with an understanding that the root cause of IPV and violence against women more generally, is deeply rooted in patriarchal beliefs and, specifically, the "toxic masculinities" that can arise from it. In response to the toxic masculinities underlying IPV, Jewkes, Flood and Lang (2015) propose that promoting equity-oriented gender norms is a violence prevention strategy, with this claim corroborated by emerging research evidence that tailored gender performative programs promote positive gender attitudes and behaviour (Stewart et al., 2021).

An understanding of IPV as a gendered experience is important but cannot solely explain women's risk of violence, their experiences of it, and the impacts. Rather, scholars, including feminist intersectional theorists (e.g., Crenshaw, 1989; Collins, 2019), argue that experiences, such as IPV, are complex phenomena, shaped by variations in vulnerability or exposure to stressors based on social hierarchies— societal rankings based on power or dominance exhibited by members of a group, resulting in arrangements into superiority or subordination to others (Fiske, 2010). So, for example, social phenomena including sexism, ableism, classism, racism or nationalism and colonialism create hierarchies that are reinforced by social structures. Social structures refer to forces/institutions of society and that are embedded in power relations (Collins, 2019). These institutions can sometimes perpetuate harm through what is known as structural violence: a social force that creates vulnerable social positions that do harm, in part, by impeding access to social determinants of health (SDoH) (Farmer et al., 2006).

The social determinants of health reflect structural conditions that affect women's risk and experiences of IPV in complex ways, although the underlying mechanisms are neither clearly understood nor easily quantifiable (see Boyce, 2016; Palmer et al., 2019). Such social structures include, but are not confined to, hierarchical social arrangements that reinforce gendered and discriminatory treatment of diverse groups of women (for example, older women,

Indigenous women, and immigrants)(Montesanti & Thurston, 2015). While women are at greater risk of more severe forms of IPV and its outcomes in comparison to men, this risk is not evenly distributed across all women (WHO, 2021) because women are situated throughout the social hierarchy. Specific groups of women may be at greater risk of IPV, including those with lower education, younger or older age, living with an abusive partner and those mothering a minor child. However, as Collins (2019) argues, intersectionality is not about understanding *individual identities*, but focusses on *power structures* that are based on intersecting *social positions* that confer relative advantages or disadvantages.

Social Locations Influencing Relationships Between IPV, Resources and Mental health

As the following review of the literature indicates, not only are selected social locations related to women's risk of IPV, but these conditions influence women's mental health and access to resources, including social support and mastery. Adopting an approach that examines the effects of these social locations concurrently could enhance knowledge about diverse social structural responses to IPV. In this research study, the choice of these social locations (covariates in the model) was based on a reflexive analysis of the literature that showed lack of joint analysis focused on the impacts of these conditions in relation to the simultaneous mediation of social support and mastery.

Age. Most national surveys in Canada and elsewhere found that age is inversely related to risk of IPV, with younger women being more likely to experience IPV (Capaldi et al., 2012). More specifically, population-based studies and police-reported data indicate a higher risk of IPV for Canadians under the age of 30 (Beaupré, 2015; Burczycka, 2018). However, the relationship of age and IPV is likely more complex than these data suggest. Older age is associated with greater access to social support derived from prolonged marriage or marriage-like relationships,

employment or higher education, and, hence, the development of higher mastery (Johnson et al., 2015) needed to prevent or address poor mental health emerging from IPV (Gadalla, 2009).

However, in the context of IPV, older women's greater access to more permanent unions/relationships creates bonds with abusive partners who they may feel obliged to protect from public shame. Police-reported data show that younger women, often finding themselves in dating relationships, pressed legal charges for IPV victimization more often than older women, who were more likely to be married (Burczycka, 2018). Older women may also fear seeking support from family members and friends in order to assure the perpetrator freedom from blame; thus, unreported abuse maybe traded for the perpetrator's ongoing contribution of resources to the relationship and household (Herman, 1992; Randall et al., 2017). With lower social support, older women could exhibit lower mastery and then worse mental health due to enduring IPV, a relationship worth testing empirically.

The context of older and advanced age may create disadvantaged contexts of low income from workforce retirement or cognitive or physical impairments, resulting in dependence, a form of stressor which may result in lower mastery and social support (Cairney & Krause, 2008; Gerino et al., 2018). Longitudinal studies (e.g., La Flair, Bradshaw & Campbell, 2012; Chuang et al., 2012) report inconsistent findings related to the risk of poorer mental health for different age groups in the IPV context, perhaps because of the varied impacts of other factors in addition to age. Generalizing the impact of age on IPV victimization across women's lifespans is challenging. Although population surveys included age distributions from 15 to a little over 65 (Brownell, 2015), the risk of IPV may differ between younger and older women in patriarchal societies, where women's age spectrum is accorded differential structural meanings and sexual control of women is relevant for violence against women. Simone de Beauvoir (1964) positions

older women in their menopausal stage as the “third sex” that patriarchy shows little desire to control due to less ‘reproductive usefulness’. Such patriarchal location of older women may have consequences for the under-recognition of IPV among older women and associated limited social support and mastery leading to poorer mental health that may complicate aging. Insights from these studies highlight the analytical importance of acknowledging that women’s age may be an important but under-studied factor that shapes the relationships among IPV, social support, mastery and mental health.

Education. Lower education has been found to significantly predict poorer mental health in women experiencing IPV in several studies when variables such as age and unemployment were controlled (e.g., Loxton et al., 2017; Okafor et al., 2018). Lower education may be a context that leads to limited options and less resistance to structural domination. In support of this idea, some research has suggested that advanced education increases mastery (Ross & Mirowsky, 2013). Given that mastery and social support are positively and reciprocally related, higher levels of perceived support could facilitate feelings of control, and mastery may promote the access to social support (Green & Rodgers, 2001). For example, in a Norwegian cross-sectional study, education was found to positively impact social support and mastery, which, in turn, lessened the impact and reduced the occurrence of negative life events, such as IPV (Dalgard et al., 2007). A woman’s education has been specifically related to increases in her resource/capital base, which includes cognitive and occupational skills and income status (Smith-Greenaway, 2013; Weitzman, 2018). A higher income level, in turn, has been found to strengthen the relationship between social support and mastery, thereby leading to better health status (Gadalla, 2009).

Further, educational settings could expose women to anti-IPV information through health campaigns, which may offer skills and knowledge for navigating relationships with potentially violent partners (Boyle et al., 2009). Such health campaigns may provide a strong platform for developing IPV-related mastery and social networks that may protect against poor mental health. Higher education is often a proxy for the personal ability to seek and utilize resources and the ability to develop values, skills and attitudes that promote well-being (Hahn & Truman, 2015), although women's resource capital from higher education may create a paradox by increasing risk of more severe IPV when patriarchal spaces reject feminine power and option to reduce IPV and its effects. Thus, the independent impact of education on the outcome (i.e., mental health symptoms) could be expected in relation to other variables in the model.

Intimate partner status. The status of women's relationship with their partners is often operationalized as 'marital status' in cross-sectional studies and studied as a covariate (see Rezey, 2020). Studies addressing the nature of these relationships and women's risk of IPV report findings that vary (see Rezey, 2020; Sutton & Dawson, 2018), but with substantial evidence of women's higher risk of post-separation IPV (Rezey, 2020). The inclusion of partner status, referring to whether women live with abusive partner or do not live with abusive partner, in analyses has received little attention, especially in terms of its connection to resources as mechanisms of the relationship between IPV and mental health.

Women may stay in an abusive relationship partially because of the severity of IPV and its negative mental health impacts (Zink et al., 2003): more severe IPV operates within an environment of coercive control and psychological isolation (Herman, 1992; Johnson, 2011) that may deprive women of social support and reduce mastery with subsequent effects on mental health. Living with an abusive partner is associated with many intertwined social, personal, and

mental health challenges compounded by limited options because of the context of the isolation (Anderson & Saunders, 2003; Johnson, 2011; Mosquera & Knipe, 2017). This could result in variability in the relationship between IPV, mental health and resources among women who do and do not live with their abusive partner.

Given that women who live with abusive partners share physical space with these partners, they are often at greater risk of IPV (Zink et al., 2003) compared to women who do not share the home environment, but are still at risk for violence, coercion and stalking (Ford-Gilboe et al., 2009; 2015). For women who live with their abusive partner, qualitative studies, including those by Alsaker et al. (2016) and Zeoli et al. (2013), suggested women adopt unique social support strategies for reducing IPV incidents and negative outcomes of IPV. These strategies include maintaining stable employment to strengthen financial autonomy and social relatedness; in turn, these opportunities can lead to elevated levels of personal resources, inclusive of mastery, that positively impact women's well-being (see Alsaker et al., 2016).

The effects of IPV can be long-term for some women; however, research shows that the recency of IPV may contribute to more posttraumatic stress disorder (PTSD) and depression symptoms (Paulson, 2022; Warshaw et al., 2009). Thus, regardless of whether women live with an abusive partner or not, they are likely to experience negative effects of recent IPV. Whether women's access to resources differs based on whether they live with their abusive partner or not, and the effects of these differences on the mental health impacts of IPV is worth testing.

Mothering. Being younger is closely linked to childbearing, which may transition women from adolescence into adulthood, culminating in a mothering identity that may increase the risk of IPV (Burczycka, 2018). In 2011, Statistics Canada reported the average age at first birth (or primiparity) as 28.5 years (Statistics Canada, 2018). Childcare disagreements are linked

to IPV (Johnson et al., 2015) and/or relationship adjustment (Johnson et al., 2015), along with children accounting for some permanent bonds with partners. Research has identified motherhood as strongly tied to women's higher risk, severity, injury, duration and frequency of IPV, including decisions to leave or return to an abusive relationship, after controlling for duration of partnership and age (Brownridge, 2006; Vatnar & Bjørkly, 2010).

Women's motherhood has been found to increase risk of IPV even in the postseparation period (Brownridge, 2006; Vatnar & Bjørkly, 2010). In a community-based study of 200 married and separated mothers (whose oldest child was 12 years old or younger) conducted in Alberta, Tutty et al (2009) found that 25% of women reported experiencing regular physical beatings and 45% experienced rape at least once. In contrast, in another longitudinal study (La Flair, Bradshaw & Campbell, 2012), women's mothering was not associated with depressive symptoms linked to IPV when effects of age and marital status were controlled; however, PTSD symptoms were not considered in this analysis.

Studies have documented that the harmful effects of IPV, including PTSD and depression, can disrupt mothering, with recommendations for extensive investigation of resources needed to support mothers in abusive relationships (Ateah et al., 2019; Austin et al., 2019). Mothering in an abusive environment is thought to be a complex issue because it often co-occurs with adversities such as poor mental health and limited resources and social support (Chiesa et al, 2018; Lapierre, 2008), legal requirements for mothers to maintain contact with abusive partners as part of parenting orders (Morton et al., 2021), and personal and social judgements about mothering (Kawash, 2011). Social support as a critical resource for mothering has been highlighted in two reviews (e.g., Austin et al., 2019; Chiesa et al, 2018) that identified

questions about how social support may intersect with other resources such as mastery to improve mothers' mental health in IPV contexts.

Given that qualitative studies show that mothers use social support more so when concerned for the welfare of their children than for their own safety (Dufort et al., 2013; Randell et al., 2011; Zink et al., 2003), mothers may be able to benefit from the support to mitigate IPV and its impacts; improvements in social support may lead to improvements in mastery and, subsequently to improved mental health in order to promote safe mothering. Thus, the relationships between IPV, social support, mastery and mental health are expected to vary between women with children and those without children. This comparison is innovative as it is different from the dominant comparisons between mothers who experience IPV and mothers who do not experience IPV, which according to Scrafford et al (2022) heavily grounds the deficit narrative of mothering in IPV environment and overshadows the strengths of mothers experiencing IPV.

Summary

Overall, prior studies have established the importance of controlling the impact of age, education, partner status and mothering on women's mental health. However, existing studies have not considered the joint impact of these covariates (age, education, partner status and mothering) in relation to mechanisms (social support and mastery) that explain the relationship between IPV severity and women's mental health. The research reviewed supports associations between individual social locations and IPV, social support, mastery, and/or mental health, yet their concurrent impacts are not well understood. By considering these covariates all together, it may be possible to capture which covariates are relevant in understanding the mechanisms explaining the mental health effects of IPV. These relationships that may be important from

feminist intersectional perspective in illuminating variations in responses to IPV and access to resources.

Consequences of Intimate Partner Violence

Inferring from the work of Pearlin et al (1981), Pearlin (1989) and Pearlin and Bierman, 2013), reactions to IPV are nested within and shaped by social structures, implying that social disadvantages confer greater vulnerability to IPV while concurrently reducing access to resources, such as social support and mastery. Meanwhile, a socially advantageous position is associated with lower risk of IPV and more access to resources (see Pearlin, 1989; Pearlin & Bierman, 2013); however, resources can be reduced when they are needed most during IPV (see Aneshensel & Avison, 2015). The effects of IPV are disproportionately distributed based on resources (both social and psychological) whose parallel indirect effects are a question that remains for empirical IPV research.

Literature reviews layout the processes of impaired physiological functioning, including hypothalamic-pituitary-adrenocortical (HPA) axis malfunction, which links IPV and related physical and traumatic injuries to a multitude of disease outcomes (Black, 2011; Warshaw et al., 2009; Rosen, Ortiz & Nemeroff, 2020). More specifically, the aftermath of IPV is characterized by physiological mechanisms underlying mental health responses such as posttraumatic stress symptoms commonly comorbid with depression; preexisting depression may increase vulnerability to PTSD symptoms in the aftermath of trauma, or the presence of PTSD following traumatic incident may increase the risk for first onset of depression (Keyes & Lopez, 2009; Herman, 1992). The underlying physiological function through neurobiological regulation of mental health is common to mental disorders such as PTSD and depression but these disorders have distinct etiologies which gives them unique expressions (Keyes & Lopez, 2009).

Further, mental health problems threaten the maintenance of physical health (Rosen, Ortiz & Nemeroff, 2020). This body of evidence suggests mental health problems emerging from IPV could also be an important pathway through which IPV affects physical health (see Alhalal et al., 2018; Bisson et al., 2015). This is illuminated, for example, in a study about the interconnection between mental and physical health among 505 Israeli women in domestic violence shelters, which concluded that PTSD is a significant factor for self-rated health (Dekel, Shaked, Ben-Porat & Itzhaky, 2020). Thus, a clear understanding of the processes by which IPV leads to poorer mental health is needed to develop interventions designed to improve mental health and, potentially, reduce or prevent physical health problems.

Mental Health Effects of IPV

According to the WHO, mental health is a "state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to [the] community" (2014, para 1). The link between mental health and IPV is cyclical, where poorer mental health is both a consequence and a risk factor for IPV (Burczycka, 2018). When mental health decline occurs because of IPV, mental disorders increase women's risk for ongoing abuse (Devries et al., 2013). Poorer mental health reduces women's ability to seek opportunities and options for ending or recovering from abuse (Taft et al., 2016). Continuing to experience IPV may result in reduced social support and mastery (see Aneshensel & Avison, 2015). Mental health problems contribute to economic burdens, along with increased healthcare and social costs (Canadian Mental Health Association [CMHA], 2022). For example, mental health problems now cost the Canadian economy $51 billion per year (CMHA, 2022). However, it is unclear what portion of this cost is attributable to IPV-related mental health problems.

In women experiencing IPV, depression and PTSD are the most prevalent mental health problems and are associated with variations in social locations (Bisson et al., 2015; Jonker et al., 2019). Because PTSD commonly co-occurs with depression (Devries et al., 2013), their comorbidity has been conceptualized as a direct effect of IPV, and both conditions are indirectly related to IPV through IPV's impact on social support and mastery. This study focuses on symptom-based criteria that are proxies for a probable diagnosis of depression and/or PTSD—an acceptable, cost-effective approach to obtaining a provisional diagnosis that reflects the clinical diagnosis prescribed by the Diagnostic and Statistical Manual of Mental Disorders or the International Classification of Diseases (ICD) (Steel et al., 2011). The dissertation also uses continuous scores to reflect frequency or severity of PTSD symptoms or depression symptoms and that have potential to capture a wide range of mental health experiences in women with histories of IPV (in comparison to diagnostic approaches which results in binary variables).

Post-Traumatic Stress Disorder Symptoms and IPV. Post-traumatic stress disorder symptoms are responses elicited following exposure to or experience of traumatic events, such as intimate partner violence (American Psychiatric Association [APA], 2022). The *Diagnostic and Statistical Manual of Mental Disorders* (DSM) identifies core criteria for the diagnosis of PTSD. In the DSM-V-TR, a diagnosis of PTSD must include four categories of symptom clusters: a) *intrusive* symptoms, including flashbacks or unwanted memories and dreams of the event; b) *avoidance*, consisting of persistent avoidance of intrinsic and extrinsic reminders of the events; c) *negative alterations in cognitions and mood* involve general responses of detachment from the event; and d) *alterations in arousal and reactivity* comprises symptoms of an increased startle reflex, aggression, and difficulty falling and staying asleep (APA, 2013). The DSM-V-TR diagnostic criteria focus on symptom combinations lasting for one month or more, accompanied

by a threat to health and social integrity (APA, 2013). In relation to IPV, the reliability and validity of DSM-V-TR diagnostic criteria for assessing PTSD, also known as “simple” (Pill, Day, & Mildred, 2017) or “classic” (Maercker, 2021) PTSD should be considered.

In the DSM-V-TR approach, diagnosis of PTSD is frequently linked to single incidents of trauma, not ongoing severe multiple traumas, setting off prolonged and sustained neurobiological reactions consistent with complex PTSD (International Classification of Diseases [ICD], 2018). Repeated victimization as often seen in IPV, is more likely to elicit enduring or chronic and intense PTSD, known as *complex post-traumatic stress disorder* (complex PTSD), a condition whose symptoms (e.g., emotion dysregulation, dissociation, somatic distress, and identity and relational problems) can be experienced in addition to classic PTSD; this leads to more intense dissociative symptoms than experiencing PTSD alone (Herman, 1992).

Moreover, the symptom cluster for Disorders of Extreme Stress, Not Otherwise Specified (DESNOS) is understood to closely represent complex PTSD but is not the same as complex PTSD in their manifestations (Mooren & Stofsel, 2015). DESNOS was removed from DSM after having been featured in DSM-IV, as a result of being tested in too few studies that produced inconsistent results (Maercker, 2021); thus, its usefulness for research is difficult to determine. Further, the symptoms of complex PTSD are insufficiently explained by the DSM-V-TR diagnostic criteria because they do not reflect the relational and chronic complexity of IPV (Herman, 1992). A PTSD diagnosis that is uninformed by complex PTSD may underestimate the support needed by women who have experienced IPV. However, self-report measures of PTSD, including the one used in this dissertation, tend to focus on symptoms of classic PTSD and not complex PTSD. While complex PTSD would more appropriately reflect responses to IPV, approaches to its measurement are emerging but still practically limited for use in research.

In the 2014 GSS, the prevalence of severe PTSD symptoms among Canadians experiencing IPV was 22% in women and 9% in men (Burczycka, 2016), but these rates could be higher had the study measured complex PTSD in combination with PTSD instead of simple PTSD alone. IPV-related PTSD symptoms are likely gendered because a pattern of severe physical, sexual, and psychological violence disproportionately affects women, as elaborated throughout this dissertation. Several reviews, mostly including cross-sectional studies (Lagdon, Armour & Stringer, 2014; Sylaska & Edwards, 2014), have shown that severe, repeated patterns of IPV increase the risk of severe PTSD, and that these symptoms were reduced by social support and perceptions of control, but intensified by being female and having experienced abuse in childhood. A systematic review of 47 longitudinal studies pertaining to the IPV-mental health relationship, including PTSD symptoms, documented patterns of change in the relationship between IPV and PTSD symptoms; specifically, this relationship was strongest when the IPV was experienced close to or during the perinatal period than when considering lifetime IPV. Of note, physical, sexual, and psychological IPV showed independent associations with PTSD symptoms (Paulson, 2020).

Other studies reinforce the important role of resources of various types in reducing PTSD symptoms resulting from IPV in women. For example, it was empowerment, not resource acquisition, manifested as mastery and self-esteem that reduced the intensity of PTSD symptoms at low and moderate levels of IPV among 227 women (Perez, Johnson & Wright, 2012). In women who have experienced IPV, their resources, identified as access to food, shelter, childcare, transportation, health, finances, and time for self, reduced symptoms of PTSD when the effects of age, income, psychological abuse and sexual coercion were accounted for (Weaver, Kelton & Riebel, 2021).

Recovery from PTSD symptoms is promoted by access to resources. In one study, PTSD symptoms were significantly reduced over a 6-month follow-up in a subset of women (3.3%) who reported less severe baseline IPV-related PTSD, fewer losses of personal and social resources, and who were less likely to reunite with their abuser after leaving a shelter compared to women (22.4%) with chronic PTSD (sustained intensity of PTSD symptoms for six months) (Johnson & Zlotnick, 2012). Longitudinal studies that documented patterns of change in the relationship between IPV and PTSD symptoms also found patterns of improvement in the PTSD symptoms over time (e.g., Ford-Gilboe et al., 2020; Hegarty et al., 2020), but rates of PTSD remained substantially higher among women with histories of IPV, compared to women in the general population, 4-7 years post separation (Ford-Gilboe et al., 2022) or post intervention, compared to those who did not receive intervention (Johnson et al., 2020). Understanding how immediate and long-term access to social support and mastery are implicated in the relationship between ongoing IPV and PTSD has the potential to expand our current understanding about the complex mechanisms behind the health effects of IPV.

What is missing from the literature is an understanding of the simultaneous mechanisms/indirect effects of social support and mastery that link IPV and PTSD. Examining the longitudinal indirect effects between IPV and PTSD addresses the IPV- PTSD bidirectional confusion found in cross-sectional studies. Cross-sectional studies examining the impact of past IPV on PTSD symptoms may also be affected by recall bias whereas a longitudinal analysis could enhance our understanding of the ongoing fluidity and duration of IPV and its effects. In this dissertation, studying these mechanisms cross-sectionally could also be foundational to theoretical understanding in the IPV field. For an analysis that is more reflective of women's contextual lives, the dissertation aimed to account for the influence of selected social locations as

age, education, intimate partner status and mothering, which have not been considered together with the concurrent mediating effects of social support and mastery between IPV and PTSD.

Depressive Symptoms and IPV. Depressive symptoms are also a common outcome of IPV (Devries et al., 2013). These symptoms have been acknowledged in the DSM since DSM-I (APA, 1952) and each new version of the DSM has included modified definitions of depressive symptoms to accommodate new evidence, theories, and methodological perspectives. The DSM-V-TR (APA, 2022) describes depression as a psychiatric disorder, with diagnostic criteria including depressive episodes, featuring sadness, loss of interest, anxiety, guilt, and hopelessness. Diagnosis is possible when symptoms last for at least two weeks, and one of five symptoms is either depressed mood or loss of interest or pleasure (APA, 2022).

Depression and depressive symptoms are a frequently reported mental health problem that is twice as common in women as in men (WHO, 2014). In Canada, about 11% of men and 16% of women are at risk of experiencing depression in their lifetime (Health Canada, 2022). The higher burden of depressive symptoms in women may be partly due to women's greater risk of IPV. A meta-analysis of 16 longitudinal studies with 36,163 participants concluded that IPV is a significant causative factor for depressive symptoms among women, even when relevant control variables such as age and social economic status are accounted for (Devries et al., 2013), a finding that links depression to women's social statuses in the IPV context. While depressive symptoms have been found to decline over time whether women experienced IPV or not, women experiencing IPV recorded higher depressive symptoms over a 2-year period than women who did not experience IPV (La Flair, Bradshaw & Campbell, 2012). Similarly, rates of depression were still higher for women 4-7 years post separation from an abusive partner, compared to

women in the general population (Ford-Gilboe et al., 2022). This means IPV increases the intensity of depression symptoms.

In fact, evidence is growing that depressive symptoms are a consequence of *any* type of IPV, including emotional or psychological (Lagdon, Armour & Stringer, 2014), economic (Gibbs et al., 2018, in South Africa), physical (Delara, 2016, in Canada), as well as sexual IPV (Devries et al., 2013) and controlling behaviour (Lövestad et al., 2017). There is also growing evidence that the association between IPV and depression is complex: findings of Godoy-Ruiz et al.'s (2015) qualitative study of Spanish-speaking Latin American women in Toronto supports this contention. Although participants perceived a powerful link between IPV and depression, mental health problems were shaped by many factors, including lower social support because of immigration status and the time in Canada in the context of *healthy immigrant effect,* thought to interact with acculturation stress, poverty, and other factors.

Furthermore, factors that have been found to strengthen the relationship between IPV and depression have included younger age (Rich et al., 2010), unemployment (Dougé et al., 2014), poor social support (Chuang et al., 2012) and witnessing parental IPV (Iverson, et al., 2013). However, findings are inconsistent for reductions in depressive symptoms over time though, depending on whether the samples are derived from community, population surveys or help-providing agencies (Chuang et al., 2012), given that these samples differ substantially in social locations related to their settings. Studies that consider a wider range of social locations (age, education, partner status and mothering) and main predictors concurrently, including pathways for mediation, moderation, and interaction, are needed to more fully understand the complex association of IPV and depression symptoms.

Comorbidity of PTSD and Depressive Symptoms

A significant body of research, including both cross-sectional and longitudinal studies, has suggested that depression has a comorbid relationship with PTSD (Armenta et al., 2019). Elklit et al. (2010) suggests that this comorbidity is due, in part, to overlap in symptoms and diagnostic criteria for depression and PTSD. The neurobiological effects of traumatic stress are common to mental disorders inclusive of PTSD and depression, hence, similar, but not the same overt manifestations (Keyes & Lopez, 2009; North, Suris, Davis & Smith, 2009). For example, the symptom of *emotion dysregulation* is common to many mental health disorders including the classic PTSD and depression (APA 2022). Post traumatic stress is a common immediate reaction to IPV and often predisposes individuals to depression—this combination is linked to more symptoms or symptom severity (Shah et al., 2012). As well, symptom severity can be reinforced by and co-occur with known risk factors of IPV, namely younger age, lower education, mothering, and living with an abusive partner, as already discussed. Studies examining the comorbidity of PTSD and depressive symptoms include a systematic review of 75 international cross-sectional studies conducted in "developing" and "developed" societies, where the results indicated 50% of the studies reviewed reported a co-occurrence of depression and PTSD in women who ever reported IPV (Dillon et al., 2013). In Canada, Davies et al.'s (2015) study reported both symptoms of depression and PTSD in women who had recently left an abusive relationship (up to three years before the study); additionally, the severity of mental health symptoms was significantly related to the severity, chronicity, and history of abuse. However, although abuse was ongoing for some women, this study was limited to women who had recently separated from an abusive partner.

This research used cross-sectional data to determine the impacts of IPV on PTSD symptoms and depression symptoms in a sample of women experiencing recent IPV from a partner, while attempting to control for whether women were either living with or not living with the partner (i.e., had never lived with or had separated from), whether they were mothering minor children, as well as their ages and education. Given that PTSD symptoms and depression symptoms occur together as manifestation of traumatic stress, their potential comorbidity was considered in the analytical approach. This multi-faceted analytic approach may help inform the development of tailored interventions for women, particularly for how and why these covariates are related to IPV's impact on mental health at a point in time. Reducing or preventing depression and PTSD symptomatology for women experiencing IPV could minimize the risk of major depression and PTSD associated with more devastating mental and physical health problems (Kleim & Kroger, 2013), and potentially lead to a reduction in IPV. These problems are significantly reduced by resources, including social support and mastery, that have not been analyzed together as mechanisms in longitudinal or cross-sectional studies, especially for mastery. The boundaries of the IPV literature would be expanded by understanding whether social support and mastery have synergistic and mechanistic effects on the relationships between IPV and mental health outcomes. This understanding could provide for more explanatory frameworks useful in guiding the design of interventions that consider the complexity of the IPV-mental health relationship. As a foundational analysis, this study considered the concurrent mechanistic effects of social support and mastery in explaining the relationship between IPV and mental health (PTSD and depression).

Indirect Effects of Intimate Partner Violence on Mental Health

Pearlin (1989; 1999) proposes that chronic stressors, such as IPV, activate the use of social and personal resources to counter adverse outcomes, including mental health problems, yet resources may also be eroded by stressors. As mentioned earlier, these resources are embedded in our systems of stratification/social locations resulting in unequal distribution of resources linked to variations in social responses to IPV. Social support and mastery respectively are examples of social and personal resources. In general, these resources seem to both *mediate* the relationship between IPV and health outcomes (i.e., they are links in the process by which IPV transmits its effects to health) and *moderate* these effects (such that the magnitude of the effects of IPV on health depends on the level of social support and mastery) (Pearlin, 1989; Pearlin & Bierman, 2013).

Mastery, a response to stressful circumstances, which emphasizes a sense of control over life's events, is an intrinsic cognitive resource that could also intersect with extrinsic support in the context of coping with IPV, since women may use external help available to them as they encounter limits to own adaptational abilities, including mastery (Pearlin, 1989; Pearlin & Bierman, 2013; Sarason & Sarason, 2013; Younger, 1992). Support may be used to compensate for having less control over external stressors, such that mastery could interact with social support to impact mental health in women experiencing IPV.

Social Support, IPV and Mental Health

Social support includes a variety of resources - emotional (expressions of empathy, love, trust and caring), instrumental (tangible aid and service), informational (advice, suggestions, and information) and appraisal (information that is useful for self-evaluation) - that are provided by others, including institutions (Taylor, 2011). For traumatic stressors such as IPV, the presence of

social support has been associated with positive adjustment toward well-being, including mental health (Taylor, 2011). This adjustment has also been explained by behavioral, psychological, and biological processes (Uchino, 2006) whose interactions are the focus of growing empirical documentation.

Attention to the intersection of mastery and social support, in addition to their mediating and moderating roles in the IPV context, reflects growing recognition of the complexity of relationship among resources, including that between social support and mastery. For example, Lakey and Cohen (2000) suggests social support arises from context-specific relationships that are characterized by low social conflict, companionship, intimacy, etc., which may underly the idea that relationships with family members and friends allow for nurturing of trust that may lessen the complexity of accessing support in stigmatizing circumstances created by IPV, for example.

Within scholarship on social support, considerable attention has been given to the concept of *perceived social support* –the perception of the availability of resources, including emotional or practical assistance from people in one's social network (Taylor, 2011). Evidence of the direct and confounding effects of social support are ubiquitous in the literature. Recent systematic reviews (e.g., Bacchus et al., 2018; Capaldi et al., 2012) and longitudinal studies (Beeble et al., 2009; Chuang et al., 2012) conclude that social support offers direct protection for physical and mental health in the context of IPV. These studies also provide support for the indirect effects of social support as one of several confounding variables inclusive of age, mastery and education that account for the main effects of IPV on health outcomes. However, these reviews do not explicitly acknowledge the specific intermediary (mediating and moderating) effects of (perceived) social support.

Studies have examined social support as a mediator of the relationship between IPV and mental health in the context of differences in women's demographic characteristics, although the analysis of differences was not informed by feminist intersectional theory. Results of an early cross-sectional study of 191 women who had experienced physical IPV suggested that those who were less likely to have health insurance, less likely to be white, and who reported less social or emotional support, also reported experiencing more severe IPV and consequent poorer mental and physical health (Coker et al., 2003). Further, more severe physical abuse was directly associated with less emotional support, and with poorer physical and mental health (Coker et al., 2003). In Jaradat's (2018) cross-sectional study of 250 women who had histories of IPV and who participated in wave 5 of the Women's Health Effects Study (WHES) (Ford-Gilboe et al., 2009), the mediating effect of perceived social support on the relationships between IPV severity and quality of life was found to be almost twice that of mastery. While these results are interesting, it may be too early to reach conclusion about the relative strength of mastery and social support in explaining the effects of IPV on mental health given that so few studies have examined mastery as a mediator.

Using baseline data from the same study as Jaradat (2018), Guruge et al. (2012) tested the effects of ongoing and recent IPV severity on the mental health of 309 Canadian women who no longer lived with an abusive partner. Results of this study showed that more severe past IPV had a direct negative effect on women's health; however, while both social support and social conflict were directly associated with mental health, only social conflict was found to significantly mediate the relationships between IPV severity and health. Furthermore, social conflict was found to moderate the relationship between social support and health, such that this relationship was stronger in the presence of lower conflict. Whether mastery attenuates the

mediating effects of social support on the relationship between IPV and mental health requires further study.

To date, cross-sectional studies have analyzed the mediating effects of social support in the IPV context, together with other constructs, as a way of delineating their inter-related complexity. However, theorists infer that social support is a crucial factor for mediating, moderating, and directly improving the health outcomes for those who experience chronic stressors as IPV, as shaped by the boundaries of structural conditions (Pearlin & Bierman, 2013). An empirical review suggested bidirectionality between IPV, mental health and resources (Gerino et al., 2018). Cross-sectional studies cannot determine whether lower social support increases risk of IPV, leading to mental health problems or whether the reverse is true (i.e., IPV reduces access to support). Taking into consideration that the literature has fundamental gaps that is needed to be filled, this study considered social support and mastery as indirect effects of IPV on mental health, while accounting for the overlapping influence of the above-named social locations at a moment in time.

Mastery, Social Support, IPV and Mental Health

Mastery "is a human response to difficult or stressful circumstances in which competency, control, and dominion have been gained over the experience of stress" (Younger, 1992, p.1). By this definition, mastery seems to be an outcome of reality-oriented adjustment to stress. For Pearlin and Schooler (1978), mastery refers to a sense of control over life circumstances, while Burger (1989) defined mastery as perceptions about an ability to alter events in one's favour. These understandings of mastery assume that mastery can be achieved through some active process. For example, seeking advice (support) may be an effort to improve mastery over life circumstances, because such advice can provide information for managing or

avoiding the same or similar negative event. As explained above, since mastery and social support are documented to influence each other (positive correlation), such findings suggest that their relationship is not unidirectional; cross-sectional studies have shown their independent predictive significance for health outcomes (Cantwell, Muldoon & Gallagher, 2014). Research examining interactions between predictors of well-being has underscored the synergistic relationship of social support and mastery in improving health (Cantwell, Muldoon & Gallagher, 2014). Thus, it is possible that social support can be used to compensate for low levels of mastery, given that social support may be sought when personal control efforts have reached their limits.

Few health studies have empirically examined the interaction of mastery and social support. For example, Hasson-Ohayon et al. (2018) tested an interaction effect between social support and mastery on the parental stress of mothers with "serious mental illness" (SMI), defined as a diagnosis that meets the DSM-IV-R criteria for mental health problem resulting in severe functional impairment. In this cross-sectional study of 120 mothers, including 60 mothers with a diagnosis of SMI and 60 mothers with no history of SMI, those with SMI were older, had completed less education and a greater proportion were single. Furthermore, mastery and its interaction with social support were negatively associated to parental distress, while social support was not significantly associated with parental distress on its own. In the same study, women with high mastery and who reported high levels of social support reported lower levels of parental stress. Hasson-Ohayon et al. (2018) concluded that higher social support seems beneficial only for women with higher mastery, not lower mastery, suggesting the possibility of an interaction between these constructs that may work only in equally high amounts synergistically rather than in isolation to improve health. However, the cross-sectional design of

this does not permit causal interpretations to be made: parental stress may have impacted mastery negatively which led to the use of social support to then help return mastery to some acceptable levels (i.e., the relationships could operate in reverse). The study did not also consider the interaction as a mechanism to explain the focal relationships and neither social support or mastery were used as mediators/moderators.

In terms of IPV, early theorists (e.g., Herman, 1992) state that the overwhelming nature of violence and the victim's reactions of helplessness to the violence disintegrate social connections to the point of loss of control over what matters in the environment, a situation reinforced by disadvantaged social contexts that some women also face. Recovery includes restoration of these connections to return the lost sense of control. Corroboratively, qualitative studies (e.g., Bentley, 2017; Pratt-Eriksson, Bergbom & Lyckhage, 2014; Scrafford et al., 2022) suggest the importance of women's sense of control in moving on with their lives in the context of support. These understandings converge with some scholarship suggesting that mastery could interact with social support to explain the relationship between IPV and mental health (see Sarason & Sarason, 2013), along with their theorized roles as moderators and mediators, mechanisms not well studied for IPV.

A few studies have shown empirically direct negative effects of IPV on women's mastery and social support (Jaradat, 2018; Skomorovsky & LeBlanc, 2017). Both females and males who have reported higher mastery and perceived social support also experienced lower psychological distress (Skomorovsky & LeBlanc, 2017). Further, results of a parallel mediation analysis by Jaradat (2018) showed that more severe IPV led to lower levels of mastery and social support, leading to poorer quality of life among women who had experienced IPV. Thus, although this study supports the mediating role of these resources on the relationship between IPV and quality

of life, these results may not generalize over time given the limitations of cross-sectional studies to address causation as already mentioned above. Further, the outcome studied was not mental health and moderating roles of social support and mastery as proposed by Pearlin (1989), and their interactions, were not examined. The results of this study extended theoretical understanding by addressing a basic gap in the literature regarding the indirect effects of mastery and social support on quality of life in the context of IPV at a point in time, yet additional research is needed to examine the complexity of relationships between external and internal resources. In the context of impacts of IPV on mental health, studies are specifically needed to explore the extent to which mastery moderates (mediated) social support, in addition to the independent roles of social support and mastery as mediators and moderators of the relationship between IPV and mental health.

Summary of the Review of Literature

The literature reviewed in this chapter emphasizes IPV as a gendered issue exposing many Canadian women to the risk of poor mental health. Although most of the evidence about mechanisms underlying the IPV-mental health relationship has been derived cross-sectionally and may not generalize over time, the mechanisms have predominantly identified social support as a mediator, whereas mastery's mechanistic roles are poorly understood, not to mention mastery's interaction with social support. Although gendered manifestations of structural hierarchies (age, education, mothering, and partner status) shape variations in women's experiences of IPV, mental health and access to resources, these factors have not been considered all together using a feminist intersectional lens.

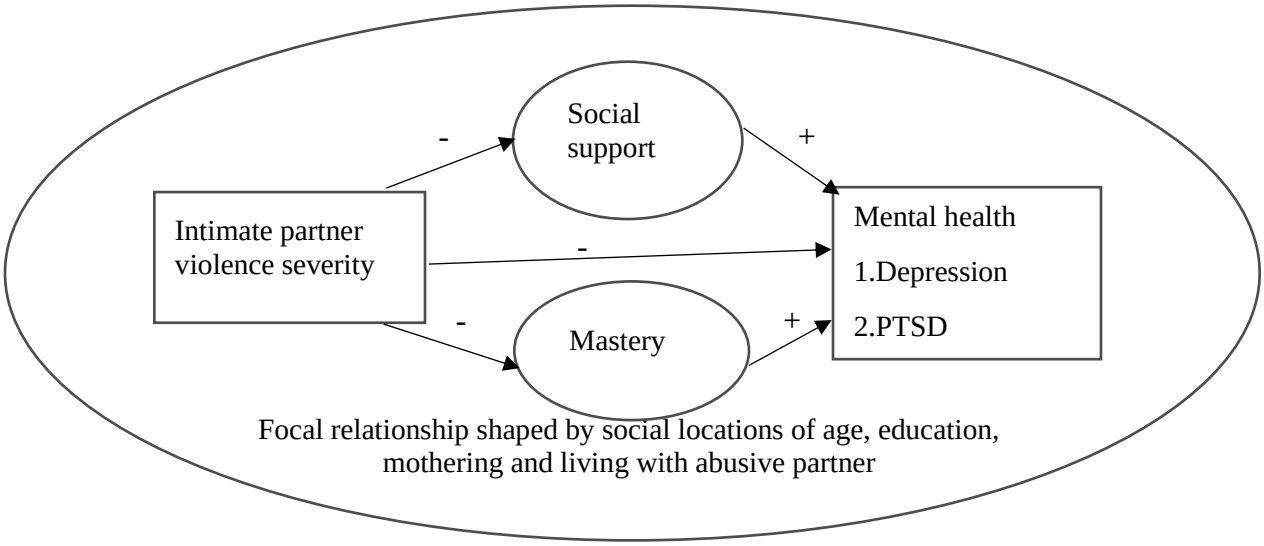
As described in Chapter 3, this dissertation attempted to incorporate these social characteristics concurrently into analyses as a means of accounting for differences in the process

that links IPV to women's mental health through social support and mastery at a single point in time. Despite concerns that cross-sectional analyses may not adequately address the possibility of bidirectionality that may undermine the validity of cross-sectional findings, this dissertation takes steps to rectify some limitations of the literature including generating knowledge about whether social support and mastery could simultaneously mediate the effects of IPV on mental health. This baseline understanding could be important for modelling these complex relationships longitudinally.

Based on the literature review guided by the elements of the stress process proposed by Pearlin (1989) and Pearlin and Bierman (2013), the theoretical model of hypothesized relationships that informs this study (Figure 2) includes severity of IPV, social support, mastery, and mental health, and attempts to account for the influence of contextual factors (age, education, partner relationships status and mothering). In the model, IPV severity is proposed to exert direct negative effects on mental health (PTSD, Depression) and indirect effects through social support and mastery. Selected social conditions are proposed to shape relationships within the model. According to this model, the primary purpose of this study was to test whether social support and mastery mediate the direct relationship between IPV and mental health, accounting for the intersection of age, education, whether women were living with the abusive partner and mothering. Specific hypotheses are on page 48.

Figure 2

A Structural Model of Hypothesized Relationships Between IPV Severity, Social Support, Mastery, and Mental Health, With Selected Co-Variates.



Chapter 3

Methodology and Methods

Chapter 3 first covers feminist intersectionality, the theoretical approach that informed the analysis and interpretation of data. The theoretical approach is organized thematically to highlight early feminist focus on gender and then shifts to intersectionality to acknowledge interactions between gender and other social locations that powerfully define the experience and response to events in life. This theoretical orientation closes with feminist research principles, which are the foundations of the theoretical orientation. Next, I turned to the Methods, to describe the study design, sample, study procedures and measurement tools as well as approach to data analysis.

Theoretical Orientation

Although the studies reviewed in Chapter 2 provide support for relationships between focal variables and characteristics of social hierarchies, feminist intersectionality was not explicitly used in these studies to inform analyses of factors that shape variations in IPV and its impacts. The lack of a feminist intersectional analysis overlooks the underlying contextual landscape for the relationships, including varied meanings attached to womanhood and its characteristics (e.g., age, education, partner status and mothering) in relation to power. A feminist intersectional perspective was used in this study to consider the multi-layered inequities underpinned by stereotypes shaping women's experiences of IPV, their access to resources, and their mental health (see Rouhani, 2014; Bauer, 2014). It allowed me to pay attention to the centrality of gender politics and power relations in women's embodied experiences of IPV, and to challenge stereotypical constructions and perceptions that limit social responsiveness to IPV (see Hankivsky, 2014; Rouhani, 2014). Given the diversity of feminist perspectives on IPV, in

what follows, I describe key ideas informing this work under "early" and "intersectional" feminist scholarship that have informed this study and note that the division is more thematic than chronological. These core ideas of feminist intersectionality scholarship provide a foundation for feminist research principles and the approach to analysis used for the study.

Early Feminist Scholarship

Early feminist scholarship focusses on the idea that women are sexed as females and gendered as women (Anderson, 1997, 2009, 2013). Although "sex" and "gender" may complement each other, sex (a biological construct) can be distinguished from gender, a social construct that denotes masculine and feminine characteristics based on the sociocultural interpretation of sex (Mikkola, 2017). Such societal interpretations traditionally recognize that masculinity and femininity dictate the identities of men and women, respectively. These identities are derived from sociocultural ideologies, norms, and practices that are implicitly or explicitly political (Butler, 2006). Masculinity and femininity are further socially constructed through ideological adaptation to gender norms and stereotypes (Cameron, 2005). Masculinity is socially constructed as emotionally deficient, strong, and aggressive while femininity is socially constructed as emotional, passive, and obedient (Mikkola, 2017).

In early feminist scholarship, gender is the primary vantage point for understanding IPV, as the social construction of gender (re)enforces the production and perpetration of IPV. Thus, IPV is understood as a symptomatic expression of masculine aggression, strength, and emotional deficiency, and it reinforces gendered relations (Kimmel & Aronson, 2008; Kimmel, 2011). Williamson (2010) points out that the social expectations of feminine roles, such as women's obedience, helps to maintain a pattern of abuse over a long period. IPV can also be understood through the framework of gender performance where individuals assert masculinity or femininity

according to normative expectations (Butler, 2006). Thus, the perpetration of IPV involves the *performance* of gender.

As Foucault theorized, power is imbedded in all social relations (Allen, 2009); early feminist scholars' discussions of power are central to understanding IPV. However, feminist scholars have taken up wide-ranging perspectives on power in IPV. For Charles and Hughes-Freeland (2013), power in relation to male-initiated violence refers to uni-directional male domination and control, male authority, and superiority. For other theorists (e.g., Hearn, 2012; MacKinnon, 2006; Price, 2005), power and gender are mutually inclusive, implying that assertions about manhood drive men's expressions of power. Thus, men are thought to use violence to restore power which they perceive as lost or inadequately exercised (DeKeseredy & Dragiewicz, 2012). It is interesting to observe that men who avoid asserting their masculinity through violence are labeled feminine, and women committing IPV are seen as exhibiting masculine traits. Masculinity is, therefore, premised on power or supremacy. As Young (1990) argues, this represents patriarchy operating from domination and control. Thus, in the study, I understand IPV as a means through which women's inequitable vulnerabilities are exposed.

Feminist Intersectional Scholarship

Recent feminist scholarship draws on the nature of societal inequity as the primary point of departure. More specifically, it introduces the concept of intersectionality to critique modernist themes and to illustrate how multiple oppressions are experienced simultaneously (Crenshaw, 1989). According to Crenshaw (1989), attention to one category of difference is a distorted and inaccurate account of lived experience; an intersectional lens promotes an understanding of "inequities [as] never the result of single, distinct factors. Rather, they are the outcome of intersections of different social locations, power relations and experiences" (Hankivsky, 2014,

pg. 2). Lived experiences or realities are shaped by overlapping categories, and intersectionality is a process of unveiling meanings attached to categories, given that meanings are not predetermined. Power structures/institutions, social locations, and processes are co-constituting and related; these relationships change over time and are unique to geographical settings (Hankivsky, 2014).

Feminist intersectional approaches integrate questions of gender with other social and political markers of identity (Hesse-Biber, 2011), including education, age, women's partnership status, and whether they are mothering child(ren), in an attempt to account for variation in experiences and, by so doing, to provide an inclusive, heterogeneous understanding of, and support for, distinct societal groups (Hankivsky, 2014). This acknowledges differences in (mental health) outcomes depending on one's social location, a manifestation of societal hierarchies (e.g., classism and sexism) maintaining domination and subordination within interpersonal relations (Collins, 2019). As "we approach [feminist] intersectionality through a power-conscious lens of analytical framework" (Collins & Blige, 2020, p.225), the analysis and interpretation of data recognize social locations as the exercise of power allowed by the advantage against or disadvantage for the risk of negative life events, such as IPV, its mechanisms and impacts.

Drawing on feminist intersectionality permitted me to reject homogenization of categories or groups and to pay close attention to how relative advantages or disadvantages shape women's experiences of IPV, their resources, and their mental health in the context of the social locations of their lives. A possible limitation of an intersectional approach in quantitative research is that it requires extra time and knowledge of statistical techniques to identify and analyze multiple categories as both correlative and interactive, adding complexity to model

testing. Practical implementation of models (e.g., interventions, research) based on an intersectional approach may also need higher investment of funds because they take multiple categories of inequity into account.

Principles of Feminist Research

Jagger (2015) argues that research has traditionally overlooked women's experiences and, instead, has been shaped by a one-sided, largely male, worldview. Feminist scholarship attempts to make women's experiences visible through empirical and theoretical investigations (Im, 2013). IPV disproportionately impacts women, and this dissertation addresses a dearth of research regarding how resources explain the relationship between IPV severity and mental health in women. Despite feminist critiques about quantitative data that often assume stable, non-intersecting categories (Letherby, 2003), Harnois (2013) argues that data are chosen because they are appropriate for the research question and Bauer (2014) notes advancement in quantitative research allows analysis to illuminate interactions between and among categories.

Feminist research is anti-oppressive, including a focus on women's experiences and concerns, taking into consideration the diversity of social locations that could interact to affect how women deal with life's issues. This consideration was achieved through intersectional analysis to understand the impact of IPV severity on mental health through access to resources, from the lens of women's experiences, and, at the same time, incorporating the impacts of theoretically relevant, potentially intersecting social locations named earlier.

Feminist research also commits to change for equity (George & Stith, 2014). This dissertation is a feminist intersectional intervention in IPV knowledge that attempts to expand and contextualize understanding about the mechanisms that explain the mental health effects of IPV by accounting for the intersections of women's age, education, intimate partner status and

mothering and address whether these mediating effects are heterogenous according to interacting social locations. As such, knowledge from this dissertation promotes understanding about how distinct groups of women respond to the negative mental health effects of IPV through access to social support and mastery.

The feminist intersectionality that informs this study uniquely positioned me to engage in feminist reflexivity. Inferring from the work of Im (2013), the primary purposes of data collection reflect a feminist intersectional orientation as it focuses on oppressive experiences such as IPV which impact many women. With *reflexivity*, there is a commitment to reflect on the research process to avoid creating conditions of injustice (Jaggar, 2015). I developed the research questions, data analysis, and interpretation from multidisciplinary perspectives by examining different author's research and ideas in the IPV field about the impact of IPV on mental health in the context of multiple social locations of women. In examining the IPV literature, I intentionally integrated its strengths into its weaknesses to design this dissertation for a more complete understanding of the IPV-Resources-Mental health Relationship in the context of women's social locations. For example, as mentioned above, whilst studies acknowledge social locations, feminist intersectional understandings were not explicitly used to identify intersecting social locations (e.g., gender politics and socioeconomic contexts) as powerful manifestations of societal hierarchies. This weakness of the literature was addressed by using feminist intersectionality to inform the approach to this dissertation. Also, for example, structural equation modelling (SEM) was chosen as the analytic approach mainly because it is a statistical approach that can be used to test a complex set of relationships simultaneously, and to incorporate some important social locations of women into the theoretical model, while preserving *true variance,* referring to the variability among women without measurement error

for the construct-item relations. SEM also has a missing data analytic feature called the full information maximum likelihood (FIML) which retains all available information in the analyses rather than deleting cases where responses are missing. Thus, FIML makes it possible to preserve the feminist intersectional principle of minimizing biases during analysis of information.

Method

Design

To test the relationships between IPV, social support, mastery, and mental health as well as the covariates (see Figure 2), I conducted a secondary analysis of data collected from a sample of Canadian women who had experienced recent IPV and who participated in the iCAN Plan 4 Safety trial (herein iCAN trial) (Ford-Gilboe et al., 2017). The iCAN trial was a Canadian Institute of Health Research (CIHR)-funded randomized controlled trial (RCT) testing the effectiveness of an online safety and health intervention in a community sample of Canadian women who had experienced IPV from a current or former partner in the previous six months. Although the iCAN trial was a longitudinal study, with data collected at four points in time (i.e., baseline, and 3, 6, and 12 months later), my analysis used only the baseline data to test a unique set of relationships. Specifically, the purpose of this study was to test whether IPV has direct and indirect impact on depression symptoms and PTSD symptoms through social support and mastery and attempted to take into account social location variables such as age, education, partner status and mothering. The hypotheses were: (i) mastery and social support mediate the effects of IPV severity on mental health and (ii) women's social locations (age, education, intimate partner status and mothering) account for variations in the mechanisms between IPV and mental health.

While the use of cross-sectional data does not make it possible to infer causality among variables in the model that was tested, the analysis of the baseline data provides a useful starting point for modelling and understanding the relationships between women's experiences of IPV, mastery, social support, and mental health. This cross-sectional analysis may inform future modelling of these relationships over time. Analyzing data from the iCAN study was a cost-effective and time-efficient way to make good use of existing data to answer the research questions of interest. Further, the measures used in the iCAN study were appropriate for operationalizing the study variables and developing empirical understanding of intersectionality based on a feminist perspective.

Sample

A community sample of 462 women participated in this iCAN trial (Ford Gilboe et al., 2020) and comprised the sample for this study. Women were recruited using online advertisements and flyers posted in community agencies. Those who were interested contacted the research team who assessed the women for eligibility, answered their questions, and obtained consent and enrolled those who were interested (Ford Gilboe et al., 2017). Women were eligible to participate if they: (i) had experienced recent abuse (in the previous 6 months) from a partner or ex-partner; (ii) lived in Ontario, British Columbia or New Brunswick; (iii) had access to a safe computer and internet and were comfortable using them; (iv) were 19 years of age or older; and (v) were English-speaking (Ford Gilboe et al., 2017).

Demographic characteristics of the sample are shown in Table 1. Data from all women (irrespective of gender of the abusive partner) who completed the baseline assessment were included to promote the external validity of the findings. The mean age of the women was 34.61 years. Most (38.1%, n =176) had completed post-secondary education or had some post-

secondary education (32%, n=148). Half of the women (50%, n=231) were unemployed and almost all (93.5%, n= 432) experienced some level of difficulty living on their current income. Some women (13.4%, n=62) identified as Indigenous. About half were mothering children under the age of 18 years, part-time or full-time. Women lived in communities that ranged from rural areas and small towns to large population centers. Most abusive partners were identified as men (95.7%, n=442) and 27% of women were living with their abusive partner. Almost all women had experienced more than one type of IPV with these proportions of women reporting each type of abuse: Severe Combined Abuse (82.5%), Physical Abuse (85.5%), Emotional Abuse (99.1%) and Harassment (78.8%).

Table 1

Sample Characteristics at Baseline

Variable	**Total (N=462)**	
	n	**M (SD)**
Age	414	34.61 (10.71)
Months separated from partner (baseline)	266	4.77 (3.47)
	n	**%**
Education		
No secondary school diploma	56	11.7
Secondary school diploma	82	17.7
Some post-secondary	148	32.0
Completed post-secondary	176	38.1
Employment		
Employed Full-Time	113	24.5
Employed Part-Time	116	25.1
Unemployed	231	50.0
Missing	2	0.4
Difficulty Living on Current Income		
Not at all difficult	30	6.5
Somewhat difficult/difficult	215	46.5
Very/extremely difficult	217	47.0
Indigenous		
No	397	85.9
Yes	62	13.4
Missing	3	0.6
Children < 18 years of age living at home		

No	241	52.2
Yes	221	47.8
Community of Residence		
Rural or small population Center	109	23.6
Med population Center	127	27.5
Large Population Center	226	48.9
Partner's Gender		
Man	442	95.7
Other than man*	20	4.3
Living with Abusive partner		
No	334	72.3
Yes	126	27.3
Missing	2	0.4
Positive on CAS for…		
Severe Combined Abuse	381	82.5
Physical Abuse	395	85.5
Emotional Abuse	458	99.1
Harassment	364	78.8

Note. *Inclusive of woman, trans woman, genderqueer, 2-spirited, no option that applies. CAS means Composite Abuse Scale

Adapted from:
Ford-Gilboe, M., Varcoe, C., Scott-Storey, K., Perrin, N., Wuest, J., Wathen, C. N., Case, J., & Glass, N. (2020). Longitudinal impacts of an online safety and health intervention for women experiencing intimate partner violence: randomized controlled trial. *BMC Public Health, 20*(1), 260-277. https://doi.org/10.1186/s12889-020-8152-8

Study Procedures

Demographic and outcome data in the iCAN trial were collected from women using online surveys on a secure password-protected website at baseline and 3, 6 and 12 months later. The surveys included single survey questions and standard self-report measures, including those that captured the variables of interest in this study. The iCAN trial received approval from the Research Ethics Boards at Western University, the University of British Columbia, and the University of New Brunswick in July 2014. The research team received initial and ongoing written informed consent from each participant at baseline and at each follow-up data collection session. Participation in iCAN was voluntary, and women were informed they could refuse to

answer any question or withdraw from the study at any time. The research team used a safety protocol to guide all research-related interactions with women (Ford-Gilboe et al., 2017).

The four instruments used to measure the respective study variables are described below, along with survey questions used to collect data about the background characteristics (education, age, women living with their partner and mothering children) used as covariates in this study. As noted in the hypotheses, the main independent variable (IV) in the model is IPV Severity, while symptoms of PTSD and depression are the dependent variables (DVs). The IV and DVs were used as manifest, continuous variables because they were measured using self-report scales that have demonstrated both validity and reliability across many samples cross-culturally; this increases confidence in their use as total scores. The mediators in the model - social support-, and mastery - were included as latent variables because the reliability and validity of the self-report scales used to operationalize these variables was less certain. Specifically, the Mastery Scale has been noted to exhibit method effects due to the inclusion of items that measure this concept using positive and negative indicators (Lim et al., 2022), while the 5-item social support is a newly developed scale that has not yet been tested across samples. Thus, the psychometric properties of these latent variables were assessed before including them in the modelling of their mediating effects between IPV and mental health. Properties of all scales are summarized in Table 2.

Severity of Intimate Partner Violence (IPV)

As the focal independent variable, severity of intimate partner violence was operationalized using the Composite Abuse Scale (CAS) (Hegarty, Bush & Sheehan, 2005). The CAS is a 30-item self-report scale that measures the severity of IPV in the past 12 months along four dimensions: Severe Combined Abuse (8 items), Emotional Abuse (11), Physical Abuse (7)

and Harassment (4 items). The CAS uses a 6-point Likert scale format, where women are asked to report the frequency of specific acts of partner abuse they experienced in the previous 12 months from "Never" (0) to "daily" (6). Scores were computed by summing items on each scale and overall, with higher scores reflecting more severe IPV. This analysis used the total score across all 30 items, which has a possible range of 0 to 147.

The CAS has demonstrated satisfactory internal consistency ($\alpha > .85$), convergent validity ($r > 0.45$) and concurrent validity (based on known group comparison) (Hegarty et al., 2005). The internal consistency (Cronbach's alpha) of the 4 subscales in the initial development studies was .90, .93, .94 and .87, respectively. The CAS was primarily developed using English-speaking female clinical samples (Hegarty et al., 2005) and has gained international acceptance for measurement of IPV (see Ford-Gilboe et al., 2017; Evans et al., 2016) and as the criterion standard for IPV measurement tools based on acceptable test-retest reliability and cross-cultural reliability and validity estimates in Canada and elsewhere (see Ford-Gilboe et al., 2016; Evans et al., 2016). Cronbach's alpha for the total CAS score was 0.84 at baseline (Ford-Gilboe et al., 2020).

Social Support

Social support was measured using a modified, 5-item version of the self-report Medical Outcomes Study Social Support Survey (MOS-SSS) (McCarrier et al., 2011). The 5-item MOS-SSS is based on the 20-item MOS-SSS that was developed in a two-year Medical Outcomes Study (MOS) to assess functional support among a sample of patients with chronic conditions (McCarrier et al., 2011). Like the original MOS-SSS, the revised MOS-SSS is a summated rating scale assessing perceived emotional, informational, and instrumental support. Women were asked to rate how often they used support available to them when needed using a 5-point Likert

type scale response format with response options that ranged from '*none of the time*' (1) to *'all of the time*' (5). Total scores range from 5 to 25, with higher scores indicating higher perceived social support.

Unlike the original MOS-SSS, the revised MOS-SSS has been used in only a few studies (see Ford-Gilboe et al., 2020; McCarrier et al., 2011), although in different populations. It has demonstrated adequate internal consistency (Cronbach's alpha = .87), convergent and discriminant validity, correlating highly with the original, multidimensional MOS-SSS (r = 0.91) and showing an ability to discriminate between victimized women living with a partner and those living alone (McCarrier et al., 2011). In this study, internal consistency of the Social Support scale was acceptable (Cronbach's alpha (α) = .86), and consistent with the reliability coefficient reported in the U.S. study that first employed this 5-item scale (McCarrier et al., 2011).

Mastery

Mastery was operationalized using Pearlin's Mastery Scale (Pearlin et al., 1989), a seven-item self-report measure of perceived sense of control over life's issues or stressors. Women were asked to rate their level of control related to important things affecting their lives on a 5-point Likert scale, with options ranging from strongly disagree (0) to strongly agree (4). After reverse scoring five negatively worded items, total scores are computed by summing item responses (range 0-28), such that higher scores reflect higher perceived mastery.

Pearlin's Mastery Scale has received wide acceptance as a measure of sense of control (Gadalla, 2010; Roepke & Grant, 2011) and has demonstrated acceptable internal consistency (α = 0.76) and face validity across many different populations (Brady, 2003; Pearlin et al., 1981), as well as satisfactory construct validity (Pearlin et al., 1981), item-total correlations and concurrent validity (based on comparison with self-esteem scale) (Pearlin & Schooler, 1978). Since its

development (Pearlin & Schooler, 1978), the Mastery Scale has been used in a variety of samples including people dealing with mental illness (Eklund, Erlandsson & Hagell, 2012), in caregiving roles (McAuliffe, Ong & Kinsella, 2020) and intimate partner violence (Ford-Gilboe et al., 2017). In this study, after recoding items to a positive direction, internal consistency was acceptable (Cronbach's $\alpha = .82$), which is above the reliability coefficient ($\alpha = 0.70$) reported by Eklund, Erlandsson & Hagell (2012) in a Swedish sample of 300 "healthy" individuals and 278 people experiencing mental illness.

Depression Symptoms

Depression symptoms were measured using the 20-item Center for Epidemiologic Studies Depression Scale (CESD-R). This scale is a unidimensional self-report measure of depression symptoms, consistent with DSM-IV criteria for depression. Participants were asked to rate the frequency of symptoms of depression in the previous two weeks on a 5-point Likert type scale with options ranging from "not at all or less than one day" (0) to "nearly every day for 2 weeks" (4). Summed total scores ranging from 0-80 reflect the severity of depression symptoms, where scores of 16 or above are consistent with risk of clinical depression (Eaton et al., 2004; Van Dam & Earleywine 2011).

The CESD-R has demonstrated acceptable internal consistency (Cronbach's alpha = .90). In terms of concurrent and discriminant validity, the CESD-R showed expected moderate to strong correlations with State-Trait Inventory for Cognitive and Somatic Anxiety ($r = 0.737$, $p<0.01$) and Schizotypal Personality Questionnaire—Brief ($r = 0.436$, $p<0.01$) (Van Dam & Earleywine 2011). As the most widely used measure of depression symptoms (Van Dam & Earleywine 2011), CESD-R has been used in many different populations, including family caregivers (Kagee et al., 2020) and women experiencing intimate partner violence (see Ford-

Gilboe et al., 2017) to name but a few. The reliability of the CESD-R in this sample at baseline was acceptable (Cronbach's alpha = 0.95) (Ford-Gilboe et al, 2020).

PTSD Symptoms

PTSD symptoms were measured using the 17-item PTSD checklist, Civilian Version (PCL-C), a self-report measure that assesses DSM-IV criteria for PTSD on a 5-point Likert type scale, with response options ranging from 1 (not at all) to 5 (extremely); summed total scores ranged from 17-85 with higher scores suggesting greater symptomatology (Blanchard, Jones-Alexander, Buckley & Forneris, 1996).

The PCL-C showed good construct validity in a sample of trauma survivors who reported the frequency of experiencing PTSD symptoms in the past month. The inter-rater agreement (kappa) between PCL-C and CAPS (Clinician-Administered PTSD Scale, a gold standard structured clinical interview for diagnosing PTSD) was 0.836, $p < 0.001$. Each PCL item correlated significantly with the corresponding individual CAPS item, and the correlation between PCL total score with CAPS total score was acceptable at $r = .929$ (Blanchard et al., 1996). When the cutoff score is 44, PCL-C produces an overall diagnostic efficiency of .900, which has a sensitivity of 0.944 and specificity of 0.864 (Blanchard et al., 1996). Thus, the PCL-C can sufficiently identify the presence or absence of PTSD symptoms that are consistent with a provisional diagnosis of PTSD. PCL-C is the most frequently used for measuring PTSD symptoms in veterans, domestic violence and patient samples for whom trauma is a common experience (McDonald & Calhoun, 2010). The internal consistency of the total score on the PCL-C in the iCAN trial was 0.93 at baseline (Ford-Gilboe et al, 2020).

Social Location Variables/Covariates

Age was measured as a continuous variable, operationalized with the question, "*what is your current age*?"

Education was measured by asking women about the highest education level completed, with the following response categories: some elementary school; elementary school; some secondary school/high school; graduated from secondary school/high school; some college or university; and graduated from college or university.

Partner status. This was measured by asking women whether they were living with their abusive partner or ex-partner. The response options (yes or no) produce a dichotomous variable.

Mothering. Women were also asked to indicate (yes/no) whether they had any children less than age 18 years. If women answered yes, they were then asked to indicate whether the child(ren) lived with them full- or part-time, capturing whether women were engaged directly in mothering of dependent children on a regular basis.

Table 2

Measurement of Study Variables

Variable	Measure	Description
IPV severity	Composite Abuse Scale (CAS)(Hegarty et al, 2005).	30 items measured using a 6-point Likert type response format; good internal consistency and acceptable content, construct, criterion and factorial validity.
Social support	Medical Outcomes Study Social Support Survey (MOS-SSS) (McCarrier et al., 2011).	5-item summated rating scale assessing emotional, informational, and instrumental support using a 5-point Likert type scale response format good internal consistency (alpha =.87) and validity.
Mastery	Pearlin's Mastery scale (Pearlin, Menaghan,	7-item summated rating scale using a 5-point Likert type response format; good internal consistency (alpha (α) =

	Liebermann, & Mullan, 1981)	0.76) and face validity across many different populations (Brady, 2003).
Depressive Symptoms	Center for Epidemiologic Studies Depression Scale (CESD-R) (Eaton et al., 2004; Van Dam & Earleywine 2011).	20-item scale capturing DSM-IV criteria for PTSD on a 5-point Likert type scale; good internal consistency and validity.
PTSD Symptoms	PTSD checklist, Civilian Version (PCL-C) (Blanchard, Jones-Alexander, Buckley, & Forneris, 1996).	17-item scale capturing DSM-IV criteria for depression on a 5-point Likert type scale; good internal consistency and acceptable face and construct validity.
Age	What is your current age?	Age in years
Education	What is the highest level of education you have completed?	□ Some elementary school □ Elementary school □ Some secondary school/high school □ Graduated from secondary school/high school □ Some college or university □ Graduated from college or university □ Other. Please specify: _____
Partner Status	Do you currently live with your abusive partner/ex-partner?	□ No □ Yes
Mothering a minor child	Do you have any children under the age of 18? IF YES: Do any of these children live with you full- or part-time?	□ Yes □ No □ Yes □ No

Data Analysis

The data analysis proceeded in phases. In the preliminary data analysis phase, missing data analysis was conducted using SPSS version 27. Given that there were no cases with missing data on all items, the main study analysis was conducted with the full sample (N = 462), which is

a suitable sample size for the ensuing structural equation modeling (SEM) given the number of variables (8) among which are only two latent variables and the rest are all manifest variables, although there is not single way to determine data suitability for SEM analysis (Brown, 2015).

The percentage of missing data was between 0-10.4%. Little's assessment of the missing data patterns [X^2 (163) =150.745, $p > .05$] showed that data were missing completely at random (MCAR) such that nonresponse is assumed to be completely unrelated to the study variables (Little et al., 2014). This pattern of missing data was best handled with full information maximum likelihood (FIML), an optional estimation scheme in SEM that incorporates an analysis of missing data and removes participants missing responses on all items from the analysis (see Little et al., 2014). If there are no participants with missing data on all items, the estimation method uses the available information on participants for the analysis, retaining the full sample for analysis. The FIML is considered more pragmatic than traditional missing data handling methods including listwise and pairwise deletion techniques, hence, FIML has benefits in terms of inclusivity of voices of a diverse sample, unlike other methods (e.g., listwise, and pairwise).

The preliminary analysis also used SPSS version 27 to inspect data for errors, recode variables, calculate descriptive statistics, estimate reliability coefficients for self-report scales, and to estimate bivariate relationships between variables to be included in the main model. Prior to testing the structural model in SEM, the latent structure of social support and mastery (the two latent variables in the model) was tested using confirmatory factor analysis (CFA) with Maximum Likelihood (ML) estimation in lavaan version 0.6-9 (Rosseel, 2012) in R. To employ the ML estimation method, the following assumptions were met: (i) each item has at least 5 response categories; (ii) normally distributed items and all indicators/variables have acceptable

skewness of absolute value < 2 and kurtosis < 5 (shown in Results [Chapter 4], Tables 3, 5 and 7); (iii) no outliers based on data inspection and (iv) principal component analysis results satisfy a necessary but not sufficient condition that indicators are positive definite (eigenvalues > zero) (see Brown, 2015).

Model testing in SEM proceeded to test the hypotheses that severity of IPV affects mental health (depression and post-traumatic stress disorder [PTSD]) symptoms directly and, indirectly, through its impact on social support and mastery, while accounting for the influence of women's social locations (e.g., age, education, mothering, partner status). Structural equation modeling was conducted using lavaan version 0.6-9 (Rosseel, 2012) in R based on ML estimation, with separate models developed for depression symptoms or PTSD symptoms as the dependent variable. As the preliminary analysis, including the bivariate correlations, informed the inclusion of variables in the final models, it also informed the decision to run separate models for PTSD symptoms and depression symptoms. For example, although PTSD symptoms and depression symptoms are strongly correlated, the former showed stronger correlation with IPV than the latter. For the covariates, only education and mothering correlated with the outcomes (PTSD symptoms and depression symptoms). Hence these were the only covariates included in the final model. As reported in Chapter 4, the intersectional analysis proceeded with only mothering because this was the only significant covariate in the final model.

Chapter 4

Results

Chapter 4 is organized in two main parts. First, the preliminary analysis sections contain the description of each variable and its correlation with other variables as well as the examination of the latent structure of social support and mastery (the two unobserved variables in the hypothesized model). Second, the section on model testing includes exploration of the direct and indirect effects of IPV on mental health (depression symptoms or PTSD symptoms) through social support and mastery. The chapter then closes with the examination of variations in these mechanisms based on women's mothering status because mothering was the only significant covariate in the initial model testing.

Preliminary Analyses

Descriptive statistics

Table 3 shows the descriptive statistics for the study variables. The mean score for IPV on the CAS scale (51.5, *SD*=28.33, range=0-147) is comparable to that reported in other studies such as Evans et al (2016) and Ford-Gilboe et al (2016). A mean of 51.5 would be the equivalent of 1.7 on a 5-point scale, which suggests that on average women experienced acts of abuse on a fairly regular basis. Total scores for social support (mean=13.36, *SD*=5.07, range=5-25) and mastery (mean=13.93, *SD*=5.42, range=7-28) were derived using the standard scoring approach for each scale. These mean scores were moderate for social support (equivalent to 2.7 on a 5-point response scale) but were relatively low to moderate for mastery (equivalent to 2 on a 5-point response scale). The mean scores for depression (39.9, *SD*=21.16) and PTSD (52.34, *SD*=14.34) are well above the cut scores of probable clinical depression (16) and probable clinical PTSD (44), respectively. Mean scores for both depression and PTSD are similar to those

reported in samples of women who have experienced IPV (Ford-Gilboe et al., 2022; Koziol-McLain et al., 2018; Varcoe et al., 2017).

Women's social locations varied by age, education, whether living with their abusive partner or not (partner status) and whether or not they were mothering dependent children under the age of 18 years. The mean age of the women was 34.6 years (range =19-69, *SD*=10.71). Most women (70%) had completed some post-secondary education, while the remaining (30%) did not have any post-secondary education, most of whom (17.7%, *N*=82) had completed secondary school. About 1 in 4 (27.3%) were living with their abusive partner at the time of data collection, while 72.3% were not residing together, having separated or never lived with this partner. About half of women in the sample (47.8%) reported that they were mothering children less than 18 years of age who were residing with them full- or part-time.

Table 3

Descriptive Statistics for Main Variables and Covariates

Main Variables	*N*	*M (SD)*	Range	%	Skewness	Kurtosis
Intimate Partner Violence (IPV)	461	51.51 (28.33)	0-147		0.82	0.39
Social Support	456	13.36 (5.07)	5-25		0.53	-0.36
Mastery	454	13.93 (5.42)	0-28		0.07	-0.30
PTSD Symptoms	462	52.34 (14.34)	17-85		-0.06	-0.71
Depression Symptoms	462	39.90 (21.16)	0-80		0.00	-1.16
Covariates						
Age	414	34.61 (10.71)	19-69		0.57	-0.48
Education						
Secondary School education or less *(Ref)*	138			29.90		
At least some post-secondary education	324			70.10		

Partner status		
Not living with abusive partner *(Ref)*	334	72.30
Living with abusive partner	126	27.30
Mothering Dependent Children		
No *(Ref)*	241	52.2
Yes	221	47.8
N = 462		

Notes. Ref means reference category

Bivariate correlations

The model covariates were examined to determine their relationships with the main predictor (IPV Severity) and outcomes in the model (depression, PTSD), primarily to find out whether any were strongly correlated (in particular, *r* should not be greater than .80 for the main predictor to rule out multicollinearity). From an intersectional perspective, the bivariate analysis was also conducted to avoid the homogenizing of women's experiences by identifying which social locations were related to mental health.

Denis (2018) and Field (2015) note the usefulness of Point Biserial Correlation, an approach that is mathematically based on Pearson Product-Moment Correlations, to estimate the relationships between nominal and continuous variables. Among the four covariates, three (i.e., education, partner status and mothering) were dichotomous and age was continuous. The main study variables consisted of continuously measured outcome variables (Depression Symptoms and PTSD Symptoms), IPV Severity as the continuously measured predictor variable, and latent mediators (social support and mastery). The inclusion of variables in the final model was informed by an understanding of the bivariate associations between variables (Table 4). Because the bivariate analysis cannot accommodate latent-manifest variable relations, total scores for social support and mastery, as indicated above, were included in the analysis.

Table 4

Zero-Order Correlations Between Main Study Variables and Between Main Study Variables and Covariates

Pearson Product-Moment Correlations						Point Biserial Correlations			
Variables	IPV	Social Support	Mastery	Depression symptoms	PTSD symptoms	Age	Education	Partner Status	Mothering
IPV	1	-.090	**-.183***	**.314***	**.402***	**-.160***	**-.115***	**-.170***	-.023
Social support		1	**.361***	**-.261***	**-.227***	-.061	-.015	**-.239***	.026
Mastery			1	**-.459***	**-.421***	-.059	.072	**-.146***	.069
Depression symptoms				1	**.749***	-.041	**-.113***	.070	**-.131***
PTSD symptoms					1	-.058	**-.122***	.023	**-.112***

Notes. * $p < .05$.

IPV severity was moderately and positively correlated with both depression symptoms (r =.314) and PTSD (r = .402) symptoms, although the correlation with PTSD symptoms was stronger. Severity of IPV was weakly and negatively correlated with mastery (r = -.183). The mediators in the model, social support and mastery, were significantly and moderately related (r = .361). Each of these variables was negatively related to both depression symptoms and PTSD symptoms, although mastery was more strongly correlated with these outcomes than social support. A strong significant correlation was observed between depression and PTSD, suggesting a substantial overlap in symptomatology. However, the stronger association of PTSD with IPV, in comparison to depression with IPV, suggests uniqueness of these two mental health outcomes. The symptom-based approach used to measure mental health outcomes as continuous variables could yield PTSD and depression scores that vary widely, increasing the likelihood of identifying differences in the mechanisms explaining the impact of IPV on each mental health outcome if they exist. Thus, the differences in correlations between depression or PTSD and IPV could translate into heterogeneity in the direct and indirect effects of IPV on depression symptoms or

PTSD symptoms. For these reasons, separate models were tested with PTSD and Depression as mental health outcomes. Mothering and education were significantly and inversely related to mental health (depression and PTSD symptoms); therefore, only mothering and education were included in the hypothesized model as covariates.

Thus, the structural model tested the independent impact of the main predictor (IPV Severity) on two separate outcomes (depression symptoms and PTSD symptoms), as explained by social support and mastery and accounting for the heterogeneity in women's categories according to their mothering and education statuses, after first assessing latent structure of social support and mastery (unobserved variables in the model).

Testing the Measurement Model

Latent Structure of Social Support

Table 5 shows the five items on the social support scale (MOS-SSS). Item responses had means that ranged from 2.08 to 3.11 on a 5-point scale. As shown in Table 5, the mean score at the item level was 2.67 (*SD* =1.01). Social support items moderately to strongly correlated with each other (*r* = .39 - .88), suggesting convergence on a common factor which accounts for their common relations (Table 6).

Table 5

Descriptive Statistics for Items on the Social Support Scale (N = 462)

Main Variables	*N*	*M (SD)*	Skewness	Kurtosis
Social Support Scale		2.67 (1.01)		
MOSS1-Confide in	462	3.11 (1.21)	-0.02	-0.94
MOSS2-Turn to	461	3.03 (1.27)	-0.02	-1.04
MOSS3-Help if sick	462	2.08 (1.31)	0.95	-0.36
MOSS4-Love	461	2.68 (1.31)	0.41	0.93
MOSS5-Get together	458	2.47 (1.22)	0.55	-0.60
N = 462				

Table 6

Pearson Correlation Matrix for Social Support Items

Item	MOSS1-Confide in	MOSS2-Turn to	MOSS3-Help if sick	MOSS4-Love	MOSS5-Get together
MOSS1-Confide in	1.00	.88	.39	.53	.54
MOSS2-Turn to		1.00	.41	.55	.56
MOSS3-Help if sick			1.00	.51	.55
MOSS4-Love				1.00	.66
MOSS5-Get together					1.00

N=456

Notes. All correlations are statistically significant, p< .05

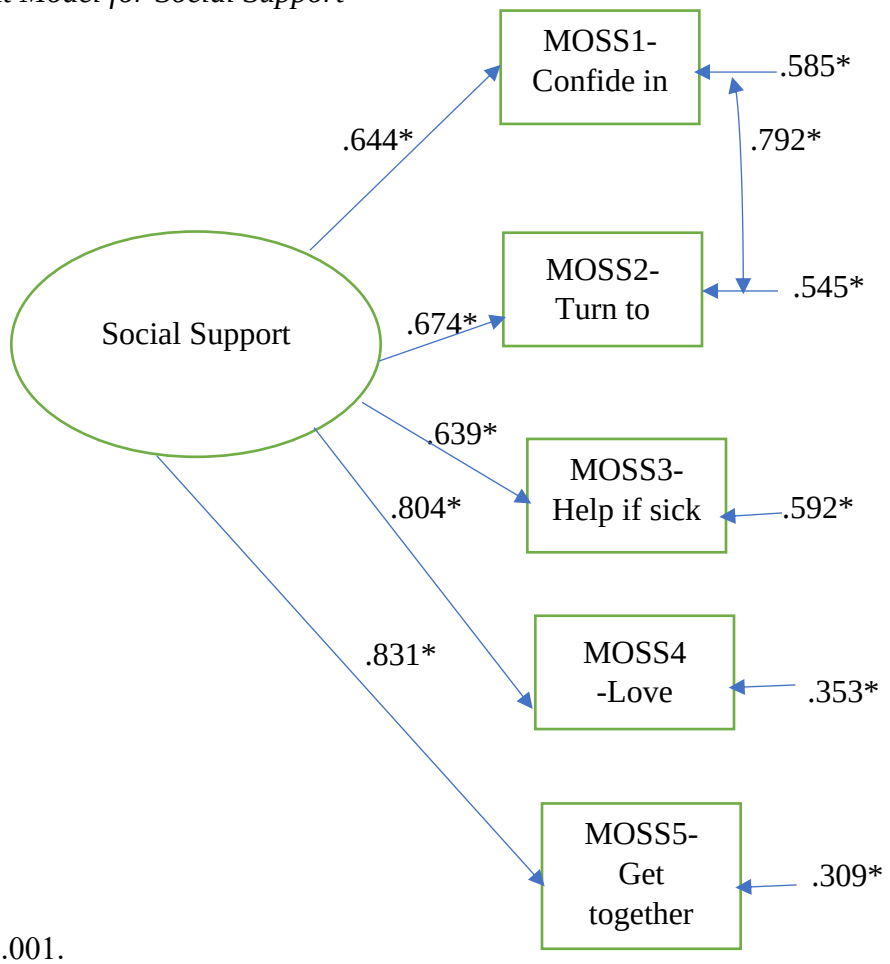
Based on empirical evidence supporting a 5-item social support scale (see McCarrier et al., 2011), a one-factor solution was specified for the social support measurement model. Next, the factor structure of the 5 social support items was confirmed through CFA using the ML estimation method. The latent variable was scaled to have a mean of 0 and variance of 1 so that there was complete estimation of all indicator loadings. No correlated residuals were specified. According to Brown (2015), the criteria to assess excellent model fit include: (i) non-significant low $\chi 2$ value and df, although this is affected by sample size; (ii) CFI and TLI = 0.95 to 1; (iii) RMSEA =.06/.08 or lower with 90% CI (the lower limit = 0 or close to 0, and its upper limit = .08 or below) and (iv) SRMR =.06/.08 or lower. The predicted covariance structure was over-identified and a poor fit with the data [$X^2(5) = 212.75$, $p < .001$; RMSEA= .30 (90%CI: .27-.34); CFI/TLI=.85/.70; SRMR=.10]. In this first model, all loadings were significant and moderate to high (.46 to .95, $p < .001$), and positively related to the factor.

Given the poor model fit, inspection of the residual correlation matrix, modification indices (MIs) and expected parameter change (EPC) was used to inform model modification (see Brown, 2015). The residual correlation matrix showed some unacceptable values (between .08

and .30). Item 1 (Someone to confide in or talk to about yourself or your problems) and item 2 (Someone to turn to for suggestions about how to deal with a personal problem) had an acceptable residual correlation (.01) but with a MI > 4, indicating unacceptable localized strain (Brown, 2015). Therefore, the residual covariance between items 1 and 2 was freely estimated, resulting in an expected decrease in X^2 test statistic (MI=241.75), with corresponding standardized EPC (6.44). Notably, these items had the highest saturation in the model—factor loading of .92 and .95, respectively—and seem to capture a similar aspect of support in terms of the *access to a confidant.* The modified model was found to be an excellent fit with the data [$X^2(4) = 1.65$, $p = .800$; RMSEA= .00 (90%CI: .00-.05); CFI/TLI=1.00/1.00; SRMR=.01]. Loadings were significant and positive (.64 to .83, $p < .001$) and there were no remarkable areas of strain in the model based on MI, EPC and residual correlation matrix (between -.022 and .011). Thus, testing of the structural model proceeded using this latent variable for social support.

Figure 3

Measurement Model for Social Support



Notes. * p < .001.

Latent structure of mastery

The seven items on the mastery scale had average responses ranging from 1.90 to 3.06 on a 5-point scale. As shown in Table 7, the overall mean response on the mastery scale was 2.51 (*SD* =.45). Its smaller SD (.45) indicates less variability in responses compared to variation on the social support scale (SD=1.01). The Pearson correlation matrix for mastery items is shown in Table 8. The first five items, which were all negatively worded, showed moderate to strong, positive correlations with each other (*r* = .39 -.70). However, there were weak negative relationships between item 6 and all other items (*r* = - .13 - .27) except for item 3 (*r* = -.30). Item

7 was also weakly and negatively associated with all other items (r = -.20-.26), with the exception of moderate negative correlations with items 2 and 3, and a positive moderate correlation (r = .54) with item 6, the other positively worded item on the scale.

Table 7

Descriptive Statistics for Items on the Pearlin's Mastery Scale

Main Variables	*N*	*M (SD)*	Skewness	Kurtosis
Mastery scale		2.51(.45)		
M1_Control	461	2.09 (1.18)	-0.06	-0.93
M2_Solve	460	2.19 (1.25)	-0.15	-1.12
M3_Change	459	1.90 (1.22)	0.16	-1.12
M4_Helpless	462	2.76 (1.10)	-0.76	-0.12
M5_Pushed	460	2.89 (.98)	-0.92	0.51
M6_Future	462	3.06 (.98)	-0.97	0.44
M7_Mind	462	2.68 (1.14)	0.53	-0.58

N=462

Table 8

Pearson Correlation Matrix for Mastery Items

Item	M1_ Control	M_ Solve	M3_ Change	M4_ Helpless	M5_ Pushed	M6_ Future	M7_ Mind
M1_Control	1.00	.54	.58	.46	.39	-.21	-.28
M2_Solve		1.00	.70	.49	.38	-.27	-.30
M3_Change			1.00	.55	.40	-.30	-.32
M4_Helpless				1.00	.53	-.13	-.26
M5_Pushed					1.00	-.15	-.20
M6_Future						1.00	.54
M7_Mind							1.00

N=454

Notes. All correlations are statistically significant, $p < .05$

In accordance with the measurement theory of Pearlin's mastery scale, a one-factor solution was specified in CFA for this scale. This latent variable was scaled to have a mean of 0

and variance equal to 1 to allow complete estimation of all indicator loadings. No correlated residuals were specified. Based on criteria for evaluating model fit described above, the predicted covariance structure was overidentified and a poor fit with the data [$X^2(14) = 174.36$, $p < .001$; RMSEA= .16 (90%CI: .14-.18); CFI/TLI=.85/.78; SRMR=.08]. In this original model, loadings were moderate to strong and significant (-.36 to .85, $p < .001$). All loadings were positively related to the factor except for loadings on the last two items which were negatively related to the factor.

Inspection of the residual correlation matrix, modification indices (MIs) and expected parameter change (EPC) informed model re-specification (see Brown, 2015). The residual correlation matrix showed some unacceptable values (between .09 and .39). Items 6 (What happens in the future mostly depends on me) and 7 (I can do just about anything I really set my mind to) had the highest unacceptable residual correlation (.39) with a MI > 4, indicating unacceptable localized strain (Brown, 2015). Therefore, the residual covariance between these two items was freely estimated, resulting in an expected decrease in X^2 test statistic (MI=103.613), with corresponding standardized EPC (.46).

The revised model fit the data well (based on CFI/TLI and SRMR) with correlated errors [$X^2(13) = 60.48$, $p < .001$; RMSEA= .08 (90%CI: .07-.11); CFI/TLI=96/93; SRMR=.04]. Loadings were moderate (-.32 to .85, $p < .001$) but there were areas of strain in the model based on MI (43.22), which coincided with EPC (0.343) and residual correlation matrix (0.174). These indices suggested that freeing the parameter for item 4 (I often feel helpless dealing with the problems of life) and item 5 (Sometimes I feel that I'm being pushed around in life), a reasonable modification given that both items share a link to *helpfulness*. With the parameters for items 4 and 5 freed, model fit improved and was excellent [$X^2(12) = 17.34$, $p = .137$; RMSEA= .03

(90%CI: .00-.06); CFI/TLI=.99/.99; SRMR=.02], with significant loadings. The direction of item-factor relationships remaining the same as in the original model. This adjusted measurement model was used as the latent construct in the SEM, although localized strain in the model suggested correlated errors between "M4_Helpless" and "M6_Future", and between "M1_Control" and M5_Pushed" based on MI > 4, these parameters were not freed because the MI coincided with weak EPC and residual correlation matrix was below .08.

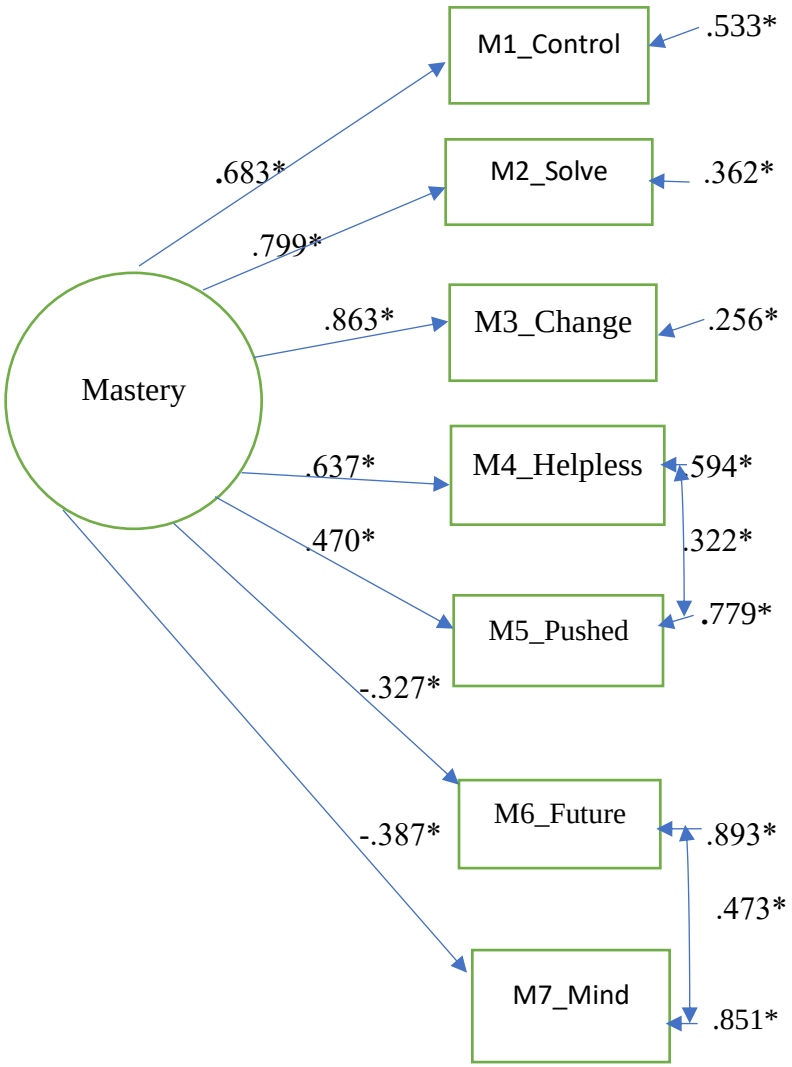
Table 9

Summary of Model Comparisons for Mastery

Model	Summary of modification	X^2 (df)	RMSEA	CFI/TLI	SRMR
Original	NA	174.36 (14) $p < .001$	.16 (90%CI: .14-.18)	.85/.78	.08
Modification 1	Correlated errors between "M6_Future" and "M7_Mind"	60.48 (13) $p < .001$	.08 (90%CI: .07-.11)	.96/.93	.04
Modification 2	Modification 1 + Correlated errors between "M4_Helpless" and "M5_Pushed"	17.34 (12) $p = .137$	.03 (90%CI: .00-.06)	.99/.99	.02

Figure 4

Measurement Model for Mastery



Notes. * p < .001.

Structural Model Testing

As stated above, the direct and indirect effects of IPV on depression symptoms or PTSD symptoms were estimated using structural equation modelling (SEM), with separate models built for each dependent variable (i.e., depression symptoms or PTSD symptoms). Each model was specified to have the dependent variable regressed on relevant covariates (education and

mothering). Because mothering was the only significant covariate in both depression symptoms model and PTSD symptoms model, the follow-up intersectional analysis involved a hypothesised model for depression symptoms or PTSD symptoms as the dependent variable in the subsamples of women identifying as mothers (women identifying as mothering minor children) or nonmothers (women identifying as not mothering minor children).

Model 1: Depression symptoms as the dependent variable

With depression symptoms as the dependent variable, the hypothesised model was found to fit the data well based on RMSEA, CFI/TLI, and SRMR [$X^2(94) = 160.35$, $p < .001$; RMSEA= .04 (90%CI: .03-.05); CFI/TLI=.98/.97; SRMR=.04]. The standardized coefficient (0.218, $p <$ .001) between IPV severity and depression symptoms indicated a significant direct relationship when the indirect relationships through social support and mastery and covariates were included in the model (Table 10).

Examining the standardized specific effects (Figure 5) indicated weak but significant negative relationships between IPV severity and social support (-0.112, $p = .027$) and between social support and depression symptoms (-0.132, $p = .007$), suggesting that more severe IPV is associated with lower social support, resulting in higher levels of depression symptoms. IPV severity was weakly and negatively associated with mastery (-0.201, $p < .001$) and mastery was moderately but negatively associated with depression symptoms (-0.366, $p < .001$), meaning that more severe IPV was associated with lower levels of mastery and, in turn, higher levels of depression symptoms. These standardized specific effects for mastery were stronger than the standardized specific effects for social support.

The standardized indirect effect of IPV on depression symptoms through social support was very small (0.015) and nonsignificant ($p = .087$). The indirect effect of IPV on depression

symptoms through mastery was also small (0.074) but greater than that of social support and significant ($p < .001$). The total effects were substantial (0.306, $p < .001$), with most of these effects attributable to the direct effect of IPV on depression symptoms (Table 10).

Mothering was the only significant covariate in the model (-0.102, $p = .011$), which highlights differences in women's experiences of the direct and indirect effects of IPV on depression symptoms. Thus, although more severe IPV was related to greater intensity of depression symptoms, women's mothering reduced the effect of IPV on depression by 0.102, after accounting for the effect of education and the direct and indirect effects of IPV through mastery and social support.

Table 10

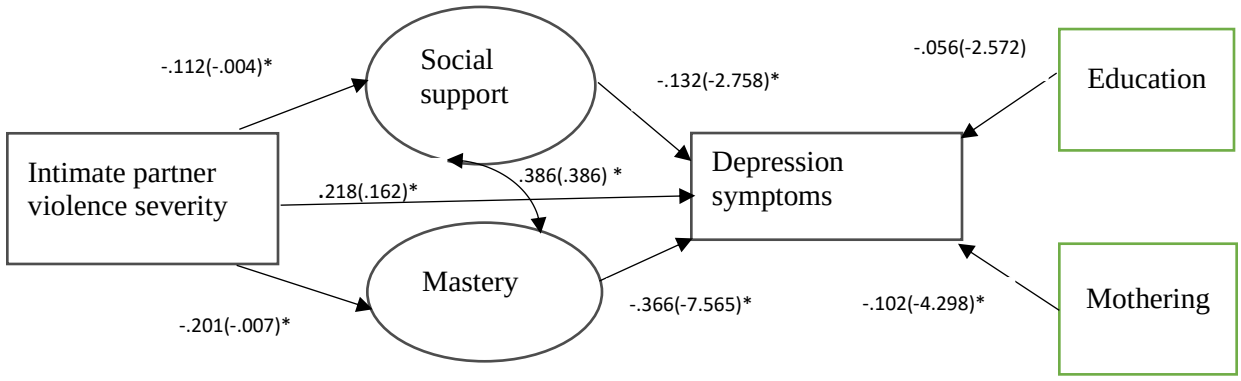
(Un)standardized Direct and Indirect Effects of IPV on Depression Symptoms

Structural Effects	Unstandardized coefficients	Standardized coefficients (β)	Standard error (SE)	*p*-value
Direct effects				
IPV→depression symptoms	0.162	0.218	0.031	< .001
Indirect effects				
IPV→SS→depression symptoms	0.011	0.015	0.006	= .087
IPV→M→depression symptoms	0.011	0.074	0.015	< .001
Total effects				
IPV→depression symptoms	0.228	0.306	0.033	< .001

N=462

Figure 5

(Un)standardized Direct and Indirect Effects of IPV on Depression Symptoms



Notes. * p < .05. Unstandardized coefficients in brackets.

Intersectional analysis with depression symptoms as the dependent variable

Given that mothering was the only significant covariate in the final model, the intersectional analysis involved a comparison of hypothesised models with depression symptoms as the dependent variable in the subsamples of women who did and did not identify as mothering dependent children. Thus, this analysis tested whether mothering status moderated relationships in the model.

Subsample of mothers. In the model for mothers, fit indices were excellent [$X^2(70)$ = 99.98, p = .011; RMSEA= .04 (90%CI: .02-.06); CFI/TLI=.98/.97; SRMR=.05]. There was a weak and significant direct relationship (0.182, p = .003) between IPV severity and depression symptoms after controlling for the indirect relationships through social support and mastery.

The standardized specific effects (Figure 6) revealed significant negative relationships between IPV severity and social support (-0.198, p = .007) and between social support and depression symptoms (-0.206, p = .004), indicating that more severe IPV is associated with lower social support, resulting in higher levels of depression symptoms. IPV severity was also weakly and negatively associated with mastery but nonsignificant (-0.125, p = .085) and mastery

was moderately but negatively and significantly associated with depression symptoms (-0.306, $p < .001$), meaning that lower levels of mastery was associated with higher levels of depression symptoms. All other specific direct relationships were significant except for the relationship between IPV and mastery, but mastery had a stronger relationship with depression symptoms than the social support-depression symptoms relationship.

The standardized indirect effect of IPV on depression symptoms through social support was very weak (0.041) but significant ($p < .05$); the indirect effect of IPV on depression symptoms through mastery was also weak (0.038) but lower than that of social support and nonsignificant ($p > .05$). The total effect was significant (0.261, $p < .001$), with the most substantial portion of the total effect accounted for by the direct effect of IPV on depression symptoms.

Table 11

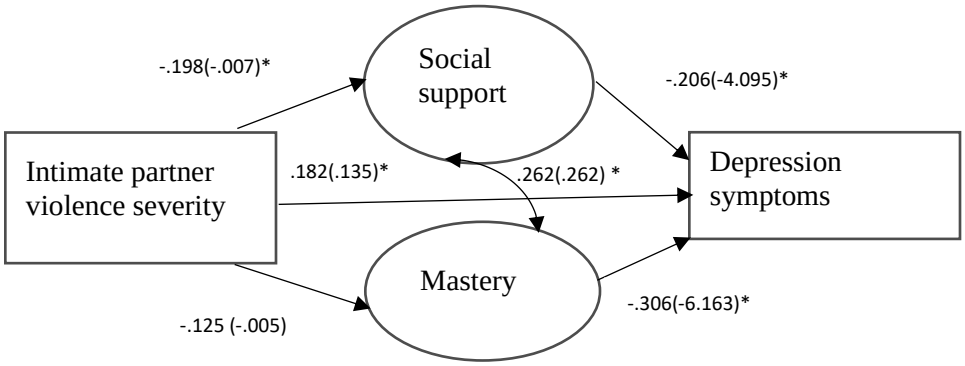
(Un)standardized Direct and Indirect Effects of IPV on Depression Symptoms in Mothers

Structural Effects	Unstandardized coefficients	Standardized coefficients (β)	Standard error (SE)	*p*-value
Direct effects				
IPV→depression symptoms	0.135	.182	0.046	= .003
Indirect effects				
IPV→SS→depression symptoms	0.030	0.041	0.015	=.046
IPV→M→depression symptoms	0.029	0.038	0.018	=.108
Total effects				
IPV→depression symptoms	0.194	0.261	0.048	< .001
N = 221				

Notes. SS = Social support, M= Mastery

Figure 6

(Un)standardized Direct and Indirect Effects of IPV on Depression Symptoms in Mothers



Notes. * p < .05. Unstandardized coefficients in brackets.

Subsample of nonmothers. The model for nonmothers was also a good fit with the data [$X^2(70) = 134.47$, p < .001; RMSEA= .06 (90%CI: .05-.08); CFI/TLI=.96/.94; SRMR=.05]. IPV severity had a significant direct effect (0.232, p < .001) on depression symptoms after accounting for indirect effects through social support and mastery (Table 12).

The standardized specific effects (Figure 7) revealed nonsignificant, negative relationships between IPV severity and social support (-0.045, *p* =.512) and between social support and depression symptoms (-0.052, *p* = .459). IPV severity was moderately and negatively associated with mastery but significant (-0.269, *p* < .001) and mastery was moderately but negatively and significantly associated with depression symptoms (-0.450, *p* < .001), meaning that more severe IPV was associated with lower levels of mastery that resulted in higher levels of depression symptoms.

The standardized indirect effect of IPV on depression symptoms through social support was very weak (0.002) and nonsignificant (*p* < .05); the indirect effect of IPV on depression

symptoms through mastery was also weak (0.121) but greater than that of social support and significant (p =.001). The total effect was significant (0.356, p < .001), with a greater proportion of these effects attributed to the direct relationship between IPV and depression symptoms (Table 12).

Table 12

(Un)standardized Direct and Indirect Effects of IPV on Depression Symptoms in Nonmothers

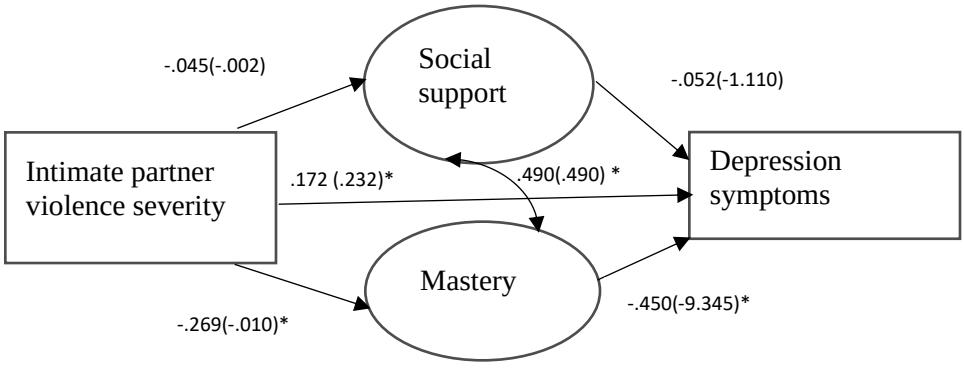
Structural Effects	Unstandardized coefficients	Standardized coefficients (β)	Standard error (SE)	*p*-value
Direct effects				
IPV→depression symptoms	0.172	.232	0.042	< .001
Indirect effects				
IPV→SS→depression symptoms	0.002	0.002	0.003	=.623
IPV→M→depression symptoms	0.089	0.121	0.027	=.001
Total effects				
IPV→depression symptoms	0.263	0.356	0.044	< .001

N = 241

Notes. SS =Social support, M= Mastery

Figure 7

(Un)standardized Direct and Indirect Effects of IPV on Depression Symptoms in Nonmothers



Notes. * p < .05. Unstandardized coefficients in brackets.

Model 2: PTSD symptoms as the dependent variable

The fit indices for the model with PTSD symptoms as the dependent variable were similar to the model with depression symptoms as the dependent variable and suggest a very good fit between the model and the data [$X^2(94) = 165.62$, $p < .001$; RMSEA= .04 (90%CI: .03-.05); CFI/TLI=.97/.97; SRMR=.04]. The standardized coefficient (0.321, p < .001) between IPV and PTSD symptoms supported a direct relationship between IPV severity and PTSD symptoms when the indirect relationships through social support and mastery and covariates were included in the model (Table 13).

For the standardized specific effects (Figure 8), there were significant negative relationships between IPV severity and social support (-0.111, $p = .027$) and between social support and PTSD symptoms (-0.110, $p = .026$), suggesting that women experiencing more severe IPV had lower levels of social support, which resulted in higher levels of PTSD symptoms. Negative significant relationships were also found between IPV and mastery (-0.201, $p < .001$) and between mastery and PTSD symptoms (-0.300, $p < .001$), implying that more severe IPV was linked to lower levels of mastery and that lower mastery was associated with more intense PTSD symptoms. Like the model for depression, in the PTSD model, these standardized specific effects for mastery were also stronger than the standardized specific effects for social support.

The standardized indirect effect of IPV on PTSD symptoms through social support was small and nonsignificant (0.012, $p = .113$). The indirect effect of IPV on PTSD symptoms through mastery was also small but statistically significant (0.060, $p = .001$). Total effect was 0.394 ($p < .001$), with most of these effects attributable to the direct effects of IPV on PTSD symptoms (Table 13).

Mothering, as with the previous main model, was the only significant covariate (-0.084, *p* = 0.035), depicting differences between mothers and nonmothers experiencing more severe IPV which was related to greater intensity of PTSD symptoms (Figure 8). Experiencing more severe IPV was related to greater intensity of PTSD symptoms but mothering was associated with a reduction in the effect of IPV on PTSD by 0.084, after accounting for other direct and indirect effects in the model.

Table 13

(Un)Standardized Direct and Indirect Effects of IPV on PTSD Symptoms

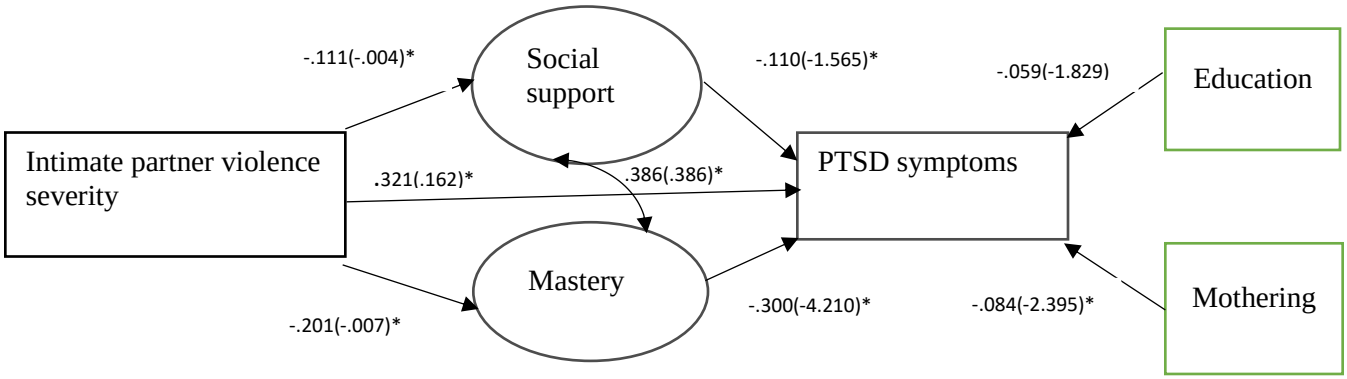
Structural Effects	Parameter estimates	Standardized coefficients (β)	Standard error (SE)	*p*-value
Direct effects				
IPV→PTSD symptoms	0.162	0.321	0.021	< .001
Indirect effects				
IPV→SS→PTSD symptoms	0.006	0.012	0.004	=.113
IPV→M→PTSD symptoms	0.031	0.060	0.009	=.001
Total effects				
IPV→PTSD symptoms	0.199	0.394	0.022	< .001

N = 462

Notes. SS =Social support, M= Mastery

Figure 8

(Un)standardized Direct and Indirect Effects of IPV on PTSD symptoms



Notes. * p < .05. Unstandardized coefficients in brackets.

Intersectional analysis with PTSD symptoms as the dependent variable

In the model with PTSD as the dependant variable, the intersectional analysis tested the hypothesized model separately for subsamples of women who did and did not identify as mothers of dependent children, because mothering was the only significant covariate in the final model.

Subsample of mothers. The model for mothers was found to fit the data well [$X^2(70) = 104.39$, $p = .005$; RMSEA= .05 (90%CI: .03-.07); CFI/TLI=.97/.97; SRMR=.05]. There was a significant direct relationship (0.240, $p < .001$) between IPV severity and PTSD symptoms when the indirect relationships through social support and mastery were included in the model (Table 14).

The standardized specific effects (Figure 9) revealed significant negative relationships between IPV severity and social support (-0.197, $p = .007$) and between social support and PTSD symptoms (-0.244, $p = .001$), indicating that more severe IPV is associated with lower social support, resulting in higher levels of PTSD symptoms. IPV severity was weakly and

negatively associated with mastery but nonsignificant (-0.125, p >.085) and mastery was also weakly but negatively and significantly associated with PTSD symptoms (-0.242, p < .001), such that lower mastery was associated with higher levels of PTSD symptoms. All specific direct relationships were significant except for the relationship between IPV and mastery. But unlike the social support or mastery-depression symptoms in mothers, the mastery-PTSD symptoms was the same as the social support-PTSD symptoms relationship in the subsample of mothers.

The standardized indirect effect of IPV on PTSD symptoms through social support was very weak (0.048) and significant (p < .05). The indirect effect of IPV on PTSD symptoms through mastery was also weak (0.030) but lower than that of social support and nonsignificant (p > .05). The total effects were substantial (0.318, p < .001), of which most effect was accounted by the direct relationship between IPV and PTSD symptoms (Table 14).

Table 14

(Un)standardized Direct and Indirect Effects of IPV on PTSD Symptoms in Mothers

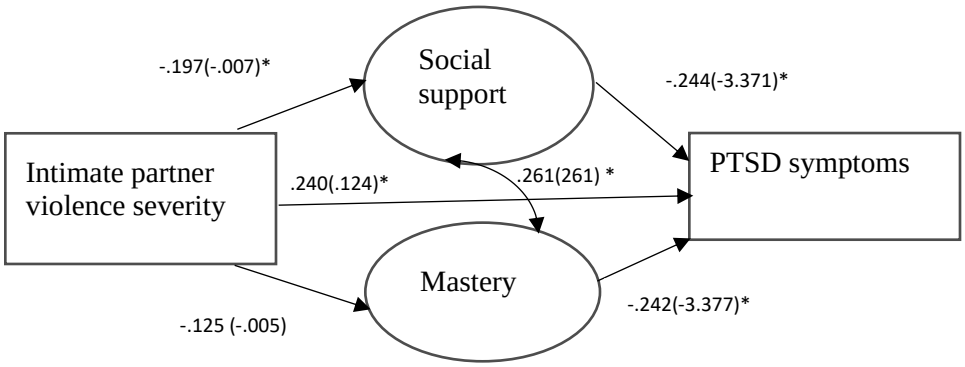
Structural Effects	Unstandardized coefficients	Standardized coefficients (β)	Standard error (SE)	*p*-value
Direct effects				
IPV→ PTSD symptoms	0.124	0.240	0.031	< .001
Indirect effects				
IPV→SS→ PTSD symptoms	0.025	0.048	0.012	=.032
IPV→M→ PTSD symptoms	0.016	0.030	0.010	=.121
Total effects				
IPV→ PTSD symptoms	0.164	0.318	0.033	< .001

N = 221

Notes. SS = Social support, M= Mastery

Figure 9

(Un)standardized Direct and Indirect Effects of IPV on PTSD Symptoms in Mothers



Notes. * p < .05. Unstandardized coefficients in brackets.

Subsample of nonmothers. The model for nonmothers fits the data marginally well [$X^2(70) = 157.76$, $p < .001$; RMSEA= .07 (90%CI: .06-.09); CFI/TLI=.94/.93; SRMR=.05]. There was a significant direct relationship (0.366, $p < .001$) between IPV severity and PTSD symptoms when the indirect relationships through social support and mastery were included in the model (Table 15).

The standardized specific effects (Figure 10) revealed nonsignificant, negative relationships between IPV severity and social support (-0.045, $p = .511$) and between social support and PTSD symptoms (-0.034, $p = .622$). IPV severity was moderately and negatively associated with mastery but significant (-0.269, $p < .001$) and mastery was moderately but negatively and significantly associated with PTSD symptoms (-0.396, $p < .001$), suggesting that more severe IPV was associated with lower levels of mastery, which predicted higher levels of PTSD symptoms.

The standardized indirect effect of IPV on PTSD symptoms through social support was very weak (-0.002) and nonsignificant ($p > .05$). The indirect effect of IPV on PTSD symptoms through mastery was also weak (0.106) but greater than that of social support and significant (*p*

=.002). The total effect was substantial (0.471, $p < .001$), of which most of the effect was attributed to the direct relationship between IPV and PTSD symptoms (Table 15).

Table 15

(Un)standardized Direct and Indirect Effects of IPV on PTSD Symptoms in Nonmothers

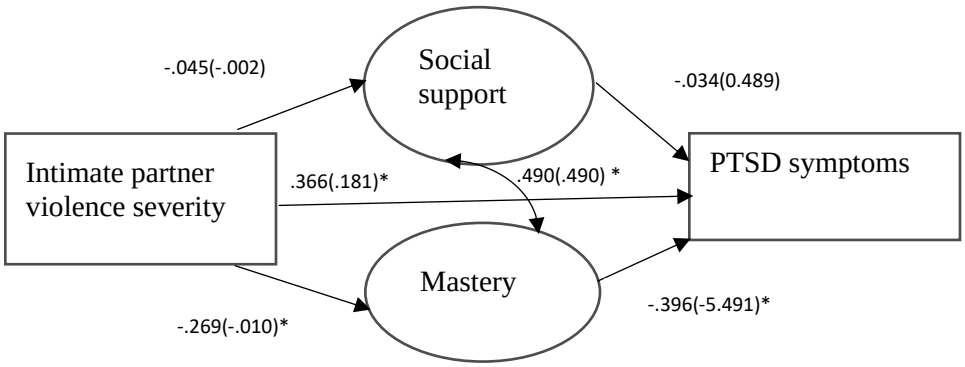
Structural Effects	Unstandardized coefficients	Standardized coefficients (β)	Standard error (SE)	*p*-value
Direct effects				
IPV→ PTSD symptoms	0.181	.366	0.028	< .001
Indirect effects				
IPV→SS→ PTSD symptoms	-0.001	-0.002	0.002	=.693
IPV→M→ PTSD symptoms	0.053	0.106	0.017	< .002
Total effects				
IPV→ PTSD symptoms	0.233	0.471	0.028	< .001

N = 241

Notes. SS = Social Support, M=Mastery

Figure 10

(Un)standardized Direct and Indirect Effects of IPV on PTSD Symptoms in Nonmothers



Notes. * p < .05. Unstandardized coefficients in brackets.

Comparing Effects Across Different Mental Health Outcome Models

Models were compared across different mental health outcomes based on significant unstandardized coefficients as shown in Figures 5-15, to ascertain the relative strength of pathways in separate models.

For the direct relationship between IPV and mental health, the coefficients were the same for depression symptoms and PTSD symptoms (.162, $p < .05$).

In both depression and PTSD models, the relationship between IPV and social support was the same (-.004, $p < .05$). However, the relationship between social support and mental health was much stronger for depression symptoms (-2.758, $p < .05$) than for PTSD symptoms (-1.565, $p < .05$).

The relationship between IPV and mastery was also the same across the two models (-.007, $p < .05$) but the relationships between mastery and mental health was stronger for depression symptoms (-7.565, $p < .05$) compared to PTSD symptoms (-4.210, $p < .05$), with the coefficient for depression about almost twice that of the coefficient for PTSD.

The only indirect effect of IPV on mental health was through mastery and this effect was a bit stronger for depression (0.055, $p < .001$) than for PTSD (0.031, $p = .001$). Thus, mastery accounted for a greater proportion of the relationship between IPV and depression symptoms than for the relationship between IPV and PTSD symptoms. The total effect of IPV on mental health were similar for symptoms of depression (0.228, $p < .001$) and PTSD (0.199, $p < .001$).

With respect to the effects of mothering, the effect of mothering (-4.298, $p < .05$) on depression symptoms was stronger than the effect of mothering (-2.395, $p < .05$) on PTSD symptoms after accounting for other direct and indirect effects in the model.

Comparing Effects Across Models Between Mothers and Nonmothers

For both mental health models, social support and mastery showed a significant bidirectional correlation of 0.386, although the correlation between social support and mastery substantially differed between models for mothers and nonmothers irrespective of the mental health outcome, with results for mothers indicating weak correlation ($r = .261$, $p < .05$) compared to the moderate correlation ($r = .490$, $p < .05$) in nonmothers.

Overall, the IPV-Mental health relationship was weak for both outcomes in both mothers and nonmothers. In mothers, the relationship between IPV and depression symptoms in mothers (.135, $p < .05$) was similar to the relationship between IPV and PTSD symptoms (.124, $p < .05$). In nonmothers, the relationship between IPV and depression symptoms (.232$p < .05$) was similar to the relationship between IPV and PTSD symptoms (.181, $p < .05$). Thus, the IPV-mental health relationship was a little stronger in nonmothers compared to mothers.

In mothers, the significant relationship between IPV and social support was the same for both depressive symptoms (-.007, $p < .05$) and PTSD symptoms (-.007, $p < .05$). However, in nonmothers, these relationships were not significant. In mothers, social support was more strongly associated with depression symptoms (-4.095, $p < .05$) compared to PTSD symptoms (-3.371, $p < .05$). In nonmothers, the effects of social support on mental health were not significant.

In contrast, in nonmothers, there was a significant relationship of the same magnitude between IPV and mastery in both mental health models (-.010, $p < .05$); however, these relationships were not significant in mothers. Mastery was significantly associated with both mental health outcomes in both mothers and nonmothers. For mothers, this relationship was stronger for depression symptoms (-6.163, $p < .05$) than for PTSD (-3.377, $p < .05$). In

nonmothers, mastery also held a stronger relationship with depression symptoms (-9.345, $p < .05$) compared to PTSD symptoms (-5.491, $p < .05$). The strongest effect was observed for nonmothers in the analysis for depressive symptoms.

In mothers, the only significant indirect effect (.030, $p < .05$) of IPV on depression symptoms was through social support, and this was similar to the indirect effect (.025, $p < .05$) of IPV on PTSD symptoms through social support. In nonmothers, the only significant indirect effect (.089, $p < .05$) of IPV on depression symptoms was through mastery, and this effect was a bit stronger than the significant indirect effect (.053, $p < .05$) of IPV on PTSD symptoms through mastery. Thus, like the main model, mastery explained more of the indirect relationship between IPV and depression symptoms than the indirect relationship between IPV and PTSD in nonmothers.

In mothers, the total effect of IPV on depression symptoms (.194, $p < .001$) was approximately the same as the total effect of IPV on PTSD symptoms (0.164, $p < .001$). In nonmothers, the total effect (.263, $p < .001$) of IPV on depression symptoms was a little stronger than the total effect (.233, $p < .001$) of IPV on PTSD symptoms.

Summary of Results

In the preliminary analysis, mean scores for IPV, PTSD and depression were comparable to mean scores found in studies of women who have experienced IPV. Mean scores for both PTSD and depression were above the cut scores for symptoms consistent with a clinical diagnosis. On average, women reported moderate levels of social support and low to moderate levels of mastery. The bivariate correlation analysis showed that the correlation between IPV and PTSD was stronger than the correlation between IPV and depression, prompting the modeling of PTSD and depression as separate outcomes of the direct and indirect effects of IPV through

social support and mastery. Education and mothering were each weakly but significantly correlated with both outcomes and were, therefore, included as covariates in testing the model.

In testing the structural model, both mental health models were found to fit the data well with nonconcurrent mediation of social support and mastery and account for substantial total effects (.306 for depression; .394 for PTSD). Similarly, in both models, most of the total effects were attributable to the direct effects of IPV on mental health (depression or PTSD). The indirect effects were significant but relatively weaker in both models. The indirect effects of IPV on both depression and PTSD were significant through mastery but non-significant through social support. Mastery also explained a greater portion of the relationship between IPV and depression symptoms than between IPV and PTSD symptoms. Mothering had a stronger effect in reducing the impacts of IPV on depression symptoms than on PTSD symptoms, although this effect was fairly small.

Sub-sample analysis was conducted to test the model separately for two groups of women (mothers and nonmothers) as an important way of understanding how mothering as a social location affects relationships in the model as a whole. Like the results from the initial main model, the direct effects of IPV on mental health were stronger than the indirect effects in analyses for each group of women (mothers and nonmothers). However, for women who identified as mothers, social support significantly explained the IPV-mental health relationship. For women who did not identify as mothers, mastery explained the IPV-mental health relationship. These results suggest that different mechanisms may explain the IPV-mental health relationship based on mothering status.

Chapter 5

Discussion and Implications

As a chronic stressor, IPV has been proposed to reduce the availability of social support and mastery, theoretically proposed as being mediators between a stressor (e.g., IPV) and mental health (Pearlin, 1989; Pearlin & Bierman, 2013). Studies examining the relationships between IPV and mental health have analyzed social support as a mediator, but not mastery (e.g., Beeble et al., 2009; Coker et al., 2003; Guruge et al., 2012), or have treated social support and/or mastery as confounders of the impact of IPV on mental health (e.g., Chuang et al., 2012; Rodriguez et al., 2010; Skomorovsky & LeBlanc, 2017), with social locations as control variables (e.g., age, education, etc.).

However, limited attention has been paid to social support and mastery as concurrent mediators of the relationship between IPV and mental health. Further, the overlapping effects of many potentially influential social locations (age, education, living with abusive partner, and mothering) on the relationship between IPV, social support, mastery and mental health have not been previously studied. From an intersectional perspective, these relationships are important because considerable evidence shows that women's experiences of life events, including IPV, are shaped by multiple social locations (George & Stith, 2014) and that a more complete understanding of women's experiences (e.g., IPV-resources-mental health relationships) must account for these locations in order to determine the variations existing in such experiences (Crenshaw, 1989; Hankivsky, 2014).

The dissertation set out to address a fundamental gap in the literature by testing a model that specified the direct and indirect effects of IPV on mental health through social support and mastery, while accounting for the joint influence of age, education, intimate partner status and

mothering. The specific hypotheses of interest were: (i) mastery and social support mediate the direct effects of IPV severity on mental health and (ii) women's social locations (age, education, intimate partner status and mothering) account for variations in the mechanisms between IPV and mental health.

The feminist intersection between gendered experiences (such as IPV) and other markers of identity (such as mothering) is, therefore, likely to more fully capture the context in which harms to women are created, as well as the resources needed to mitigate such harms among different categories of women (see Crenshaw, 1989; Hankivsky, 2014). In support of Collins' (2020) argument that power arises in the form of advantage or disadvantage from our social locations which determine our life's outcomes, the results of this study highlight the value of future investigations that attempt to increase understanding about the complex mechanisms that explain the impacts of IPV on mental health for women in different social locations, inclusive of, for example, those who are mothering and not in a mothering role.

In this final chapter, building on chapter 4, the results of this study are discussed in light of existing theoretical and empirical literature. This chapter uses the phases of analysis (preliminary, tests of the theoretical/hypothesized model, and sub-sample analyses) as an organizing framework. Finally, the strengths and limitation of this study, and the implications of the results for research, practice, and education, are discussed.

Preliminary Analyses

The levels of variables and their correlations found in the preliminary analysis provide some understanding of the coefficients in the hypothesized model (Walters, 2018). Notably, the differential strength of the correlations between IPV-depression symptoms and IPV-PTSD symptoms, which informed the model testing, complements literature suggesting qualitative

differences in the expression of depression and PTSD, despite evidence of substantial comorbidity in these mental health problems (Rosen, Ortiz & Nemeroff, 2020; Elklit et al., 2010). This has largely been explained by the neurobiological effects of traumatic stress which are common to mental disorders inclusive of PTSD and depression, combined with distinctive characteristics in etiologies, onset, and impacts resulting in unique overt manifestations of depression and PTSD (Keyes & Lopez, 2009; North, Suris, Davis & Smith, 2009). As discussed later in this chapter, the results of this study reinforce the need to consider these mental health concerns separately in analyses that attempt to identify complex mechanisms that explain each problem.

Preliminary analyses also contribute new understanding about the measurement of the two mediators (social support and mastery) in the structural model. First, given limited evidence of the psychometric properties of the 5-item Medical Outcomes Study Social Support Survey in diverse samples, the results of the confirmatory factor analysis conducted with items from this scale are noteworthy. Prior to this study, this 5-item scale had only been factor analyzed in one study, by McCarrier et al (2011). Results of the current study showed that all five items were equivalently and significantly explained by the same latent variable (social support) and that a score on any item was strongly and directly related to social support. Overall, the similarly loaded factor-item relationships supports the use of these items as a composite score (Brown, 2015). Consistent with McCarrier et al.'s (2011) study, Cronbach's alpha in this study was acceptable (.87). Collectively, these results extend support for the reliability and validity of the 5-item social support scale among women who have experienced IPV. Researchers and practitioners' access to a psychometrically sound 5-item unidimensional social support scale is important considering that many existing social support measures are much longer (an example

is the 20-item multidimensional Medical Outcomes Study Social Support Survey). The availability of a brief 5-item social support scale could help reduce participants' burden or prevent the introduction of unwanted variance or bias through reduced fatigue, particularly in studies where multiple measures are used (Brown, 2015).

Unlike the social support scale, which is a newer measure, Pearlin's mastery scale has been used in many studies with different populations. However, concerns have been raised that the mix of oppositely worded items on this scale can interfere with its stability across samples, prompting the need for its psychometric analysis for each specific sample (e.g., Eklund, Erlandsson & Hagell, 2012; Lim et al., 2022). While the result of the confirmatory factor analysis in this study provided support for the measurement model, the first five items were strongly and directly related to mastery whereas the last two items were moderately and inversely related to mastery, a result also supported by Lim et al (2022) in a study of 392 family caregivers of older adults in a tertiary hospital in Singapore. Although the mastery scale is an established measure, the dissimilar factor-item relationships may not support the use of this scale as composite score perhaps because of the multiple correlated errors introduced by the measurement approach, consisting of a combination of negatively (first five items) and positively (last two items) worded items (Brown, 2015). In other words, the measurement model was supported with re-specification to include correlated errors but this raises concerns about the use of a one-dimensional scale that includes both negatively and positively worded items. While the inclusion of positively and negatively worded items has been used as a strategy to prevent response set (Brown, 2015), respondents may be confused by this practice. The fact that most of the items on the Mastery scale measure the absence of mastery (and need to be reverse scored) while only two items specifically address the presence of mastery using positively worded items,

is interesting. Given the theoretical importance of the concept of mastery or control within Pearlin's model and in the literature on IPV, efforts to develop self-report measures that focus on positive indicators of this concept are needed.

Structural Relationships in the Hypothesized Model

Results of testing the hypothesized models showed that each model was a good fit with the data, providing support for the model as a whole for nonconcurrent mediation of social support and mastery between IPV and mental health. That is, fit indices suggested that the hypothesized models were supported by the data but for the non-simultaneous mediating effects of social support and mastery in direct effect of IPV on mental health. These results are discussed in separate subsections according to the "direct" and "indirect" effects as well as the sub-sample analysis to deepen our understanding of the variations in these effects in the mothering context, the only significant covariate in the hypothesized model.

Direct Effects of IPV Severity on Mental Health

In the full model that included social support and mastery as mediators between IPV and mental health, substantial direct effects of IPV on mental health were found in models using depression symptoms and PTSD symptoms as the outcome, and these effects were of similar magnitude. In relation to the same direct effects of IPV on depression symptoms and PTSD symptoms, Jonker et al (2019) also found evidence of common factors associated with these mental health problems (i.e., depression and PTSD): depression and PTSD were inversely related to self-esteem. These results are consistent with studies (e.g., Armenta et al., 2019; Elklit et al., 2010) supporting the premise that PTSD and depression share the same neurobiological mechanisms that regulate mental health and overt indicators of depressed mood (particularly in complex PTSD that is more likely to be present in populations that have suffered IPV). These

results are also consistent with a large body of research showing increased levels of symptoms of depression and PTSD, along with greater risk of these conditions in samples of women with history of IPV (Dillon et al., 2013; Lagdon, Armour & Stringer, 2014; Machisa et al., 2022; Paulson, 2020). As discussed in the next section, differences in factors that are included in model testing are expressed in different direct effects across studies.

The direct effects of IPV accounted for most of the prediction in mental health. This suggests a strong relationship between severity of IPV and mental health problems even in the presence of mediators. The pattern of stronger direct effect has also been reported in studies that have tested mediators of the relationship between IPV and (mental) health (e.g., Coker et al., 2003; Ford-Gilboe et al., 2009; Jaquier, Flanagan & Sullivan, 2015; Kilburn et al., 2018; Scrafford et al., 2019; Voth Schrag, 2015). The magnitude of direct effects varied across these studies because of different sample characteristics, the inclusion of different mediators and control variables, the use of different measures of study variables. As noted below, findings of weaker indirect versus direct effects are very common in model testing and can be attributed to many factors but does not suggest that indirect effects are unimportant (Hayes, 2013).

Mediating Effects of Mastery and Social Support

Broadly speaking, weaker indirect effects were found in this study. Although measurement error in the independent variable is more likely to suppress the IPV-mediator pathway and inflate the mediator-mental health pathway (Cole & Preacher, 2014; Walters 2019), the use of SEM allowed the estimation of effects without measurement error at the level of construct-item relations, producing findings that can be trusted. Mediators and control variables were selected based on strong rationale, yet the inclusion of these variables competed for variance available in the outcome (i.e., mental health) such that the proportion of variance each

mediator can explain is diminished in the presence of another competing mediator in the model. Considering that control variables can change the strength and direction of the impact of IPV on mental health and the mechanism of this impact, variables that were not included in the analysis (such as Indigeneity or immigration status) may be important to include but did not have a chance to enhance the indirect effects.

More specifically, results of this study provide support for mastery, but not social support, as a mediator of the relationship between IPV severity and mental health (both depression symptoms and PTSD symptoms). This result is consistent with the notion that more intense chronic stressors, such as IPV, deplete resources to a greater degree and the depletion of these resources more substantially disrupts mental health (Pearlin, 1989; Pearlin & Bierman, 2013). These findings are consistent with a number of other studies (e.g., Coker et al., 2003; Ford-Gilboe et al., 2009; Jaquier, Flanagan & Sullivan, 2015; Kilburn et al., 2018; Scrafford et al., 2019; Voth Schrag, 2015) in which support has been found for the indirect effects of IPV on mental health.

The mediating effects of mastery on the IPV-mental health relationship has been understudied in populations experiencing IPV. Results of this study suggested that the process through which IPV worsens mental health is by reducing women's personal strengths, specifically their sense of mastery or control. The dynamics of abuse include the use of coercion and manipulation to gain control over the woman (Anderson & Saunders, 2003; Herman, 1992; Johnson, 2011; Mosquera & Knipe, 2017). Thus, when IPV is more persistent and severe, the negative effects on women's sense of control would be stronger. A body of literature, including Pearlin, Menaghan, Liebermann and Mullan's (1981) theorization of the stressor-resource-mental health relationship, links lower sense of mastery/control to negative changes in a woman's

perceptions about her adequacy, integrity, confidence and worth in life (Czerny & Lassiter, 2016; Herman, 1992), with these changes then disturbing her mental health. It is, therefore, possible that the process that more fully explains the IPV-mental health relationship could include factors such as adequacy, integrity, confidence, and worth in life, which were not measured in this study. Incorporating these factors, with mastery and social support, into testing the IPV-resource-mental health relationship could expand explanation of this complex process.

In the context of IPV, the mediating effects of both social support and mastery have been supported in only one previous study (Jaradat, 2018), although the outcome in Jaradat's (2018) cross-sectional study was quality of life rather than mental health. In Jaradat's study, the mediating effect of perceived social support was found to be almost twice that of mastery. However, because mastery has been profoundly understudied as a mediating variable, its relationship with other mediating variables, especially social support, is poorly understood. Whether and how mastery (an intrinsic resource) takes priority over mediating mental health in comparison to social support (extrinsic resource) needs further study.

This dissertation was based on an assumption that mastery has a bidirectional relationship with social support (Cantwell, Muldoon & Gallagher, 2014; Hasson-Ohayon et al., 2018; Gerino et al., 2018; Pearlin, 1989; Pearlin & Bierman, 2013). This relationship was included in testing the models and supported by a moderate correlation, which does not imply causation. Further, consistent with the results of this study, an association between social support and mastery does not mean these variables mediate relationships with the same strength and significance. The relationship between mastery and social support in the context of IPV and mental health may also be more complex than tested in this study, including the moderating effects of both variables. For example, mastery may moderate the effect of social support on mental health as

found in Hasson-Ohayon et al's (2018) in which higher social support predicted lower levels of parenting stress only for women with higher mastery. Accounting for the different roles of social support and mastery in a model for the stress process may expand understandings of IPV responses. The inclusion of both the mediating and moderating effects of these variables in a single model may produce their *true mediated effects*.

Social support was not found to mediate the IPV-mental health relationship in this study. This result is noteworthy because it is inconsistent with Pearlin's (1989) and Pearlin & Bierman's (2013) theoretical position that social support is a critical external resource that can mediate the effects of stressors such as IPV on (mental) health and with the results of many studies (e.g., Agyemang et al., 2022; Coker et al., 2003; Beeble et al., 2009; Sapkota et al., 2022) which have found support for the mediating effects of social support on the relationship between IPV and (mental) health. However, in an analysis of data from Canadian women with histories of IPV and who were no longer living with an abusive partner, Guruge et al.'s (2012) also failed to find support for mediation for social support; rather, social conflict was found to moderate the relationships between social support and mental health, such that this relationship was stronger in the presence of lower conflict. Like the sample in Guruge et al.'s study, the majority of women (72.3%) in the current study sample were not living with an abusive partner. Further, the level of social support was moderate in both studies and the path between IPV and social support was weaker. For women who are no longer living with an abusive partner, it is possible that their access to social support is less affected by ongoing IPV because without being in regular close physical proximity, the abusive partner may be less able to isolate them or to interrupt communication with family members and friends. It is possible that the mediating effect of social support on the IPV-mental health relationship may be supported in studies of women who are

living with an abusive partner. However, this requires further study. This dissertation research and Guruge et al.'s (2012) study are perhaps exposing sample-specific contexts in which social support may or may not be relevant as a mediator in the stress process. Lakey and Cohen (2000) argue that social support is an artifact of culturally informed relationships, and that theorization of mediating effects of resources may have underestimated the contextually informed importance of social support, more specifically. That greater social support was associated with better mental health in this study is consistent with a large body of evidence about the direct effects of social support on mental health (Bacchus et al., 2018; Beeble et al., 2009; Capaldi et al., 2012; Chuang et al., 2012; Rodríguez et al., 2010; Skomorovsky & LeBlanc, 2017; Taylor, 2011). The lack of support for mediation (that IPV eroded social support which then resulted in poor mental health) does not undermine the important of social support as a predictor of mental health in the context of IPV (Bacchus et al., 2018; Beeble et al., 2009; Capaldi et al., 2012; Chuang et al., 2012; Rodríguez et al., 2010; Skomorovsky & LeBlanc, 2017; Taylor, 2011).

There were also slightly different quantitative pathways within the hypothesized models. For example, mastery accounted for a greater proportion of the relationship between IPV and depression symptoms than PTSD symptoms. Jonker et al (2019) found that while depression symptoms were associated with physical abuse, PTSD symptoms were associated with sexual abuse. Despite PTSD and depression sharing the same neurobiological regulation of mental health and overt indicators of depressed mood, these conditions differ because of unique etiologies, onset and duration of severity of symptoms (Armenta et al., 2019; Elklit et al., 2010). Accordingly, social support and mastery may be less adequate for explaining traumatic reactions to IPV, than in explaining depression. It is possible that these findings may be due, in part, to the use of a measure of PTSD symptoms that is consistent with classic PTSD but does not capture

the full spectrum of PTSD symptoms that are consistent with complex PTSD and would be more appropriate for women in the sample.

Herman (1992) theorized that complex PTSD, and not PTSD, is the reaction experienced in response to chronic and severe multifaceted forms of trauma, such as IPV. The PTSD measure used in this analysis reflects reactions to single traumatic incidents and not complex PTSD. The unique effects of prolonged interpersonal trauma such as IPV could be affect dysregulation, aggression against self and others, dissociative symptoms, somatization, and personality change, which characterize complex PTSD (Herman, 1992; see also Cloitre et al., 2009; Ford-Gilboe, Heslop & Campbell, 2022; Resick et al., 2012). These additional symptoms are not fully accounted for by the DSM protocols which informed the measurement of PTSD used in this study. This, too, may partially explain the smaller indirect effects of IPV on mental health for PTSD compared to depression. Differences in responses to treatment among populations dealing with PTSD and complex PTSD have been documented. For example, trauma-focused cognitive-behavioral treatment (TFCBT) was shown to be an effective form of therapy for PTSD, but not for DESNOS populations. This is important given that DESNOS reflects many aspects of Complex PTSD (Bisson, Roberts, Andrew, Cooper, & Lewis, 2013). This suggested that the mechanisms that explain classic and complex PTSD may be different.

Social Location: Mothering as the Only Significant Covariate in the Model

For women experiencing IPV, the positive effect of mothering in reducing the intensity of mental health problems is interesting, although mothering had a stronger effect in reducing depression versus PTSD symptoms. These results suggest that mothering is *protective* of mental health in the context of IPV and depression versus PTSD symptoms differences could be explained by the above noted limitations of classic PTSD measures. The protective impact of

motherhood can be explained by the positive meaning and values that women and their communities ascribe to mothering. It seems that women's sense of social worth in connection with the reality of their reproductive capacity and their role in raising children persists in the context of IPV and that such sense of worth counters, to some extent, the negative impact of IPV. While the experience of IPV and its effects are affronts to the positive social value of women's role in reproducing and to raise children, these positive values are also often understood to interact with patriarchy-oriented norms and expectations. Like other social locations, mothering is neither static nor homogenous. Whether the protective effect of mothering in this study is more with mothering females or males or (non-)biological children is up for further studies.

Kawash (2011) argues that motherhood by its nature is a life changing experience which promotes maturity; maturity is understood to enhance one's capacity to deal with life events and problems such as IPV, leading to a better state of (mental) health. Maturity, which may also involve commitment, including commitment to children, is a positive human experience and can serve as the basis for desirable mental health in spite of the difficulties associated with experiencing IPV (see Keyes & Lopez, 2009). Childbearing and rearing generate satisfaction with life (Borneskog, Lampic, Sydsjö, Bladh & Svanberg, 2014), perhaps because of generational continuity of biology and/or improved access to resources. It is often traditionally deemed an honour and joy to fulfill responsibilities related to childbearing, mothering, and nurturing activities in the family. Satisfaction with life is also found to promote reproduction (Mencarini, Vignoli, Zeydanli & Kim, 2018) and better mental health is strongly associated with life satisfaction (Fergusson et al., 2015). Thus, even in the context of IPV, mothering may coincide with better mental health.

The very common saying that *it takes a village to raise a child* expresses the availability of helping hands for mothers to engage in positive interaction with children, who are expected to grow into responsible adults in the community. This also demands mothers' timeless sacrifice to positively raise their children and gain respect from the community (Green, 2015). Respect from community signifies its acceptance of mothers even as such demands can be stressful for mothers (Green, 2015). To some extent, it is possible that the positive meaning and experience derived from mothering may outweigh the stress associated with it and that this could support women's mental health even in the IPV context.

The fairly weak protective effect of mothering on mental health may reflect the reality that women who are mothering in the context of IPV often face judgments about their capabilities (Green 2015; Kawash, 2011) and structural barriers (e.g., poverty, stigma, racism) that can affect their mental health. In a recent qualitative study of women experiencing IPV and service providers of these women, Scrafford et al (2022) suggested that service providers underestimated mother's strengths in overcoming IPV and its effects more than the mothers themselves, indicating the tendency to problematize women as *deficient* in parenting when these women were experiencing abuse. Further, arguments about the deficits of these women are abundant in the literature, including in the nursing literature (Broughton, Ford-Gilboe & Varcoe, 2022) and have predominantly been established from interpretation comparing mothers dealing with IPV and those who were not experiencing IPV (see reviews: Ateah et al., 2019; Austin et al., 2019). To more fully understand the positive effects of mothering in the context of IPV, studies are needed to analyze differences in experiences of mothering and women's social locations in relation to the negative mental health effects of IPV.

Social Location: Variations in the IPV-Resources-Mental health Relationship

Informed by prior analysis that identified mothering as the only significant covariate in the model, subsample analysis was conducted to understand intersectional variations in the process through which IPV impacts mental health based on whether women were or were not mothering dependent children. While there was support for mediation in both models, the mediators differed across these two groups, suggesting that there may be different mechanisms based on mothering status. While social support significantly mediated the relationship between IPV severity and mental health among mothers, for women who did not identify as mothering dependent children, mastery mediated the IPV-mental health relationship.

Research also supports the negative effects of IPV on mothers' mental health (Ateah et al., 2019; Austin et al., 2019), but without also concurrently examining and comparing the experiences of nonmothers, who are also at risk of experiencing the negative mental health effects of IPV (e.g., Bacchus et al., 2018). The results of this study add to existing literature by providing support for the negative effects of IPV on mental health for women who are and are not mothering dependent children. Specifically for mothers, mental health problems could adversely interfere with childrearing; for example, the quality of mother-child relationship may be disrupted when mental health problems lead to limited communication and bonding with child (Chiesa et al., 2018). Although not tested in the study, mental health problems in women who are mothering dependent children or not mothering dependent children may also threaten the quality of their lives by interfering with their functional integrity. To this end, this dissertation is a first step forward in bridging disjointed knowledge about the processes by which IPV affects mental health for women based on their positioning relative to mothering.

The analysis of the variation in IPV-resources-mental health in women who were mothering and were not mothering dependent children revealed two key issues. First, it is interesting that the strength of the bidirectional relationship between social support and mastery was weaker for women who were mothering dependent children. Although the direction of the relationship between social support and mastery was not tested in this study, it is possible that differences in the direction of effects between these variables could partly explain differences in the strength of their association for women based on mothering status. Taking as an example the mastery-social support direction, if women's feelings of control promote access to social support (as previously noted in Chapter 2), then mothering may interact with severity of IPV to reduce women's feelings of control and, in turn, lower access to social support. This is the reverse in the nonmothering context where moderate correlation between mastery and social support may indicate substantial influence of mastery on social support. Qualitative studies (e.g., Bentley, 2017; Pratt-Eriksson, Bergbom & Lyckhage, 2014; Scrafford et al., 2022) suggest the vital role of women's sense of mastery in moving on with their lives in the context of support. However, enduring IPV is especially inimical to attainment of mastery because women perceive that they are unable to control many aspects of their lives, including keeping children safe. The negative impacts of enduring IPV may be unhelpful for maintaining social support that women deem so crucial for mothering dependent children.

Second, the difference in the mediators of the IPV- mental health relationship for women who were and were not mothering dependent children may reflect the most *relevant* resources for women's unique contexts in response to the negative mental health effects of IPV. Within mothering, qualitative studies have shown that social support is more relevant to maintaining the welfare of their children, a priority for women who are mothering, than for women's own safety

(Dufort et al., 2013; Randell et al., 2011; Zink et al., 2003). At the same time, mothers may experience the eroding of their social support by IPV, leading to worsening mental health. Typically, women who are mothering face more challenges in leaving an abusive partner and are often legally/culturally compelled to maintain contact with abusive partner even after separation (Scrafford et al., 2022). In this context, women may be more likely to feel like they are alone in the struggle and lacking support. Given that women who are mothering in the context of IPV often prioritize the needs of their children over their own needs, IPV further erodes their access to social support and affect their mental health. Based on the review by Sylaska and Edwards (2014) supporting the tendency of social network to display judgmental attitudes towards IPV disclosure, it is also possible that mothers, who have the expectation of keeping children in positive environment, may be more likely to shy away from social connections and support in order to keep the abuse private, avoid negative reactions and/or assure the public that the children are safe despite the occurrence of IPV.

In contrast, women who are not mothering dependent children may not be dealing with the same social pressures and expectations to raise children in a positive environment. When not faced with such demands, these women may be more immune to negative social reactions toward their experiences of IPV because the absence of children means that may experience less public visibility and scrutiny. Rather, results of the study showed what is different about women's lives when they are not mothering dependent children: IPV erodes mastery leading to poorer mental health. Without the concerns of dependent children and the needs to stay in contact with an abusive partner, IPV may have less of an effect on women's social networks. The ongoing violence and coercive control may have a stronger effect on them personally, eroding their sense of control or perceptions of themselves.

Overall, the *quantification of the processes* of explaining the role of resources in the IPV-mental health relationship in the context of mothering status is illuminating. Although these relationships appear to be complex and extend beyond the exploratory analysis conducted, there is an emphasis on the value in adopting a feminist intersectional lens in uncovering differences in mechanisms for the relationships between IPV and mental health among different categories of women (i.e., mothering versus non-mothering). Thus, additional research is required to more fully examine the role of mothering and other social locations in the IPV-mental health process.

Strengths and Limitations of Study

Given the cross-sectional nature of this analysis, the results reflect statistical prediction and not causation. With secondary analysis, decisions about the inclusion of variables were based, in part, on the availability of data collected in the primary study, including variables capturing the complexity of women's social locations. In the interpretation and application of this study, other strengths and limitations relate to concerns of validity. While the multi-site recruitment of women from diverse social locations strengthened external validity of this study, the majority of participants were not living with their abusive partner and women who could not speak English were excluded. Thus, the inclusion and exclusion criteria affect the external validity of the study. The internal validity of this study may be compromised by factors that were not measured but could also affect women's mental health (e.g., medication use, chronic stressors such as poverty, complex PTSD, etc.), including unobserved factors that could be inversely related to social support and mastery. Although this study provides beginning insights about how women's social locations may shape their mental health in the context of IPV, and the mechanisms that explain the effects of IPV on mental health, with a specific focus on mothering status, other social locations not included in this study, such as Indigeneity and immigration

status are important to consider. In future, studies are needed that examine the influence of a broader range of social locations, and the intersection between them, as a step in producing more comprehensive and nuanced understandings about the mechanisms explaining the effects of IPV on women's mental health. Considering that there are many challenges in conducting intersectional analyses in quantitative studies, emerging methodological literature (Bauer, 2014) could be used to inform the design of these studies.

In this study, the SEM-based analysis did not take full advantage of SEM's capacity to estimate and account for error because of the mixed-model approach which used both latent and manifest variables to test the hypothesized model. This is important to acknowledge given the explanation provided on page 52 for conducting the analysis this way. Another potential threat to internal validity is socially desirable responses or reporting bias for self-reported measures (especially when survey questions are sensitive), although this may have little role to play in the iCAN trial because it was confidential, and women may have felt more at ease with no direct contact with an interviewer (iCAN used online recruitment and data collection strategies).

Implications For Research, Education and Practice

The results of this study have implications for future research, education and practice, as described in the sections that follow.

Implications for Future Research

In terms of research implications, additional psychometric testing could be conducted to provide additional support for the reliability and validity of the newer social support scale. Considering the suggested instability of Pearlin's mastery scale across samples, psychometric analysis of this scale is important prior to modeling its relationship with other variables. Given also the critical importance of control to survivors of trauma, the development and testing of new

measures of mastery with items that are worded in positive direction may be warranted to reduce the confusion possibly faced in completing negatively-worded items in the mastery scale.

While depression and PTSD symptoms overlap, the results of this study suggest that there is merit in conducting separate analyses in studies focused on predicting these outcomes. It may also be important for preliminary correlational analysis to be conducted to isolate relationships between IPV and each mental health variable. These analyses will be enlightening if complex PTSD were also studied in addition to PTSD.

Theoretically, Pearlin's (1989) proposition about the *parallel mediating effects* of social support and mastery on the relationship between a chronic stressor (e.g., IPV) and mental health was not corroborated by this study. For both proposed mediators, the lack of support for mediation may have been related to context-specific factors in this study, including sample characteristics. Given that few studies have tested concurrent mediating effects of social support and mastery on the IPV-mental health relationship, additional studies conducted with samples that vary from that used in this analysis are recommended. Because mastery was the only significant mediator in the full hypothesized model, future research should examine whether social support, mastery or other variables not considered in this analysis explain mental health in the context of IPV and specifically how mastery and other protective factors (e.g., mothering) predict women's mental health (i.e., depression symptoms than PTSD symptoms).

Research could also incorporate feminist-intersectionality into testing the IPV-Resources-Mental health relationship to promote a fuller understanding of context/sample-specific effects of social support and/or mastery. Feminist intersectionality goes beyond studying singular factors impacting mental health and encompass relationships and interactions between social locations across multiple levels of systems/institutions to determine how, for example, mental health is

shaped across distinct groups in different circumstances (Bauer, 2014; Crenshsaw, 1989; Collins, 2019). Moreover, the use of SEM-based analysis which adjusts for measurement error in construct-items relations is recommended in order to capture true variance in the hypothesized model.

Given that IPV's impact on mental health (PTSD symptoms and depression symptoms) through social support and mastery in the context of age, education, partner status and mothering have not been analyzed together, the analysis of the cross-sectional data regarding these relationships serves an initial benchmark for modeling these relationships longitudinally. Unlike cross-sectional analyses, longitudinal studies could investigate patterns of change over time, including when and how trajectories of IPV, social support, mastery and mental health are related over time (see Preacher et al., 2008). In fact, to test Pearlin's (1989) full proposition about the Stressor-Resource-Mental health relationship, more complex cross-sectional and longitudinal analyses are needed to examine causal processes that explains the IPV-mental health relationship while adjusting for the concurrent influence of important aspects of women's social location, such as those that could not be included in this study (e.g., Indigeneity and immigration status). These types of analyses would be a step forward in providing a more complete understanding of complex stress process relationships in the context of important differences among women.

Additional research is also needed to specifically explore the interactive effect of mothering in the IPV-resources- mental health relations, including comparative studies that attempt to address the discontinuities in IPV research where women engaged in mothering (of all kinds, see Kawash 2011) are studied apart from non-mothers.

Implications for Nursing Education and Practice

The results of this study provide initial insights about the value of considering how different social locations can affect IPV-resources-mental health relationship, specifically among mothers and non-mothers. I highlight the importance of teaching and learning through a feminist intersectional lens in order that learners come to terms with distinct groups and how they act as agents in identifying and accessing specific resources. As this study suggests, women identifying as mothers and experiencing IPV experience poorer mental health through lower levels of social support. But women not identifying as mothers and experiencing IPV experienced poorer mental health through lower levels of mastery. This analysis was achieved through complementing the testing of the Stress Process Model with feminist intersectionality approach which creates an awareness that our life's outcomes arise from intersecting social locations which dictate our experiences of IPV, its impacts and mechanisms. The integration of intersectionality into nursing education and practice may help raise awareness of the importance of the social context of women's lives, and how these advantage or disadvantage women in terms of IPV and its effects and resources. This could open up thinking and reduce judgements and biases, leading to more tailored and respectful approaches to care.

Specifically in the practice arena, the result of this study lend further supports to a large existing body of evidence that document the negative impacts of IPV on women's mental health. However, results contribute to this literature to reinforce how violence often erodes women's mastery (or control), leading to poorer mental health. Thus, women who have experienced IPV may be entering the health care environment desiring more choice and control but not expecting it. Given that choice and control are critical to healing from abuse and traumatic experiences such as IPV, nurses have an important role to play in fostering women's control when they seek

care. This may require conscious attention to putting the women's priorities first, rather than following standard policies or usual ways of practicing.

Adopting patient-centered care, which involves tailored nursing care to enhance patients' or clients' experiences of control over their (mental) health, is one means to address women's holistic preferences for maintaining well-being (College of Nurses of Ontario [CNO], 2021). Beyond patient-centered care, adopting principles of Trauma- and Violence-Informed Care (TVIC) in practice is a promising approach for prioritizing women's choice, control and safety, while concurrently appreciating the multiple ways that structural inequities affect women's lives and how they navigate experiences of violence and health, and prioritizing collaboration and shared power (Wathen & Varcoe, 2021). Although TVIC is gaining attention, it has yet to be widely adopted into interventions for women who have experienced IPV (Wathen & Mantler, 2022).

TVIC brings the social determinants of health and structural violence into awareness (Befus, Kumodzi, Schminkey, & St Ivany, 2019). As explained in chapter 2, the theoretical perspectives of social determinants of health and structural violence converge by highlighting risk of harms and limited resources based on unique social locations, which are micro manifestations of society's institutional hierarchical oppressions, related to disproportionate risk of harms and specific resources experienced by some groups of women, and not others. Thus, based on the results of this study, nursing interventions/practice may need to be different for women who are mothering and not mothering given the differences in the mechanisms by which IPV affects mental health. This draws nurses' attention to the potential for differences in women's IPV experiences, shaped by their own resources and social location.

These perspectives can lead to developing tailored interventions that are flexible, consider what is important in each woman's situation, and to work to offer support that 'fits' with each woman's specific needs and her context. In other ways, these perspectives promote countering of biases in the nursing literature on mothering in the context of IPV, which includes a tendency to focus on deficits and overlook capacities (Broughton, Ford-Gilboe & Varcoe, 2022), with specific focus on the resources women have available to them to assist them in responding to harms such as IPV and its effects.

In light of the differences in the magnitude of bidirectionality between mothers and non-mothers discussed earlier in this chapter, multiple stressors (e.g., mothering + IPV) could further deplete women's sense of mastery, making it more challenging to find social resources to help maintain or improve their mental health, which is vitally important for societal performance and integrity and quality of life. This understanding may enhance the innate expression of empathy and respect for those attempting to access social support, because we recognize women as active agents who have tried to resolve IPV within their relationships but to no avail. Given that IPV is still a stigmatizing experience, the fact that these women seek social support should alert practitioners, communities and families to the multiplicity of stressors in their lives and the need for compassion and non-judgmental assistance.

It may be important to also acknowledge that mental health is linked to physical health and that resources identified to be relevant in response to the mental health effects of IPV may help alleviate physical health problems that could arise from IPV. Although these connections were not tested in this study, it was noted in chapter 2 that literature supports these connections (see Dekel, Shaked, Ben-Porat & Itzhaky, 2020). This understanding support holistic interactive practices for both physical and mental health problems across the continuum of care.

Conclusion

Informed by the Stress Process Model and Feminist Intersectionality, the study advances knowledge of the negative mental health impacts of intimate partner violence on Canadian women by offering novel insights about the role of mastery in mediating the relationship between IPV and mental health and the potential role of mothering (a key social location) in protecting against these negative impacts. These results underscore the complexity and variation in women's experiences of violence and the mechanisms that explain the impacts of IPV on mental health and point to the value of intersectional approaches in research and in developing programs and policies that prioritize women's choice and control, and are responsive to their varied needs and contexts, as a pathway to better mental health.

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Appendix A

Study Instruments

Composite Abuse Scale (CAS)

Next, we will ask you questions about many abusive actions and threats that women report. You may not have experienced some of these. Please tell us how often these things have happened to you in the past 12 months. These questions may be upsetting. You might want to take a break before you do them. Maybe stand up and go get a glass of water.

In the past 12 months, my partner/ex-partner:

	Never	Only Once	Several Times	Once a month	Once a week	Daily
1. Told me that I wasn't good enough	0	1	2	3	4	5
2. Kept me from medical care	0	1	2	3	4	5
3. Followed me	0	1	2	3	4	5
4. Tried to turn my family, friends and children against me	0	1	2	3	4	5
5. Locked me in the bedroom	0	1	2	3	4	5
6. Slapped me	0	1	2	3	4	5
7. Forced me to have	0	1	2	3	4	5
8. Told me that I was ugly	0	1	2	3	4	5
9. Tried to keep me from seeing or talking to my family	0	1	2	3	4	5
10. Threw me	0	1	2	3	4	5
11. Hung around outside my house	0	1	2	3	4	5
12. Blamed me for causing their violent behavior	0	1	2	3	4	5
13. Harassed me over the telephone	0	1	2	3	4	5

	Never	Only Once	Several Times	Once a month	Once a week	Daily
14. Shook me	0	1	2	3	4	5
15. Tried to force me to have sex	0	1	2	3	4	5
16. Harassed me at work	0	1	2	3	4	5
17. Pushed, grabbed or shoved me	0	1	2	3	4	5
18. Used a knife or gun or other weapon	0	1	2	3	4	5
19. Became upset if dinner/housework wasn't done when they thought it should be	0	1	2	3	4	5
20. Told me that I was crazy	0	1	2	3	4	5
21. Told me that no one would ever want me	0	1	2	3	4	5
22. Took my wallet and left me stranded	0	1	2	3	4	5
23. Hit or tried to hit me with something	0	1	2	3	4	5
24. Did not want me to socialize with my female friends	0	1	2	3	4	5
25. Forced me to perform sex acts that I did not enjoy or like.	0	1	2	3	4	5
26. Refused to let me work outside the home	0	1	2	3	4	5
27. Kicked me, bit me or hit me with a fist	0	1	2	3	4	5
28. Tried to convince my friends, family or children that I was crazy	0	1	2	3	4	5
29. Told me that I was stupid	0	1	2	3	4	5
30. Beat me up	0	1	2	3	4	5

Medical Outcomes Study Social Support Survey (MOS-SSS)

Sometimes people need emotional support or help from others. Next, we ask you questions about the support available to you.

How often is each of the following kinds of support available to you if you need it? Please choose on option for each statement.

	None of the time	A little of the time	Some of the time	Most of the time	All of the time
1. Someone to confide in or talk to about yourself or your problems	1	2	3	4	5
2. Someone to turn to for suggestions about how to deal with a personal problem	1	2	3	4	5
3. Someone to help with daily chores if you were sick	1	2	3	4	5
4. Someone to love and make you feel wanted	1	2	3	4	5
5. Someone to get together with for relaxation	1	2	3	4	5

Pearlin's Mastery Scale

The next questions are about how much you feel you are in control of important things that affect your life. How strongly do you agree or disagree with the following statements?

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. I have little control about things that happen to me.	0	1	2	3	4
2. There is really no way I can solve some of the problems I have.	0	1	2	3	4
3. There is little I can do to change many of the important things in my life.	0	1	2	3	4
4. I often feel helpless dealing with the problems of life.	0	1	2	3	4
5. Sometimes I feel that I'm being pushed around in life.	0	1	2	3	4
6. What happens in the future mostly depends on me.	0	1	2	3	4
7. I can do just about anything I really set my mind to.	0	1	2	3	4

PTSD checklist, Civilian Version (PCL-C)

In the past MONTH, how much have you been bothered by:

	Not at all	A little bit	Moderately	Quite a bit	Extremely
1. Repeated, disturbing memories, thoughts, or images of a stressful experience from the past?	1	2	3	4	5
2. Repeated, disturbing dreams of a stressful experience from the past?	1	2	3	4	5
3. Suddenly acting or feeling as if a stressful experience were happening again (as if you were reliving it)?	1	2	3	4	5
4. Feeling very upset when something reminded you of a stressful experience from the past?	1	2	3	4	5
5. Having a physical reaction, for example heart pounding, trouble breathing, sweating, when something reminded you of a stressful experience from the past?	1	2	3	4	5
6. Avoiding thinking about or talking about a stressful experience from the past or avoiding having feelings related to it?	1	2	3	4	5
7. Avoiding activities or situations because they reminded you of a stressful experience from the past?	1	2	3	4	5
8. Trouble remembering important parts of a stressful experience from the past?	1	2	3	4	5
9. Loss of interest in activities that you used to enjoy?	1	2	3	4	5
10. Feeling distant or cut off from other people?	1	2	3	4	5
11. Feeling emotionally numb or being unable to have loving feelings for those close to you?	1	2	3	4	5
12. Feeling as if your future will somehow be cut short?	1	2	3	4	5

13. Trouble falling or staying asleep?	1	2	3	4	5
14. Feeling irritable or having angry outbursts?	1	2	3	4	5
15. Having difficulty concentrating?	1	2	3	4	5
16. Being 'super-alert' or watchful or on guard?	1	2	3	4	5
17. Feeling jumpy or easily startled?	1	2	3	4	5

Center for Epidemiologic Studies Depression Scale (CESD)

Here is a list of the ways you might have felt or behaved recently. How often have you felt this way in the PAST WEEK or SO?

	Not at all or less than 1 day	1-2 days	3-4 days	5-7 days	Nearly every day for 2 weeks
1. My appetite was poor.	0	1	2	3	4
2. I could not shake off the blues.	0	1	2	3	4
3. I had trouble keeping my mind on what I was doing.	0	1	2	3	4
4. I felt depressed.	0	1	2	3	4
5. My sleep was restless.	0	1	2	3	4
6. I felt sad.	0	1	2	3	4
7. I could not get going.	0	1	2	3	4
8. Nothing made me happy.	0	1	2	3	4
9. I felt like a bad person.	0	1	2	3	4
10. I lost interest in my usual activities.	0	1	2	3	4
11. I slept much more than usual	0	1	2	3	4
12. I felt like I was moving too slowly.	0	1	2	3	4
13. I felt fidgety.	0	1	2	3	4
14. I wished I were dead.	0	1	2	3	4
15. I wanted to hurt myself.	0	1	2	3	4
16. I was tired all the time.	0	1	2	3	4
17. I did not like myself.	0	1	2	3	4
18. I lost a lot of weight without trying to.	0	1	2	3	4
19. I had a lot of trouble getting to sleep.	0	1	2	4	4
20. I could not focus on the important things.	0	1	2	3	4

Appendix B

Letter of information and Consent

LETTER OF INFORMATION AND CONSENT
Testing an internet-based safety decision aid for women experiencing intimate partner violence (Phase 2)

"I CAN Plan 4 Safety Study - Phase 2"

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Joanne Hammerton, Research Manager- 519-661-2111.

Name of Sponsor:

This research project is funded by the Canadian Institutes of Health Research.

Conflict of Interest: None to declare.

Letter of Information

Introduction:

We invite you to take part in a research study to test a new online tool for women who are experiencing abuse. The tool is called 'I CAN plan 4 safety". A group of 450 Canadian women from Ontario, British Columbia, and New Brunswick will take part. This letter gives you information to help you decide if you want to take part in this study.

Background:

Safety planning is an important way to reduce the impacts of Intimate Partner Violence (IPV), but fewer than 1 in 5 Canadian women access support from violence services to assist them in safety planning.

Purpose of the Study:

The purpose of this study is to learn whether using an online tool affects the safety and health of women who are experiencing abuse from a partner or ex-partner.

Who is Eligible to Take Part?

You can take part if you:

- Are an adult woman, 19 years of age or older
- Are fluent in English
- Live in Ontario, British Columbia, or New Brunswick
- Are experiencing violence/abuse from a current or former partner
- Are comfortable using a computer and the internet
- Have access to a safe computer with internet
- Have an email address that is safe (e.g. your ex/partner can't access)

What Taking Part Means:

If you agree to take part, you will be randomly assigned (like flipping a coin) to complete one of two online safety tools. Both tools provide information about risks, ways to improve safety, and services and resources for women experiencing violence. One tool provides general information; the other provides personalized feedback based on your risks and priorities for safety.

You will complete the online tool at your own pace on a confidential study website. This takes about one hour. You will be asked to complete the tool 4 times: now and 3, 6 and 12 months later. You will be emailed the website address, a username and a password to access the tool. You can access the online tool 24 hours a day, 7 days a week over the 12 months of the study.

When you complete the tool, you will be asked questions about your health and safety for you and your family. It also includes questions about violence you may have experienced and what you have done to stay safe. You can call or email a research assistant to ask questions if you need help with the tool. We will do our best to answer your questions quickly (usually within 48 hours).

We will also ask you for safe contact information. We will remind you when it is time to complete the online tool again. We will also contact you once or twice between your 4 sessions to make sure we have your contact information.

If you complete the online tool which offers general information, you will be given a chance to access the personalized tool at the end of the study if you wish.

Voluntary Participation/Withdrawal from Study:

Taking part in this study is voluntary. You may refuse to answer specific questions. However, in the online tool, the answers to some questions, such as the province where you live, are needed for the tool to work correctly. If you prefer not to answer these questions, you will not be able to complete the study. You may decide not to be in this study. At any time, you may leave the study, or ask to have your information removed. By taking part in this research study, you are not waiving any of your legal rights.

Possible Risks and Harms*:*

The risks of taking part in this study are small. You may become upset if some questions make you think of painful experiences of abuse. Take a break if you feel upset, and return to the tool later. In the tool, you will find information about who you can call for support. You can also call a research assistant for more information about community resources.

Your partner might become angry if that person learns that you are taking part in this study. We will try not to increase your danger. We will only contact you in the ways that you tell us are safe. We will not tell anyone else who answers the phone who we are or why we are calling.

Possible Benefits:

You may not benefit from this study. The tool may make you more aware of actions you can take to be safe and services that can help you. You can use the safety and resource information anytime. What we learn in this study may help develop ways to support women who are experiencing abuse.

Confidentiality of the Information You Provide:

The information you tell us will be kept confidential. However, if you tell us that you are at risk of harming yourself or others, by law we must share this information. If we are going to share this information, we will talk to you first.

If you take part, you will be given a study ID number. Your answers to questions in the online tool will be saved using this ID number on a secure password protected server. Your name or other identifying information will be saved on a different secure server at the University of Western Ontario, separate from your answers to the online tool.

All study information will be stored in a locked cabinet at The University of Western Ontario and/or in secure computer files. Only the research team will have access to these files. All study records will be kept for at least 5 years. After that time, computer files may be deleted and paper files shredded.

Representatives of the University of Western Ontario Health Sciences Research Ethics Board may look at the study records or access your research information to make sure the study has followed proper laws and guidelines.

What we learn in this study will be shared in research journals, magazines, newspapers, public talks and on the study website. If you are interested, please go to the study website for updates. No names will be used in sharing the findings.

Costs and Compensation:

There is no cost to taking part in this study. To thank you for your time, we will give you a gift card (e.g. Walmart, Tim Horton's, Shopper's Drug Mart) each time you complete the online tool. The first gift card is for $20. The amount increases each time you complete the tool ($30 for session 2, $40 for session 3, and $50 for session 4, for a total of $140). At the start of the tool, you will be asked to choose the type of gift card you would like to receive. We will mail this gift card to the safe mailing address you provide. If you stop taking part in the study, you can keep the gift cards that you have been sent.

Questions about the Study:

If you have questions about the study, please call Joanne Hammerton, Research Manager. Her phone number is 519-661-2111. You may also contact Dr. Marilyn Ford-Gilboe, the Principal Investigator for this study at 519-661-2111.

If you have any questions about your rights as a research participant or the conduct of this study, you may contact The Office of Research Ethics at 519-661-3036, email: ethics@uwo.ca.

Consent:

If you agree to take part in this study, please tell me. Then agree again when you first log onto the tool.

Consent Form

Project Title: Testing an internet-based safety decision aid for women experiencing intimate partner violence (Phase 2): "I CAN Plan 4 Safety Study – Phase 2"

Investigator's Name: Dr. Marilyn Ford-Gilboe

Your participation in this study is completely voluntary.

If you decide to participate in the study and then change your mind, you are free to withdraw from the project at any time with no consequence.

If you have any questions about your rights as a research participant or the conduct of this study, you may contact The Office of Research Ethics at 519-661-3036, email: ethics@uwo.ca.

By saying I agree, you agree to participate in the study described above.

Participant's Consent: Yes / No

Participant's Name (Please Print): Date:

_____ _____

Person Obtaining Informed Consent (Please Print): Signature:

_____ _____

Curriculum Vitae

Name: Alice Pearl Sedziafa

Post-secondary Education and Degrees:

University of Ghana
Accra, Ghana
2003-2007 BScN

Memorial University of Newfoundland
St John's, NL, Canada
2012-2014 M.A.

The University of Western Ontario
London, Ontario, Canada
2016-2023 Ph.D.

Honours and Awards:

Graduate Travel Award, NNVAWI
2020

Graduate Travel Award, Western University
2018

Graduate Travel Award, MUN
2014

Related Work Experience

Teaching Assistant
The University of Western Ontario
2016-2022

Publications:

Sedziafa, A. P., Tenkorang, E. Y., Owusu, A. Y. (2019). Can marriage (re)produce and legitimize sexual violence?: A phenomenological study of a Ghanaian patrilineal society. *Women's Studies International Forum, 77,* 1-8.

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Book Chapters

Tenkorang, E., **Sedziafa, A. P.**, and Kimuna, S. (forthcoming, 2023). Men's self-reported experiences of intimate partner violence: Evidence from the Kenya Demographic and Health Survey. Emerald International Handbook of Feminist Perspectives on Women's Acts of Violence.

Sedziafa, A.P., Mullings, D.V., Flood, K., and Kutty, Y. (2015). Exploring interventions that enhance the health and healthcare access of ethnocultural (racialized) older adults in rural, very small and/or geographically isolated communities. In S. Koehn, & M. Badger (Eds.), *Health care equity for ethnic minority older adults* (pp. 55-67). Vancouver, BC: Gerontology Research Centre, Simon Fraser University.