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Women's Quality of Life After Leaving an Abusive Relationship: The Effects of Past and Ongoing Intimate Partner Violence, Mastery and Social Support

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ABSTRACT

Intimate Partner Violence (IPV) is considered a major stressor that threatens the lives of women globally. Although qualitative research suggests that IPV has substantial negative effects on women's quality of life, few quantitative studies have examined the quality of life of women who have experienced IPV due, in part, to the lack of an appropriate, brief measure of QOL. Consequently, little is known about the contextual process by which IPV experiences affect women's quality of life (QOL) after leaving an abusive relationship. Mastery and social support are two important resources that women may use to deal with IPV but whether they function as mediators of the relationships between recent and ongoing IPV experience and QOL is unknown. The purposes of this study were to: a) advance the measurement of both QOL and IPV by evaluating the psychometric properties of the QOL Scale and Index of Spouse Abuse scale (ISA) in a community sample of Canadian women; and, b) test a theoretical model that explains how women's recent and ongoing experiences of IPV affect their QOL and whether social support and mastery mediate this process.

A secondary analysis of data from a sample of 250 Canadian women who participated in Wave 5 of the Women's Health Effects Study was conducted to address the study purposes. Support for the construct validity of both the Index of Spouse Abuse (ISA) and Quality of Life Scale was found using factor analysis techniques; evidence in support of the concurrent validity and internal consistency reliability of each scale was also found. Structural equation modeling (SEM) was used to examine whether social support and mastery mediate the relationship between the severity of recent and

current IPV and women's QOL. The proposed theoretical model was found to fit the data. Specifically, the severity of recent and ongoing IPV was found to affect women's QOL directly and, indirectly, through mastery and social support, although the strength of the path coefficients differed.

The results demonstrate the reliability and validity of the ISA and QOL scales and contribute delineating the mediating effects of mastery and social support. The findings underscore the significance of considering recent and ongoing IPV experiences and women's resources as key factors shaping QOL after separation from an abusive partner.

Keywords: Intimate partner violence, quality of life, mastery, social support, separation, structural equation modelling, psychometric analysis

CO-AUTHORSHIP

Diana Jaradat completed the following work under the supervision of Dr. Marilyn Ford-Gilboe, Dr. Helene Berman, and Dr. Carol Wong who will be co-authors of the publications resulting from Chapters Three, Four, and Five.

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DEDICATION

I dedicate this work to my mother Rasmiah Jaradat. Thank you for your permanent support and encouragement throughout my life to achieve my endeavours and ambition to pursue higher education. Your support has helped me throughout my Masters and PhD journeys.

This dissertation is also dedicated to my one and foremost lovely husband Wasfi Gharaibeh for his endless support, patience, and love which were inspiring in my life for a full seven years. I would have been unable to reach this milestone of my life without your love and sacrifice.

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TABLE OF CONTENTS

ABSTRACT.....	i
CO-AUTHORSHIP.....	iii
ACKNOWLEDGEMENT.....	iv
DEDICATION.....	v
TABLE OF CONTENTS.....	vi
LIST OF TABLES.....	x
LIST OF FIGURES.....	xi
LIST OF APPENDICES.....	xii
CHAPTER 1 – OVERVIEW TO THE DISSERTATION.....	1
Introduction.....	1
The Present Study.....	7
Purpose.....	7
Theoretical Framework.....	8
Methods.....	11
Summary of the Primary Research Study.....	12
Organization of the Dissertation.....	13
References.....	15
CHAPTER 2 – QUALITY OF LIFE AMONG WOMEN WHO HAVE EXPERIENCE INTIMATE PARTNER VIOLENCE: A LITEATURE REVIEW.....	21
Intimate Partner Violence as a Chronic Strain.....	21
Health, Social and Economic Consequences of IPV.....	29
The Process of Leaving an Abusive Partner.....	32
Measurement of Intimate Partner Violence.....	38
Quality of Life.....	41
Measures of QOL Used among Women Experiencing IPV.....	44
Social Support.....	46
Social Support after Separation from an Abusive Relationship.....	49
Social Support and QOL.....	49
Social Support and QOL Post-Separation.....	50
Mastery.....	52
Mastery and QOL.....	54
Mastery and Social Support.....	56
Summary of the Review of Literature.....	57
References.....	59

Table of Contents (Continued)

CHAPTER 3 – VALIDITY AND RELIABILITY OF SULLIVAN’S QUALITY OF LIFE SCALE AMONG WOMEN WITH HISTORIES OF INTIMATE PARTNER VIOLENCE.....	75
Review of the Literature	77
Conceptualizing Quality of Life (QOL).....	77
Quality of Life among Women who have Experienced IPV	81
Measurement of QOL in the Context of IPV	83
Method	86
Sample.....	88
Measurement.....	89
Data Analysis.....	92
Results.....	94
Factor Structure of the QOL Scale	95
Reliability and Concurrent Validity of the QOL Scale.....	97
Discussion.....	98
Strengths and Limitations	103
Conclusion.....	104
References	105
CHAPTER 4 – VALIDITY AND RELIABILITY OF THE INDEX OF SPOUSE ABUSE.....	115
Index of Spouse Abuse (ISA)	118
Validation Studies of the ISA.....	122
Study Purpose	126
Method	128
Measurement.....	129
Index of Spouse Abuse (ISA)	129
Measures Used to Examine Concurrent Validity of the ISA	130
Women’s Experiences of Battering Scale (WEB)	130
Center for Epidemiologic Studies-Depression (CES-D) Scale.....	132
PTSD Symptoms (Davidson Trauma Scale-DTS).....	133
Data Analysis.....	133
Results.....	136
Descriptive Analyses	136
Reliability and Validity Based on the Original Two-Factor Structure	136
Exploratory Factor Analysis (EFA) of the ISA	139
Discussion.....	144
Strengths and Limitations	149
Conclusion.....	150

Table of Contents (Continued)

References	151
CHAPTER 5 – FACTORS MEDIATING THE IMPACTS OF INTIMATE PARTNER VIOLENCE ON WOMEN’S QUALITY OF LIFE AFTER LEAVING AN ABUSIVE RELATIONSHIP	158
Theoretical Model.....	160
Review of the Literature	162
Origins of QOL Concept.....	162
QOL among Women who Left an Abusive Partner	163
Mediators of the Relationship between IPV and QOL.....	164
Social Support	165
Mastery	166
Mastery and Social Support	168
Method	169
Design.....	169
Sample.....	170
Measurement.....	172
Recent and Ongoing IPV Experiences	172
Women Experiences of Battering Scale (WEB).....	174
Quality of Life	176
Social Support	177
Mastery	179
Data Analysis Plan	180
Results.....	183
Measurement Model	183
Model Fit.....	184
Direct and Indirect Effects of IPV	184
Additional Analyses.....	186
Discussion.....	186
Strengths and Limitations	190
Conclusion.....	191
References	192
CHAPTER 6 – STUDY SUMMARY AND IMPLICATIONS.....	203
Conceptual Model.....	204
Method	205
Results.....	206
Study Limitations	206

Study Implications.....	208
Nursing Practice	208
Implications for Research	210
Nursing Education.....	212
Policy.....	213
Conclusion.....	215
References	216
APPENDICES.....	219
CURRICULUM VITAE.....	231

LIST OF TABLES

Table	Description	Page
CHAPTER 3		
1	Demographic Profile of the Sample (N=250).....	89
2	Item-Level Descriptive Statistics, Item-Total Correlations, and Internal Consistency of 9 Items on the QOL Scale (N=249).....	95
3	Items Distribution for 2-Factor Solution.....	96
4	EFA and CFA Fit Indices Using MPLUS 8	97
5	Factor Loadings for QOL Items: 1-Factor Solution	97
CHAPTER 4		
1	Summary of Previous Research Studies that Assessed the ISA Factor Structure.....	127
2	Demographic Profile of the Sample (N=250).....	130
3	Item-Level Descriptive Statistics, Item-Total Correlations and Internal Consistency of ISA (N=206)	137
4	Factor Loadings for the 3-Factor 28-Item ISA Scale	140
5	Correlation Matrix for the Three ISA Factors	141
6	Similarities and Differences in Assignment of ISA Items to Subscales in Original 2-Factor Solution Versus 3-Factor Solution	143
CHAPTER 5		
1	Demographic Profile of the Sample (N=250).....	171
2	Descriptive Statistics for Manifest Variables and Indicators of Latent Variables (N=206)	182
3	Pearson r Correlations among Measured Variables.....	183
4	Standardized Total and Specific Indirect Effects for Full Final Mode.....	185

LIST OF FIGURES

Figure	Description	Page
1	Structural Equation Model Derived from the Stress Process Model	162
2	Structural Equation Model with Manifest and Latent Variables, Measures, and Standardized path Coefficients	184

LIST OF APPENDICES

Appendix A Letter of Information	219
Appendix B Consent Form	222
Appendix C Ethics Approval	223
Appendix D Study Measures	224

CHAPTER 1

OVERVIEW TO THE DISSERTATION

This dissertation has been written in integrated article format and includes six chapters. In the introductory chapter presented here, I provide an introduction and overview to the entire dissertation. Chapter 2 presents a literature review relevant to the study concepts and purposes. Chapters 3, 4, and 5 focus on the study results, with each chapter formatted as a stand-alone article ready to submit for publication. Chapter 6 is a summary of the study results as well as their implications for nursing practice, research education and policy. Further information about the original study that provided the data for this secondary analysis, including the Letter of Information and Consent, Certificate of Ethics Approval, and study measures are found in the Appendices.

Introduction

Intimate Partner Violence (IPV) is a significant global health issue occurring in all settings and among all religious, socioeconomic and cultural groups (Heise & García-Moreno, 2012). IPV is considered the most common form of violence faced by women globally (WHO, 2013). It refers to “any behaviour by a current or former intimate partner that causes physical, sexual or psychological harm, including acts of physical aggression, sexual coercion, psychological abuse and controlling behaviours” (World Health Organization, 2016). To date, many scholars have studied the prevalence and impacts of IPV and there is evidence that IPV has negative effects on women’s lives, including on their economic positions (Adams, Sullivan, Bybee, & Greeson, 2008;

Littwin, 2012) and their health (Beydoun, Williams, Beydoun, Eid, & Zonderman, 2017; Campbell, 2002a; Ford-Gilboe et al., 2009). For example, women may suffer devastating trauma, as well as many physical and mental/psychological health consequences associated with IPV (Coker et al., 2002; Golding, 1999) and these health impacts can be longstanding (Watkins et al., 2014). In addition, women who have separated from an abusive partner may suffer from poverty associated with the ongoing physical and psychological effects of IPV, debts, and costs of staying away from the partner and being safe (Wuest, Ford-Gilboe, Merritt-Gray, & Berman, 2003).

Although studies point to relationships between the severity of IPV, economic problems and poor health among women, less attention has been given to understanding what contributes more broadly to women's Quality of Life (QOL) over time, particularly among women who have separated from an abusive partner. The World Health Organization QOL group (1998) defines Quality of Life as "individuals' perceptions of their position in life in the context of the culture and values systems in which they live and in relation to their goals, expectations, standards and social relations." (p. 25). A relationship between IPV and women's QOL has been documented in only a few cross-sectional quantitative studies (Laffaye, Kennedy, & Stein, 2003; Leung, Leung, & Ho, 2005; Ross, Saenyakul, & Kleman, 2015; Sadler, Booth, Nielson, & Doebbeling, 2000). Although QOL includes many domains, almost all of these studies have focused on one or two domains of women's QOL, such as physical health, or life satisfaction, overlooking other potentially important aspects of QOL. However, findings from qualitative studies (Bermudez et al., 2013; Duffy, 2015; Rizo, 2016; Weeks,

Macquarrie, Begley, Gill, & Leblanc, 2016) have provided considerable evidence that IPV is a distinct stressor that has strong negative effects on women's lives. Collectively, findings of these studies suggest that women's vulnerability to abuse and poor quality of life continues during the process of leaving and after separation as they begin to care for themselves and for their families in new contexts.

Women may experience many life challenges after leaving including financial problems, health problems and security and safety issues (Rizo, 2016). While some research (Anderson, Renner, & Danis, 2012; Edwards, Dardis, Sylaska, & Gidycz, 2015; Ford-Gilboe et al., 2009; Parker & Lee, 2007; Wuest & Merritt-Gray, 2001) has focused on the coping strategies women use to adapt to the new life context after separation from an abusive partner, less attention has been given to examining the resources women use to overcome life challenges after separation. In addition, few studies have explicitly addressed the relationship between severity of IPV and women's overall life satisfaction or QOL. This study addressed these gaps by examining the relationship between recent and ongoing IPV and QOL by testing whether social support and mastery mediate the relationship between IPV and QOL among women with histories of IPV.

Women actively seek out and use different strategies to deal with the violence in their lives (Goodman & Smyth, 2011). Separation from an abusive partner is one of these strategies and is seen as a common solution to IPV that allows women to create a new and better life (Ford-Gilboe, Wuest, & Merritt-Gray, 2005; Ruiz-Perez et al., 2006). However, there is some evidence that separation does not end many of the problems

which women face (Davies, Ford-Gilboe, & Hammerton, 2009; Duffy, 2015; Fleury, Sullivan, & Bybee, 2000; Wuest et al., 2003). For example, women's risk of IPV has been found to increase in the first year after leaving and may continue long after (Krause, Kaltman, Goodman, & Dutton, 2006; Walker, Logan, Jordan, & Campbell, 2004). Social support, employment, and higher subjective QOL have been associated with reduced risk of IPV re-victimization among women (Bybee & Sullivan, 2005). However, how continuing IPV shapes women's QOL post-separation remains an important gap in understanding. In general, research on women's QOL during this transition, including factors that contribute to or erode their QOL, is very limited.

The resources women use to deal with IPV have been examined in some research, particularly in qualitative studies that have illuminated women's strengths in dealing with IPV (Bermudez et al., 2013; Sabri et al., 2016; Walters, 2011). There is some evidence that women's access to personal, social and economic resources mediates the relationship between IPV severity and both physical and mental health (Samuels-Dennis, Ford-Gilboe, Wilk, Avison, & Ray, 2010; Samuels-Dennis, Bailey, Killian, & Ray, 2013), including post-separation (Ford-Gilboe et al., 2009; Guruge et al., 2012). Studies testing whether resources mediate the relationship between IPV and QOL are very limited. Social support (a specific type of resource) has been found to mediate the relationship between IPV and QOL in only one study of women exiting a shelter (Beeble, Bybee, Sullivan, & Adams, 2009). Research that examines other types of mediators with community samples of women is needed.

Women have both personal and social resources that can help them overcome the stress generated from previous IPV experiences (Beydoun et al., 2017; Ford-Gilboe et al., 2009; Guruge et al., 2012). Social support and mastery are two examples of such resources. Mastery is defined as a person's perceptions of their ability to control their life and overcome challenges (Pearlin, Menaghan, Lieberman, & Mullan, 1981). Social support, a resource that individuals use to face life stressor/problems (Pearlin, 1989), has been defined as "the perceived availability of helping behaviors from members of the social network" (Tilden, Nelson, & May, 1990, p. 338). Both mastery and social support may mediate the relationship between severity of IPV and women's QOL, although these relationships have not been insufficiently studied. In a longitudinal study of IPV survivors, Beeble, Sullivan and Adams (2009) found that social support played a main role in mediating and moderating the relationship between IPV and women's mental well-being. There is some evidence that social support may mediate the relationship between IPV severity and women's QOL, but that whether mastery mediates this relationship has not been studied. This study addressed these gaps by examining the direct and indirect relationships between severity of previous and ongoing IPV and women's QOL mediated by women's mastery and social support in a community sample for women who had separated from an abusive partner.

In addition, studies of women's experiences of IPV have used many different self-report measures that based on different theoretical definitions, leading to difficulty interpreting and comparing the results of these studies. Measures including the Composite Abuse Scale (CAS; Hegarty, Bush, & Sheehan, 2005), Conflict Tactics Scale

(CTS; Straus, 1979), Index of Spouse Abuse (ISA; Hudson & McIntosh, 1981), and many others, have been widely used in research. However, each has limitations and associated problems that reflect broader methodological challenges associated with adequately measuring the complex concept of IPV (Finkelhor, 2009). For example, some measures cover a limited number of violence dimensions or assess a specific type of IPV rather than the multiple types of violence, including coercive control, highlighted in current conceptualizations; others scales include unclear or ambiguous items and, often, details about the reliability and validity of specific self-report measures are not included in publications.

Similarly, there is a lack of research on QOL among women who have experienced IPV due, in part, to the lack of a brief, reliable and valid measure that captures QOL in a broad way, and is appropriate for women with histories of violence. Access to sound research measures is important to the development of high quality research about women's experiences of IPV and their life satisfaction, well-being and QOL. There is an ongoing need to develop new, and validate existing, self-report measures of IPV and QOL, including with samples of Canadian women, in order to advance scholarship in this field.

Based on the available literature, there is a need to develop evidence about the process by which recent and ongoing IPV impacts QOL among Canadian women. In addition, research testing whether social support and mastery play similar or different roles in mediating the impacts of previous and ongoing IPV on women's QOL is also needed to more clearly understand the specific role that these two resources play in

women's lives in the context of traumatic/chronic stressors. The quality of such research depends on access to valid and reliable self-report measures of IPV and associated outcomes, such as QOL.

Rigorous psychometric testing of self-report measures of IPV and QOL is key to establishing the validity and reliability of these measures (Alsaker, Moen, & Kristoffersen, 2007). The availability of a valid IPV measure is a foundation for conducting more accurate and rigorous research across various settings and contexts (Sullivan, 2011). In addition, establishing the reliability and validity of a QOL measure among women who have experienced IPV is a critical means of documenting the consequences of IPV on women's lives in general, addressing an important gap in knowledge and potentially informing the development of future interventions to support women who have experienced IPV.

The Present Study

Purposes

The purposes of this dissertation research were to: a) advance the measurement of QOL and IPV by evaluating the psychometric properties of two existing measures, the *QOL Scale* (Sullivan & Bybee, 1999) and *Index of Spouse Abuse scale* (ISA; Hudson & McIntosh, 1981) in a community sample of Canadian women; and, b) test a theoretical model that explains the process by which recent and ongoing severity of IPV affects women's QOL, particularly the mediating effects of social support and mastery.

Theoretical Framework

The theoretical framework underlying the proposed study is based on the Stress Process Model (SPM; Pearlin et al., 1981). The SPM addresses how chronic stress affects the mental health and QOL of people. There are three main concepts in the SPM: stressors, resources (or stress mediators), and health outcomes. Stressors come from the individual's life and social surroundings and affect the individual's ability to cope (Pearlin, 1989). According to Pearlin, there are two types of stressors: life events and chronic strains. Life events are conceptualized as changes in social life that require coping/adjustment, such as divorce or getting married (Pearlin et al., 1981). Chronic strains are recurrent problems that arise repeatedly over time or tend to persist, such as experiences of discrimination (Pearlin, 1989). In some cases, events may lead to chronic strains (Pearlin, 1989). For example, injury might lead to job loss and long-term poverty; getting married at an early age increases the chance of living in poverty in the future, especially among women (Dahl, 2010).

Resources or stress mediators are factors that influence the effects of stressors on health. Stress mediators are directly related to the stressors that shape them and to the outcome. A recent review (Isa et al., 2016) of 31 articles published between 2009-2014 highlighted the importance of adaptive factors in understanding the nature of stress processes and caregivers' coping resources, including social support, self-esteem and self-efficacy. Access to resources may vary with individuals' economic and social status (Pearlin & Bierman, 2013) and this may explain some of the variability in health among individuals who have been exposed to the same stressor. Pearlin identifies three types

of resources: personal, social, and coping. Mastery, a personal resource (Pearlin & Schooler, 1978), is a belief (or conviction) that a person is able to control stressful circumstances they experience (Pearlin, 2010). Underlying the concept of mastery is the implicit assumption that individuals are not passive objects of experiential and environmental forces acting upon them but they respond to these forces based on learned appraisals of their ability to manage the life situations they face (Pearlin, 2010). Coping resources are personal and social characteristics that individuals may use to deal with stressors (Pearlin & Schooler, 1978). Social support is considered a social resource that individual uses in order to face life stressor/problems (Pearlin, 1989). In a longitudinal study of IPV survivors, Beeble, Sullivan and Adams (2009) found that social support played a main role in mediating and moderating the relationship between IPV and women's mental well-being.

Pearlin (1989) defined the stress outcome as the effect of the stressor on an individual's well-being. Although he and other researchers who have used SPM have primarily been interested in mental health outcomes (Pearlin, 1989), other outcomes have also been used, including life satisfaction and general well-being (Judge, Menne, & Whitlatch, 2010; Kniepmann, 2014; Menne, Judge, & Whitlatch, 2009; Moon & Dilworth-Anderson, 2015).

The concepts of SPM, and proposed relationships, can be applied to understand women's experiences of IPV. A detailed review of this body of work is included in Chapter 2 of this dissertation. In this context, IPV is seen as a chronic stressor in the lives of women who have experienced it (Dallam, 2010). In the SPM, IPV can be seen as a

chronic strain because women separating from abusive partners remain at high risk of suffering from stress, health problems, economic strain, and social barriers to getting needed help (Alhalal, Ford-Gilboe, Kerr, & Davies, 2012; Ford-Gilboe et al., 2009; Thomas, Wittenberg, & McCloskey, 2008; Walker et al., 2004). For many women, these strains and challenges are ongoing after separation and make the experience and effects of IPV chronic (Wuest, Ford-Gilboe, Merritt-Gray, & Berman, 2003).

In the past thirty years, the SPM has been extensively used across many disciplines, including Nursing (Bolden & Wicks, 2008; Jones, Winslow, Lee, Burns, & Zhang, 2011). Using a sociological framework is an appropriate way to uncover patterns shared by individuals whose social circumstances are the same (Pearlin, 1989). Women who have experienced IPV often share experiences of chronic stress associated with abuse and suffer from its negative effects (Adams, Tolman, Bybee, Sullivan, & Kennedy, 2012; Ali, Dhingra, & McGarry, 2016; Larsen, Krohn, Püschel, & Seifert, 2014). The stress process model has been used to frame several studies of the mental and physical health consequences of IPV among women (Alhalal et al., 2012; Anderson & Saunders, 2003; Scott-Storey, Wuest, & Ford-Gilboe, 2009).

Although women may have various resources, the focus in this study is on social support and mastery because these variables are well documented as having significant positive impacts on health (Gadalla, 2009; McKinley, Brown, & Caldwell, 2012; Taubman-Ben-Ari, Ben Shlomo, & Findler, 2012). In general, mastery is conceptualized as individual's perceived control over significant life situation and can be considered as a personal resource in coping with life stressors (Pearlin et al., 1981; Pearlin & Schooler,

1978). Research shows that mastery has a positive effect on well-being and protects against various stressors. Thoits (1987) suggests that mastery reduces the emotional effects of uncontrollable stressful events by encouraging active problem solving skills among individuals. Mastery is a critical resource that leads to a reduction in stress associated with role overload (Aneshensel, Pearlin, Mullan, & Zarit, 1995). Social Support has been defined as “the perceived availability of helping behaviors from members of the social network” (Tilden, Nelson, & May, 1990, p. 338). A strength of Pearlin’s model is that it makes a clear connection between the structural arrangements in society and variability in exposure to stressors, access to social and personal resources, and resulting mental health disparities (Pearlin, 1989).

Methods

A secondary quantitative analysis was conducted to address the research purposes using data collected from women who had separated from an abusive partner and who participated in the Women’s Health Effects Study (WHES; Ford-Gilboe et al., 2009). Secondary analysis involves the use of data collected in a primary study to address research questions not answered/considered in the original analysis or to apply a different analytical approach (Andersen, Prause, & Silver, 2011). The WHES data set includes data about women’s mastery, social support, and QOL and severity of IPV after leaving an abusive relationship collected using standardized self-report measures at 5 points in time: baseline, and 12, 24, 36 and 48 months later. The primary study data set is appropriate for this analysis because the measures used in the WHES fit with the theoretical definitions of the concepts included in this dissertation. Wave 5 data were

used Quality of Life was measured only at this time point. While longitudinal data are available for some of the other study variables, cross-sectional data were used in this study because the relationships between variables have not been previously studied. This is a reasonable approach to take before moving to longitudinal analyses.

Summary of the Primary Research Study

The WHES is a longitudinal study of changes in women's health, IPV experiences, and resources after over a four-year period after initially separating from an abusive partner (Ford-Gilboe et al, 2009). The community sample included 309 adult (18-65 years) English-speaking women who had left an abusive partner at some point in three years prior to enrolment and were no longer living with that partner, and who were residing in three Canadian provinces (Ontario, British Columbia, and New Brunswick). A modified version of the Abuse Assessment Screen (AAS; Parker & McFarlane, 1991) was used to screen women for exposure to at least one type of IPV (i.e. physical abuse, fear of partner, forced sex, controlling behavior) from the previous partner as part of the eligibility process. Eligible women received a verbal description of the study from a research assistant and were invited to take part in 5 interviews comprised of reliable and valid self-report measures and survey questions at baseline and 12, 24, 36, and 48 months later (Ford-Gilboe et al., 2009). All interviews were conducted in a private location selected by the women or, after the baseline interview, over the phone if there were limitations in accessing the participants because they had moved long distances.

The study was approved by the Research Ethics Boards at the University of Western Ontario, University of New Brunswick, Simon Fraser University, University of

British Columbia, and University of Victoria based on the Tri-council Ethics guidelines (Ford-Gilboe, et al., 2009). Written informed consent was obtained from the participants at enrolment and reconfirmed at each data collection session. Participation was voluntary and women were told that they could refuse to answer any question or withdraw from the study at any time. A safety protocol was used to guide all women and research team interactions (Ford-Gilboe et al., 2009).

A total of 250 of the original sample of 309 women completed Wave 5. This sample size is large enough to test the structural equation model proposed in this study where the minimum sample size recommended is 200 (Kline, 2016). Following recommendations of Hayduk & Littvay (2012), most study variables are represented by single indicators that reflect continuous scores on self-report measures; this approach is preferred for developing theoretically sophisticated models and also reduces the sample size needed for analysis since fewer parameters need to be estimated. Kline (2016) notes that “analyses in which outcome variables are continuous and normally distributed, all effects are linear, and there are no interactions, require smaller sample sizes” (p. 15). The sample size of 250 women is also sufficient to complete psychometric testing of both the 30-item Index of Spouse Abuse (Hudson & McIntosh, 1981) and 9-item *Quality of Life Scale* (Sullivan & Bybee, 1999) based on recommendations from Kline (2016).

Organization of the Dissertation

This chapter provided an introduction to the dissertation as a whole. Chapter 2 provides a review and critique of literature focussed on the study concepts and their

relationships in order to ground this research theoretically and empirically. Searches of SCOPUS, CINAHL, and Medline databases were conducted using combinations of key words that reflect concepts in the study's theoretical framework: intimate partner violence, women, marital separation, leaving an abusive relationship, QOL, chronic strain, mastery, and social support. As relevant articles were identified, the reference lists of each were reviewed to identify additional key words and/or publications not identified in the initial searches. Publications were included in this review if they were essential for understanding the proposed study concepts. For ease of reading, the review of literature is organized according to the main concepts of the theoretical framework: intimate partner violence, quality of life, mastery and social support.

Chapters 3, 4, and 5 are data-based manuscripts that present the study results. Chapters 3 and 4 provide the results of testing the reliability and validity of two scales, the Index of Spouse Abuse (ISA) and QOL Scale. Chapter 5 provides the results of testing a structural equation model in which previous and ongoing severity of IPV is proposed to affect the QOL of women who have separated from an abusive relationship directly, and, indirectly, through their effects on social support and mastery. Finally, in chapter 6, I provide a brief summary of the study, including key results, and discuss the implications for nursing practice, education, policy, and research.

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CHAPTER 2

QUALITY OF LIFE AMONG WOMEN WHO HAVE EXPERIENCED INTIMATE PARTNER VIOLENCE: A LITERATURE REVIEW

A review of theoretical and empirical evidence related to Intimate partner violence (IPV) and associated health outcomes is provided here. The role of social support and mastery in mediating the relationship between both IPV and quality of life (QOL) is also addressed. Searches of SCOPUS, CINAHL, and Medline databases were conducted using combinations of key words that reflect concepts of the study's theoretical framework: intimate partner violence, women, marital separation, leaving an abusive relationship, QOL, chronic strain, mastery, and social support. As relevant articles were identified, the reference lists were reviewed to identify additional key words and/or publications not identified in the initial searches. All publications were included in this review if they were essential for understanding the proposed study concepts. For ease of reading, this review is organized according to the main concepts of the theoretical framework: intimate partner violence, QOL, mastery and social support.

Intimate Partner Violence as a Chronic Strain

Intimate partner violence (IPV) is a prevalent problem-affecting women that has garnered substantial attention from the community, scholars, researchers, policy makers, and health care professionals worldwide. In 2014, Canadian victims of IPV accounted for approximately 27% of all violent crimes reported to police; in addition, four out of five victims of IPV in Canada were women (Statistics Canada, 2016). Intimate partner violence is "any behavior by a current or former intimate partner that causes physical, sexual or psychological harm, including acts of physical aggression, sexual

coercion, psychological abuse and controlling behaviors” (World Health Organization, 2016); it may take the form of slapping, hitting, kicking, pushing, beating, or forced sexual act (WHO, 2012), name-calling, swearing, criticism, or financial control (Paluzzi & Houde-Quimby, 1996). Global rates of IPV show that 1 in 3 women worldwide have experienced one or more forms of physical and/or sexual violence by an intimate partner or non-partner in their lifetime (WHO, 2016). However, it has been argued that these rates underestimate the prevalence of IPV against women (Palermo, Bleck, & Peterman, 2014) because women throughout the world tend to remain silent about the abuse and may not access services and help (Bott, Guedes, Goodwin, 2012; Langton, Krebs, Berzofsky, & Smiley-mcdonald, 2012; Sinha, 2013). In addition, the quality of the data is a limitation in many population-based studies, which have used questions that emphasize physical and sometimes sexual violence, but do not fully capture psychological abuse experiences (Ford-Gilboe et al., 2016).

Women often experience stigma and shame, which make it difficult to access or seek help from informal and formal supports (García-Moreno, Jansen, Ellsberg, Heise, & Watts, 2005; Hindin, Kishor, & Ansara, 2008). Other barriers to help seeking have been identified including: financial strain (Hetling, Stylianou, & Postmus, 2015); lack of awareness about services (Casey et al., 2011); cultural beliefs (Njuki et al., 2012); fear of losing custody of children (WHO, 2005); fear of getting the abuser in trouble (Dutton et al., 2006); and discriminatory and stereotypical attitudes toward victims in courts (Belknap, 2010). There is a strong link between these barriers and women’s experiences of IPV. For example, women may not report or seek care because they believe that the

violence is normal or not serious enough to report (Fugate, Landis, Riordan, Naureckas, & Engel, 2005). In addition, women may withhold information about abuse because they fear the abuser. In Australia, two surveys on violence against women revealed that the most common reasons for not reporting violence were that women dealt with the abuse on their own, or did not regard the abuse as a serious threat (Mouzos, & Makkai, 2004). However, in Canada, the most common reasons found for not reporting violence were a belief that the abuse is a personal matter, the crime was not serious enough to report to the police, and the belief held by women that the police or the criminal justice system cannot help them (Statistics Canada, 2012).

In research, IPV is often defined as a pattern of sexual, physical, emotional violence, including controlling behaviour, by an intimate partner (Tjaden & Thoennes, 2000). In addition, it has been conceptualized as a serious, preventable public health problem that includes one or more of the following: physical violence, sexual violence, stalking and psychological aggression (including coercive acts) by a current or former intimate partner (CDC, 2001). In terms of IPV conceptualizations, many studies still focus on conflict in the relationship (D'Andrea & Graham-Berman, 2017; Maglinte, Reyes, & Balajadia, 2016; Shannon, Nash, & Jackson, 2016; Wako et al., 2015). There are inconsistencies in the definition and the conceptualization of IPV, although the majority of studies share a focus on types of IPV including physical, emotional, and psychological abuse. A high quality, multi-dimensional definition of IPV is needed to improve the ability to compare health-related events reported using different data sources, such as

comparisons by geographic area, or the ability to compare data over time and across contexts (CDC, 2001).

While the term intimate partner violence was once restricted to marital or cohabitating relationships, this understanding has shifted over time to include partners who are intimately engaged with each other (Craparo, Gori, Petruccelli, Cannella, & Simonelli, 2014; McDonald, Jouriles, Ramisetty-Mikler, Caetano, & Green, 2006). Today, IPV is largely understood as a serious public health problem that affects everybody in the community including men, women, and children.

Psychological violence and controlling behavior have received increased attention in the literature. There is some evidence that psychological abuse may have more harmful impacts than physical violence from the victims' perspective (e.g., Follingstad & Ryan, 2013; Mills, Hill, & Johnson, 2017). Psychological abuse is defined as "acts of recurring criticism, verbal aggression toward a partner, and/or acts of isolation and domination of partner" (O'Leary, 1999, p.38), while coercive control is a repetitive process of burden that enforces obedience because the victim expects punishment for non-obedience and rewards for obedience (Dutton & Goodman, 2005). Coercive control is considered to be an underlying pattern of psychological abuse because the main reason for violence is often to gain power and control over the partner (Loveland & Raghavan, 2017). The perpetrator may use various tactics in order to control their victims such as isolation, intimidation, and exploitation (Ansara & Hindin, 2010a; Kelly & Johnson, 2008; Stark, 2007). However, coercive control tactics do not work alone (Stark,

2007); perpetrators may also use physical or sexual violence in order to achieve control (Beck & Raghavan, 2010).

Male partners may use coercive controlling behaviors with women in order to reinforce their masculinity (Bergman, 1991; Reidy et al., 2016). Masculinity has been linked to dominance, toughness and sense of male power or ownership over women (Heise, 1998). In patriarchal cultures/settings, men may use coercive control over women as central to normative masculinity (Reidy et al, 2014). In general, as a reflection of some broader force, the use of such behaviors to gain dominance over women in intimate relationships may support men's abuse of women. For example, a recent study explored the relationship among masculinity, physical violence and coercive control in a sample of 137 men and found that masculinity may contribute to the use of coercive control tactics in intimate relations, and that failure to achieve control may lead to physical IPV (Loveland & Raghavan, 2017).

One of the most complex and divisive issues related to IPV is a question about gender symmetry in violence perpetration and impacts (Kimmel, 2002). There is now good evidence from several countries that gender-specific patterns of IPV exist. For example, in Canada, the majority of family violence victims were women in 2013 (Statistics Canada, 2015). In order to resolve this debate, Kelly and Johnson (2008) and Johnson (2008) developed a classification system of abusive relationships that includes the following types: situational couple violence, intimate terrorism, violent resistance, and mutual violent behaviour. *Situational couple violence* or common couple violence refers to a situation where both partners are physically violent without any controlling

behavior; the underlying dynamic in this pattern is about difficulty resolving conflict. In contrast, *Intimate terrorism* refers to when one partner is physically violent and controlling and the other partner is non-violent. The name of this type of violence changed with time from patriarchal terrorism to *intimate terrorism* in order to include both women and men as perpetrators. However, Johnson draws on gender theory to argue that although intimate terrorism can be perpetrated by either women or men in both heterosexual and homosexual relationships, it is most common in heterosexual relationships, where men are the perpetrators (Johnson, 2006). *Violent resistance* reflects relationships when one partner is physically violent and controlling and the other partner is also physically violent but not controlling; resistance reflects the victims' efforts to protect themselves. *Mutual violent behavior* occurs when both partners are physically violent and controlling like a mutually abusive relationship. Research supports gender symmetry in some IPV categories (i.e. mutual violent control) and gender asymmetry in other categories, particularly in intimate terrorism, a pattern that is largely perpetrated by men against women (Johnson, 2006). A primary difference between common couple violence and intimate terrorism is the existence of coercive control. According to Johnson (2008) control is "a continuum. Everyone controls their partner to some extent" (p.87). Control becomes coercive when one uses tactics to dominate an intimate partner's life and restrict personal freedom (Stark, 2007).

Johnson's (2008) typology of IPV emphasizes the nature of control in the intimate relationship in which abuse/violence happens. Intimate terrorism is the violence that feminist theories primarily refer to, in which one partner uses a pattern of

violence in an attempt to take control over his/her partner (Johnson, Leone, & Xu, 2014). Johnson (2006) explored gender distributions among his categories of IPV and showed that gender symmetry is dependent on the category. Specifically, he found that men perpetrated 97% of Intimate Partner Terrorism (IPT) while women were responsible for 96% of IPV resistance.

Feminist research has played an important role in confirming that women are more likely than men to report severe physical or sexual violence such as being choked or beaten or sexually assaulted (Dawson, Bunge & Balde, 2009; Tjaden & Thoennes, 2000). Research on IPV has developed to include distinct types of victimization such as sexual violence. Sexual abuse is defined as using force to induce a person into sexual acts against his or her will and completed sexual activity with a person who is unable to understand the nature of the act or communicate unwillingness (Saltzman, Fanslow, McMahon, et al., 1999). Sexual violence has been divided into three major categories according to the CDC (2014): 1) the use of personal physical force to convince a partner to participate in sexual act against their will, whether or not the act is completed; 2) an attempted or completed sex act that involves one partner who is unable to understand the nature of the act or unable to reject participation due to intimidation or pressure, or influence of alcohol or drugs; 3) and abusive sexual contact. The United States Department of Justice (2009) indicated that if physical abuse/violence is present in intimate relationships, it is more likely that sexual violence is present as well. The likelihood of sexual violence increases with the severity of physical abuse (Gordon, 2000).

In addition, there is evidence that women report higher rates of fear of injury or death from violence than do men (Gannon & Mihorean, 2005; Malloy, McCloskey, Grigsby, & Gardner, 2003) and are more likely to suffer economically in the relationship and have difficulties escaping the violence (World Health Organization, 2014). For example, in an analysis of Canadian Data from the General Social Survey, Ansara & Hindin (2010) found that there are more and different patterns of IPV for women than for men. While both women and men were found to experience less severe physical acts of violence that were not embedded in a pattern of control at similar rates (Ansara & Hindin, 2010), only women experienced a severe and chronic pattern of violence that included high levels of fear and injury (Ansara & Hindin, 2010). These results are consistent with Johnson et al's (2014) research which identified intimate partner terrorism as a severe and chronic pattern of violence perpetrated by men toward women, and common couple violence as less severe violence, not linked to control, and perpetrated by both men and women.

These results reinforce the need to consider gender influences in experiences of IPV as failure to do so may lead to false conclusions about IPV and the effects of IPV. Thus, it has been recommended that the term IPV should be followed by the term “against women” in order to accurately refer to the phenomenon (Krantz & Garcia-Moreno, 2005). However, some studies of IPV have not limited participation to women, as men can also experience IPV (Coker et al., 2002; Finneran & Stephenson, 2013; Harris, 2016; Langhinrichsen-Rohling, 2012). Therefore, researchers should be clear about how they are conceptualizing IPV. In this proposed study, IPV is conceptualized as

a terrorist act against women including all patterns of physical, non-physical and psychological abuse or aggression in the context of coercive control.

Health, Social and Economic Consequences of IPV

Women with histories of IPV are more likely to experience physical health problems such as cardiovascular disease, chronic pain/migraines, epilepsy and seizure disorders, gastrointestinal symptoms, sleep disturbance, diarrhea, and irritable bowel disease than women in the general population due to both injuries and the residual effects of trauma (Campbell, Campbell, King, Parker, & Ryan, 1994; Campbell, 2002b; Coker, Smith, & Fadden, 2005; Coker, Smith, McKeown, & King, 2000; Mize, Shackelford, & Shackelford, 2009; Perona et al., 2005; Scott-Storey, 2013; Sowell, Seals, Moneyham, Guillory, & Mizuno, 1999; Wathen et al., 2016). In addition, abused women are more likely to report general health problems such as gynecological and central nervous health problems (Campbell et al. 2002). Death can be a consequence of IPV; according to the Center for Disease control and Prevention (2006), 1,544 deaths in the United States occurred in 2004 from IPV. In Canada, intimate partner violence accounted for one-quarter of all violence police reported crimes and spousal homicide was higher after separation or leaving the marital relationship (Statistics Canada, 2015). Specifically, women's risk of being killed by intimate partner is six times higher after separation than women's risk while in a marital relationship (Statistics Canada, 2015).

There is growing evidence that type and severity of IPV is related to women's physical and mental health, QOL, and service use (Hegarty et al., 2013; Wuest et al., 2010). Greater severity of IPV has been associated with poorer physical and mental

health status and QOL, and with higher levels of PTSD, depression, and chronic pain (Dutton, Kaltman, Goodman, Weinfurt, & Vankos, 2005; Hegarty et al., 2013; Wuest et al., 2010). The nature of these relationships has varied by the type of abuse experienced. For example, there is evidence that women who are suffering from combined physical, emotional and sexual abuse have poorer QOL and mental health than women experiencing other abuse types (Davies et al., 2015; Hegarty et al., 2013). In addition, sexual violence compounds the health effects suffered IPV victims, as they often face long-lasting health conditions as a result of violence (Breiding et al., 2014). These studies show that the complex relationship between type and severity of IPV need to be taken into consideration when studying IPV and related outcomes.

Psychological abuse is defined as “acts of recurring criticism, verbal aggression toward a partner, and/or acts of isolation and domination of partner” (O’Leary, 1999, p. 38). As indicated previously psychological abuse may result in various mental health consequences such as stress, depression, anxiety, post-traumatic stress disorder (PTSD), and drug and alcohol problems (Briere & Jordan, 2004; Feingold, Kerr, & Capaldi, 2008; Pan, Neidig, & O’Leary, 1994) alone or in combination with other IPV types.

Depression and PTSD have been identified as the most common mental health concerns for women who have experienced IPV (Dillon et al., 2013; Kessler et al, 1995; Rodriguiz et al, 2009) and play important roles in affecting women’s health. For example, Wuest et al. (2009) found that the relationship between IPV severity and chronic pain severity was significantly mediated by PTSD severity among women. In addition, another study among Chinese women survivors of IPV, the relationship

between psychological abuse severity and chronic pain was mediated by PTSD severity (Tiwari, Fong, Chan, & Ho, 2013).

There is good evidence that IPV also has negative impacts on women's social relationships. Research conducted with various populations has identified the positive effects of social support on psychological well-being (Ozer, Best, Lipsey, & Weiss, 2003). Women who experience IPV have been found to face various social consequences including restricted access to services or isolation from social networks (Coker et al., 2002; Plichta, 2004), homelessness (Plichta, 2004), and strained relationships with health care providers and employers (Heise & García-Moreno, 2012; Plichta, 2004; Warshaw, Brashler, & Gil, 2009). They also tend to use services more than non-abused women, in part, because they suffer from the health consequences of abuse (Ford-Gilboe et al., 2015).

Women may suffer from economic impacts associated with IPV. For example, one longitudinal study (Crowne et al., 2011) revealed that there is a negative relationship between employment stability and IPV, and that abused women are more likely to be unemployed or have unstable jobs over time. Experiencing many types of stress associated with IPV can interfere with women's lives (Thomas, Wittenberg, & McCloskey, 2008), leading them to drop out of school or leave work (Adams et al., 2013) and become financially dependent on others and/or live on low incomes (Thomas et al., 2008). They are also more likely to face housing instability due to low income (Baker, Billhardt, Warren, Rollins, & Glass, 2010; Daoud et al., 2015). Women's mental health symptoms may interfere with their ability to concentrate and complete work

responsibilities. For example, Mascaro, Arnette, Santana, and Kaslow, (2007) found that women's depressive symptoms created vulnerability for work loss. In addition, in another study (Borchers, Lee, Martsolf, & Maler, 2016), women were found to have difficulty maintaining employment because the perpetrator controlled their appearance, interfered with their work, or controlled their finances. Understanding that women face various challenges as a result of IPV, including being isolated and having limited access to income and employment, is helpful in considering what may they use to cope with the violence and other stresses after being separated from their abusive partner and how this might affect women's QOL after separation.

In summary, IPV has been associated with various health, social, and economic consequences. The factors that increase women's risk of experiencing IPV, and health consequences of IPV among women have been well documented. Health care professionals, including nurses, must give special attention to IPV, view women who have experienced IPV as survivors, and work to support women in reducing the internal and external challenges women face after leaving the abusive relationships. However, more research is needed to examine the relationship between the severity of recent and current IPV experiences and women's general QOL.

The Process of Leaving an Abusive Partner

Leaving the abusive relationship can be difficult choice for women. Many factors play a role in women's decision to stay (e.g., personal values, stigma) or leave (e.g., unmet needs) an abusive relationship. As with any major life choice, separating from an abusive partner is a process that may take days, months, or even years. The process of

leaving may involve many attempts for various reasons (Bermea, Khaw, Hardesty, Rosenbloom, & Salerno, 2017; Khaw & Hardesty, 2015; Rhodes et al., 2011; Wuest & Merritt-Gray, 2001). Furthermore, ending the relationship does not necessarily end the abuse, or does it guarantee woman safety and well-being (Edwards, Palmer, Lindemann, & Gidycz, 2017; Fleury et al., 2000; Ford-Gilboe et al., 2009; Koepsell, Kernic, & Holt, 2006; Wuest et al., 2009).

Heise, Ellsberg, and Gottemoeller (1999) identified various reasons that women stay with an abusive partner including: a) lack of economic support, b) concern for their children, c) lack of social support from family and friends, d) love and hope that the abusive partner will change, e) stigma of fear losing custody of children associated with divorce, and, f) fear of retaliation. In addition, social norms in some cultures may affect women's decisions about separation (Alhabib, 2011). In spite of these barriers to separation, many women eventually leave the abusive relationship, often after many attempts and years of ongoing violence. In one multi-country study, 19-51% of women who had been physically abused by their intimate partners left the partner for at least one night, and 8-21% had left two to five times (García-Moreno et al., 2005). In this study, the main factors associated with leaving were: a) increased violence severity, b) violence affecting the children, and c) realizing that the partner would not change (García-Moreno et al., 2005).

Women who have experienced IPV tend to leave the abusive partner in order to escape the harmful effects of IPV (Alsaker, Moen, & Kristoffersen, 2007) and because they are seeking a better life for themselves and/or their children (Fisher & Stylianou,

2016; Wuest, Ford-gilboe, Merritt-gray, & Berman, 2003). Leaving has been conceptualized as a complex process that occurs over time, includes many stages or phases (Burke, Gielen, McDonnell, O'Campo, & Maman, 2001) and often many attempts by the women (Lacey, Saunders, & Lingling Zhang, 2011). Two approaches have generally been used to explain how abused women navigate the leaving process: the Stages of Change model (Prochaska & DiClemente, 1986) and to conduct in-depth qualitative studies.

The Stages of Change model has been used to theorize the process of leaving in many studies (Burke, Gielen, McDonnell, Campo, & Maman, 2001; Burke, Denison, Gielen, McDonnell, & O'Campo, 2004; Burke, Mahoney, Gielen, McDonnell, & O'Campo, 2009; Chang et al., 2006; Cluss et al., 2006; Khaw, 2011; Khaw & Hardesty, 2007; Shurman & Rodriguez, 2006; Zink, Elder, Jacobson, & Klostermann, 2004). It consists of five stages ordered to reflect a to person's readiness to change (Burke et al., 2001). In the first stage, called the *pre-contemplation stage*, the woman is not psychologically ready to leave because she has not identified the abuse as a problem that needs to be solved or changed (Brown, Trangsrud, & Linnemeyer, 2009). In this stage, women tend to minimize the negative effects of the abuse because of their emotional attachment to the abuser (Shurman & Rodriguez, 2006) and may experience confusion about the abuse (Khaw & Hardesty, 2009). When abused women start to recognize that the abuse is a problem that needs to be solved/changed, they move to the *contemplation stage* (Burke, et al, 2004). Women who experienced IPV may stay for years in this stage as

they think about how to solve or change the relationship and build needed available resources (Khaw & Hardesty, 2007).

The woman moves to *preparation stage* when she recognises that the abuse is a problem and actively starts to develop a plan to leave (Burke, et al., 2001). This may include saving money for leaving and finding a new safe place to live (Goodkind, Sullivan, & Bybee, 2004). In the third stage, called *action*, women take specific steps to deal with the violence (Brown et al., 2009), such as leaving the abuser, or making efforts to stop the violence (Cluss et al, 2006) by asking the partner to seek treatment to stop their abuse (Goodkind, et al., 2004). Finally, the last stage is *maintenance*, when women sustain the change by not returning to the abusive partner or returning to the partner if the relationship is not longer violent (Frasier, Slatt, Kowlowitz, & Glowa, 2001).

The Stages of Change model is useful for understanding the process of leaving for abused women, but the model has some limitations. The model focuses on the individual woman's efforts to leave but does not consider how the decision to leave may impact or be affected by the family or the abuser. In response, Khaw and Hardesty (2015) integrated "Boundary Ambiguity" into the stages of Change model using both Family Stress Theory and Feminist perspectives in order to account for changes in relational boundaries unique to the process of leaving. The changes they suggest highlight the leaving process as fluid, systematic, and non-linear (Khaw & Hardesty, 2015) and may help to address the common critique that stages of change tends to oversimplify the leaving process and fails to consider women's context (Ford-Gilboe, et al 2010).

The second approach used to understand the process of leaving an abusive partner is grounded in in-depth qualitative studies of women's experiences, rather than pre-existing theory (Davis, 2002; Enander & Holmberg, 2008; Landenburger, 1989; Merritt-Gray & Wuest, 1995; Moss, Pitula, Campbell, & Halstead, 1997; Ulrich, 1991). Findings of these studies highlight the fact that leaving an abusive partner is often the last option and requires a lot of courage and determination (Anderson & Saunders, 2003). Women's mental or psychological health problems after separation might be equal to or exceed the mental problems they experience before leaving the relationship, although there is also some evidence that mental health improves over time, especially in the presence of various coping resources such as social support, self-confident, and material necessities (Anderson & Saunders, 2003). However, for those women who experience the most stress after leaving, psychological health can worsen overtime.

In a comprehensive review of literature, Anderson and Saunders (2003) summarized four facets of research on leaving an abusive relationship: 1) factors related to initially leaving the abusive relationship; 2) the process of leaving; 3) the psychological well-being of survivors; and 4) predictors of well-being. This review makes a strong contribution in explaining the leaving process, from the decision until sometimes living separately. It highlights many gaps in the literature including the need for more research to identify factors early in the separation process that signal negative outcomes and factors that improve women's psychological health after separation.

In addition, *Strengthening Capacity to Limit Intrusion (SCLI)* (Ford-Gilboe et al., 2005; Wuest et al., 2003) is a theory that explains families' health promotion

experiences after leaving. The theory was generated from repeat interviews with 40 Canadian women and their children, all of whom had separated from an abusive partner/father for up to 18 years. *Intrusion* was the central problem experienced by these families in promoting their health after leaving. Defined as external interference that erodes the woman's control and hinders her ability to create a better life, intrusion comes from 4 sources: a) ongoing abuse from the ex-partner, b) poor mental and physical health resulting from recent and current abuse, c) the personal "costs" of getting assistance (i.e. helpers' expectations of women and/or the "rules" in service agencies), and, d) unwanted changes to patterns of living, such as relocation, financial strain, and social isolation (Ford-Gilboe et al., 2005; Wuest et al., 2003). Based on the theory, when intrusion is high, women's attention shifts from their priorities, diminishing their energy and limiting their options. Thus, the stress associated with high levels of intrusion might make women to return to their abusive partners or be engaged in a new abusive relationship by making hasty connections with others (Ford-Gilboe et al., 2005).

Research has provided additional insights about factors that affect the leaving process. For example, high levels of self-esteem, independent sources of income, and high levels of control have been associated with greater likelihood of leaving the abusive partner (Anderson & Saunders, 2003), while higher levels of depression and PTSD symptoms have been associated with women's inability to maintain separation after they have left (Alhalal, Ford-Gilboe, Davies & Kerr, 2012). Additionally, social support

has been found to assist women to leave their partners and help them to move to the next stage of change (Burman, 2003).

Measurement of Intimate Partner Violence

Approaches used to measure IPV often do not adequately capture the broad range of abusive behaviours occurring within the context of intimate partner relationships (Goodman & Epstien, 2008). For example, self-report measures of IPV do not tend to collect information about the context, the impacts, and the meaning of IPV on individuals (Cascardi & Vivian, 1995). In fact, research findings about IPV prevalence, risk factors, health consequences, and causes vary greatly depending on the context of the study, the IPV definition used, study purpose and study methodology. Because IPV is multidimensional and a very sensitive issue, individual measures tend to only partially capture these experiences. Given that no one measure captures all aspects of IPV, many studies (e.g. Crossman, Hardesty, & Raffaelli, 2016; Jackson & Shannon, 2015; Staggs & Riger, 2005; Theran, Sullivan, Bogat, & Stewart, 2006; Wittenberg, Joshi, Thomas, & McCloskey, 2007) have used more than one measure of IPV in order to capture a broader range of characteristics of IPV.

The most common IPV measures used in the literature are the *Composite Abuse Scale (CAS; Hegarty, Bush, & Sheehan, 2005)*, *Conflict Tactics Scale (CTS; Straus, 1979)*, and the *Index of Spouse Abuse (ISA; Hudson & McIntosh, 1981)*. As mentioned earlier, measuring the central dimensions of IPV has proved to be problematic in the literature, which may explain why multiple instruments exist. No measure to date tap into women's subjective experiences of IPV by ask each woman to describe the acts she

considers abusive (Bogat et al., 2005). However, existing measures have been successful in improving IPV research by standardizing the approach used to capture specific types (e.g. physical, psychological,) and severity (e.g. mild, moderate and severe) of IPV. In spite of all this, there is still a need for further validation of IPV measures, particularly when using them for the first time in a specific population.

The *Conflict Tactic Scale* is the most commonly used measure of IPV (Crane, Rice, & Schlauch, 2018). It was originally developed by Straus to study interpersonal conflict in intimate relationships including reasoning, verbal aggression, and physical abuse (Straus, 1979). The popularity of the CTS and the CTS-2 scales may come from the fact that they capture sensitive information about physical and verbal conflict in heterosexual relationships. However, the CTS has been critiqued for assuming that violence is family-based and borne out of specific family conflicts (Schwartz, 2000). In addition, CTS does not capture the context of IPV by asking about the motives for violence or verbal aggression, assuming that these acts are a result of conflict, rather than power or manipulation and control (DeKeseredy & Schwartz, 1998). For example, although a woman may slap her partner a few times as an act of self-defence, this would be counted in the same way as a pattern of abuse from her partner, masking the coercive control.

The *Composite Abuse Scale* is a 30-item scale that captures the severity of physical and emotional abuse and harassment, and their combinations, in the previous 12 months in four subscales. It was developed for women who have been involved in a relationship for at least one month (Hegarty, Sheehan, & Schonfeld, 1999). The CAS has

been widely used in recent studies of IPV (MacMillan et al., 2009) because it has been well-tested and is easy to administer and score. In addition, it considers multiple domains of abuse including physical, emotional, harassment, and the combination of these, improving its ability to capture women's experiences of IPV in a comprehensive way.

The *Index of Spouse Abuse*, a 30-item summated scale, has been extensively used in studies of IPV. The ISA was initially developed and validated by Hudson and McIntosh (1981) to measure women's experiences of IPV in the previous 12 months. Items on the ISA captures various types of abuse including physical, sexual, and emotional violence. In its original form, the ISA has two independent subscales (physical and nonphysical abuse). In addition, items have different weights corresponding to the severity of abusive act captured by that item. The ISA has been criticized its 2-factor structure (physical and non-physical abuse) which seems quite limited and vague given that IPV is considered to be a multidimensional concept that encompasses various types of abuse (Plazaola-Castaño, Ruiz-Pérez, Escribà-Agüir, Montero-Piñar, & Vives-Cases, 2011). For example, sexual IPV and coercion control have been found to impact women's mental health as well (Coker et al., 2000; McFarlane et al., 2005) and these types of abuse could be categorized as separate dimensions in measurement. Non-physical abuse may include various types of acts that may have different effects on women's lives and may require different considerations. In spite of critiques, the ISA has been used extensively in studies internationally, although the psychometrics have not been assessed among Canadian women. Further testing is needed to assess both the

reliability and validity of the ISA Scale among women living in different contexts. Thus, this study was conducted to further evaluate the reliability and validity of the ISA Scale in a community sample of Canadian women with histories of IPV.

In summary, there is evidence that most women will eventually leave or try to leave the abusive relationship in order to be safer and have a better life. In most studies, the process of leaving is depicted as complex and challenging, with women seeking resources to help and support them overtime. In addition, there is evidence that the abuse may continue even after the relationship has ended. However, little is known about the specific resources women use to maintain better life after separation or what impact these resources have on QOL. Moreover, attention needs to be given to testing the reliability and validity of IPV measures, including the *Index of Spouse abuse*, in diverse samples of women, including among Canadian women.

Quality of Life

In health literature, the concept of Quality of Life (QOL) has been used since World War II. QOL first appeared in response to technological evolutions that prolonged the life of individuals (Haas, 1999). A multitude of concept analyses (Fayers, & Machin, 2013; Haas, 1999; Kleinpell, 1991; Meeberg, 1993; Taylor, Gibson, & Franck, 2008) have been published in an attempt to provide some conceptual clarity.

QOL has emerged as an important concept for assessing the quality and outcomes of health services and health care. Since the 1970s, interest in QOL as a concept has increased in both clinical practice and research. QOL has become a significant outcome measure in studies of individuals living with chronic stressors, since

complete recovery from stress consequences is unlikely. Despite the increasing interest in QOL, there is lack of consensus about the definition and measurement of QOL (Anderson & Burckhardt, 1999; Wolfensberger, 1994) and a call to unify the definition of the concept by various researchers in social science, psychology, and public health (Benítez, 2016).

Definitions of QOL include those that focus on satisfaction with life and well-being (Ferrans, 1996) and general experiences of life (Meeberg, 1993). It is important that each concept be clearly defined in order to promote consistency in its use and outcomes. Ferrans (1996) stated, “differences in meaning can lead to profound differences in outcomes for research, clinical practice, and allocation of health care resources” (p.294).

Researchers sometimes use health-related QOL (HRQOL) and QOL as synonymous. However, these concepts are distinct. On one hand, QOL is a general concept that encompasses all factors that might affect personal experiences, personal perceptions and general well-being. On the other hand, HRQOL encompasses factors that relate to *health* such as physical, emotional, and general health perceptions. Naughton, Shumaker, Anderson, and Czajkowski, (1996) defined HRQOL as “a subjective perception, influenced by the current health status, of the ability to perform those activities important for the individual” (p.117). This concept emphasizes functional ability and is often measured by the SF36 (Post, 2014) or similar self-report scales. In contrast, overall QOL, or subjective well-being, has been operationalized as a general sense of contentment with how one experiences the world (Diener, Suh, Lucas, & Smith,

1999; Taylor, & Bogdan, 1990). It encompasses how one experiences many aspects of life: social relationships, personal development and fulfillment, self-determination and autonomy, and physical and material well-being (Giangreco, Dennis, Cloninger, Edelman, & Schattman, 1993; Hughes, Hwang, Kim, Eisenman, & Killian, 1995; Schalock, 1997).

There is supporting evidence that women who have experienced IPV have poorer overall QOL and HRQOL than those who have not lived with abuse (Alsaker, Moen, & Kristoffersen, 2007; Alsaker, Moen, Nortvedt, & Baste, 2006; Bybee & Sullivan, 2002; Bybee & Sullivan, 2005; Costa et al., 2014; Sullivan & Bybee, 1999). In a study of 3496 men and women from general population of six European cities who had experienced abuse, the physical and mental component of the short form of health survey (SF-36) was found to be negatively related to the severity of IPV (Costa et al., 2014). In addition, low HRQOL has been significantly correlated with physical acts of violence among women (Alsaker et al., 2007, 2006). Moreover, Sullivan and Bybee, who developed and used the QOL Scale, found that overall QOL was diminished among women who experienced IPV (Bybee & Sullivan, 2002; Bybee & Sullivan, 2005; Sullivan & Bybee, 1999).

The limitations of the studies discussed above are that the definition of QOL used was not clear in most studies and the measurement used was not specific to women who experienced IPV. Variability in QOL definitions may depend on the population under study and the domains of interest in a specific study. The distinction between QOL and HRQOL is often unclear in the literature; this may be because the

physical health domain (i.e. health-related QOL) has primarily been studied. More research is needed to examine the relationship between previous IPV experience and general QOL.

The World Health Organization QOL Working Group (1998) defined QOL as “individuals’ perceptions of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and social relations. It is a broad ranging concept affected in a complex way by the person’s physical health, psychological state, level of independence, social relationships and their relationship to salient features of their environment” (p. 25). This definition encompasses all QOL domains that resonate with a broad spectrum of populations. QOL is a subjective concept that is shaped by external and internal experiences with some emphasis on past experiences, personality, and mental state (Berlim & Fleck, 2003). Moreover, the WHO definition of QOL is the most frequently used in the literature because it integrates attention to cultural variations, rather than considering culture as an extraneous variable (Skevington, 2002).

Measures of QOL Used Among Women Who have Experienced IPV

There are limited QOL measures used in the literature in studies of women who have experienced IPV. The most popular measures are the *SF36*, *WHOQOL measure*, and *QOL Scale*. Studies focussed on women’s health have tended to use the SF36 and like scales in order to measure women’s QOL, which limit the breadth of the concept of QOL. The SF36 is a short form health survey questionnaire (Ware et al., 1993) that was developed by the Rand Corporation in the USA in order to measure HRQOL (Bowling,

1997). This measure has been used in many studies to measure HRQOL and QOL among women experiencing/experienced abuse (Alsaker, Moen, & Kristoffersen, 2008; Alsaker, Moen, Kristoffersen, Social, & May, 2015; Alsaker et al., 2006; Wittenberg et al., 2007). However, it can be criticized for not capturing the full range of QOL domains that are important to women who have experienced IPV.

The WHOQOL measure was created by the WHOQOL group. Alternative versions of this measure include the WHOQOL-100 (The WHOQOL Group, 1995), the WHOQOL-BREF-26 (The WHOQOL Group, 1998) and EUROHIS-8 (Schmidt, Muhlan, & Power, 2006). To date, these measures have been used widely among different populations around the world (Fumincelli, Mazzo, Martins, & Mendes, 2017; Josic et al., 2012; Oleś, 2016; Post, 2014; Yazdani et al., 2018), including among women experiencing violence (Carreiro et al., 2016; Lucena et al., 2017). While these measures capture broad range of QOL domains, they also have some limitations when applied to women who experienced violence. For example, the original form is too long, while shorter scales lack some important domains of QOL that are important to women who have experienced violence (such as how they feel about their safety or emotional health). Therefore, there is a need for a brief, self-report measure of QOL that specifically taps into the experiences of women with histories of IPV.

Finally, the Quality of Life Scale is a brief self-report measure developed by Sullivan and colleagues (Sullivan & Bybee, 1999) in response to this gap and as a way of addressing the limitations of other QOL measures available at that time. The development of items on the QOL Scale was informed by the *Social Indicators of Well-*

Being identified by Andrews and Withey (1976). Their conceptual model of life quality focused on individual perception of life as a whole and their affective responses to two inter-related life domains: role-related life situations and evaluative criteria (Andrews, 1974). For example, an individual's satisfaction with family responsibilities (a role-related situation) might depend on the extent to which family members help him/her achieve success or promote a certain standard of living (if these are important values for that person). This measure has limited published information about the process used to select, adapt or test the item pool. Therefore, additional research is needed to assess its validity and reliability, particularly the factor structure, among women with histories of IPV before wider adoption in research.

Social Support

Social support is a resource that has been linked to a variety of health outcomes. Social support is a complex concept that has been variously used to describe social bonds, social networks and social contact (Ducharme, Stevens, & Rowat, 1994). The conceptualization of social support includes both enacted support (the support that one actually receives) and perceived support (the support that one thinks is available and ready if needed)(Barrera, 1986). In addition, many types of social support have been identified in the literature. For example, House (1981) described four types of social support including appraisal support, emotional support, instrumental support, and informational support.

There is consistent support in the literature for a positive relationship between social support and health across a wide range of populations (Holt-Lunstad et al, 2010;

Uchino, 2004) and this support is translated in several different ways. In general, social support is thought to directly affect physical health and to protect against mortality and mental health problems (Uchin, 2004). In addition, Lepore, Evans, and Scneider (1991) proposed that social support mediates the stress-distress relationship. For example, many studies have shown that social support is negatively related to PTSD symptoms among maltreated or victimized youths (Bradley, Schwartz & Kaslow, 2005; Hershberger & D'Augelli, 1995; Ozer, Best, Lipsey & Weiss, 2003; Wu, Chen, Weng & Wu, 2009).

In the context of IPV, social support and coping strategies have been found to diminish levels of adverse psychological outcomes among women (Coker et al., 2002; Lee, Pomeroy, & Bohman, 2007). For example, social support from individuals outside the intimate relationship has been identified as an important protective factor against IPV (Klein & Milardo, 2000). In fact, the likelihood of violence against women decreases as the amount of social support increases (Baumgartner, 1993). Thus, women who have stronger social support from family and friends may have greater protection from victimization and re-victimization from their intimate partner than women with weaker social support systems.

Both social support and access to community resources have been associated with higher QOL across various populations (Diener & Fujita, 1995; Hobfoll & Lilly, 1993; Sarason, Sarason, & Pierce, 1990). Analyses of longitudinal data from women in the two-year period after a shelter stay provide support for this relationship in the context of IPV (Bybee & Sullivan, 2002); specifically, women with higher social support and who had less difficulty obtaining community resources, also reported higher overall QOL.

Furthermore, over time, improved QOL led to significant protection from future abuse. These findings are important because they provide direction for health care professionals as they work to improve women's QOL after leaving and provide some initial support for the association between IPV history and QOL mediated by personal and social resources. Studies that have explored QOL among women who have experienced IPV are very limited, and definitions used in these studies are often unclear. When included, the focus on QOL has usually been secondary to other purposes.

In general, social resources may affect health in both positive and negative ways (Tilden & Galyen, 1987). Tilden et al. (1990) defined social support as "the perceived availability or enactment of helping behaviors by members of the social network" (p. 338), and conflict as "perceived discord or stress in relationships caused by behaviors of others, or the absence of behaviors of others, such as the withholding of help" (p. 338). In the context of IPV, relatives and family members may provide support to abused women, but may also blame the women for the abuse (Barnett, 2001). Friends and family may avoid IPV survivor because they fear the attacker, or they prefer not to interfere, as they perceive abuse as a personal matter (Beeble, Bybee, Sullivan, & Adams, 2009). The abusive partner may isolate the woman from her support system as a method of control (Levendosky et al., 2004). Thus, IPV may weaken social support, in turn, negatively affecting women's life satisfaction and well-being. In a correlational study, Thompson et al., (2000) found that higher levels of IPV among 138 African American women were related to lower levels of social support and lower levels of social support were related to higher levels of distress. In the previous study, several

limitations were found including that partner violence was assessed using only the Index of Spouse Abuse (ISA). In addition, using a cross-sectional data hinder the ability to test the effects of IPV experiences on social support over time.

Social Support after Leaving an Abusive Relationship

It is crucial to examine the role of women's resources in overcoming the ongoing effects of IPV. Among abused women, social support has been found to diminish the negative mental health effects of IPV and improve women's well-being (Bosch & Bergen, 2006; Thompson et al, 2000). In addition, social support from people outside the abusive relationship has been recognized as an important protective factor against IPV (Klein & Milardo, 2000). Social support may be affected by separation as well (Thorpe & Golding, 1998). For example, one study revealed that women's perceived social support was reduced after separation by about 40% (Albrecht & Adelman, 1984; Rands, 1981). In addition, the loss of social support may occur because of changes in residence that diminish community ties (Cohen & Wills, 1985; McLanahan, & Sandefur, 1994). Research to date indicates that increased social support helps women obtain resources and services that decrease the negative consequences of IPV (Bybee & Sullivan, 2002; Goodkind, Gillum, Bybee, & Sullivan, 2003; Goodkind et al., 2004) and to safely leave the abusive relationship (Hage, 2006).

Social Support and QOL

Although few studies have investigated the relationship between social support and QOL, these studies provide consistent support for such a relationship. Social support may act as a protective factor against the physical and psychological consequences of

stress. Researchers have found that perceived social support is more strongly and consistently related to overall QOL than actual support (Kaniasty & Norris, 1992).

Social support has been linked to QOL among women experiencing IPV. In one study (Tan et al., 1995), women who were more satisfied with their social support were also more likely to be satisfied with their QOL. Likewise, results of a longitudinal experimental investigation of an advocacy intervention for battered women showed that women who participated in the intervention had higher levels of social support and QOL over a 2-year period compared to women in the control condition (Sullivan, 2003). Women who have experienced IPV and who have higher levels of social support have also reported higher levels of health-related QOL compared to women with lower levels of social support (Gielen, McDonnell, Wu, O'Campo, & Faden, 2001; McDonnell, Gielen, O'Campo, & Burke, 2005). In spite of these findings, there are significant gaps in the literature with respect to the relationships between social support and QOL among women who have experienced IPV. Specifically, more research is needed to explain the effects of chronic strain associated with IPV on women' QOL after leaving the abusive relationship after many years of separation.

Social Support and QOL Post-Separation. Only a few longitudinal studies have examined social support over time among abused women. Beeble, Bybee, Sullivan, and Adams (2009) interviewed 160 women who had separated from abusive partners six times over two years in order to examine the role of social support in buffering the psychological consequences of IPV. Quality of life was measured using the 9-item QOL Scale developed for this study. Results showed that that social support was positively

related to QOL and negatively related to depression. In addition, social support partially explained the effect of baseline level and subsequent change in physical abuse on QOL and depression overtime; partially mediated the effects of change in psychological abuse; and moderated the impact of abuse on QOL. In general, the strongest effect of social support was observed at lower levels of abuse. In a report from the same study, Beeble and colleagues (2009) found that higher social support was related to less abuse and higher QOL at multiple points of time. Although this study was conducted with a small sample of women who had accessed a shelter, it provides promising results regarding the relationship between social support and QOL among women experiencing IPV over time, and suggests that social support both mediates and moderates the effects of abuse on QOL. Whether these findings would be found in samples of women who do not access a shelter is unknown.

In a second study, Mertin and Mohr (2001) interviewed 100 Australian women accessing a shelter at two points in time: during shelter stay and one year later. Retaining 59 of 100 women at the one-year follow up, they found a significant reduction in PTSD, depression, and anxiety over a one-year period; both social support and IPV severity predicted psychological distress. In addition, the findings indicated that social support and women's safety were very important prerequisites for recovery. Because women's psychological health and safety are important dimensions of QOL, we can infer that social support also affects women's overall QOL. Limitation for the previous study is that the sample size was small for generalization of the study findings and the use of a PTSD scale that did not adequately capture women's symptoms.

In summary, there is evidence that social support has direct and indirect (mediating and moderating) effects on the relationship between IPV and women's health after separation. However, most all of the studies did not assess other dimensions of QOL (e.g. women's safety). In addition, given that studies included only women who had recently left the abusive relationship (i.e. within two years), the effects of IPV on QOL beyond this period of time are not known.

Mastery

Mastery has been defined as "the extent to which people see themselves as being in control of the forces that importantly affect their lives" (Pearlin et al., 1981, p. 340). As a construct, mastery belongs to a wide range of control beliefs that may include self-efficacy, locus of control and perceived control (Haidt & Rodin, 1999). These constructs are mostly theorized as coping mechanisms or personal resources that individual can depend on in response to chronic stressors, and they are believed to be constant over time (Taylor & Stanton, 2007). Personal mastery has been distinguished from these constructs in that it is a general rather than specific expectation about an individuals' ability to cope (Haidt & Rodin, 1999).

Various researchers have described mastery as perceptions of control over difficult or stressful situations or events (Lachman & Weaver, 1998; Younger, 1993) or competence (Sowell et al., 1999). Because traumatic events and chronic stressors including IPV may be harmful to mastery (Turner, Finkelhor, & Ormrod, 2010), research recently has focused on factors that indirectly affect mastery. Individuals with high levels of mastery feel a sense of control over their future and life situations; they have

confidence that they can solve their life problems and control their own life outcomes (Gadalla, 2009; Lehavot, Walters, & Simoni, 2009; Pudrovskaya, Schieman, Pearlin, & Nguyen, 2005). However, individuals with low levels of mastery feel helpless to solve their life problems, believe that they cannot control life outcomes and that other or external factors control their fate. Mastery is, therefore, a potent resource that may protect individuals' physical and mental health against deleterious adversities such as economic hardship (Kessler & Essex, 1982; Lachman & Weaver, 1998; Pearlin & Radabaugh, 1976) or perhaps abuse/violence.

As stressors accumulate, individuals may be less effective in dealing with them, increasing the chance of disease or mental or psychological distress (Pearlin, 1989). Research provides support for the role of mastery as a mediator between life stressors and health consequences, as well as a coping mechanism that moderates the detrimental effects of life stressors on peoples' mental and physical health (Jang et al., 2006; Pitkala, Laakkonen, Strandberg, & Tilvis, 2004; Pudrovskaya, Schieman, Pearlin, & Nguyen, 2005). Higher levels of mastery have been associated with better physical and mental health (Roepke & Grant, 2011); personal mastery has been associated with decreased negative effects of life stressors such as economic strain/hardship (Lachman & Weaver, 1998) and caregiving burden (Mausbach et al, 2006). For example, Goosby (2007) conducted a longitudinal analysis of a U.S. national survey and found that the length of time mothers suffered economic hardship predicted their level of mastery, which, in turn, mediated the effects of economic hardship on their children's mental and psychological health. Similarly, Pudrovskaya and colleagues (2005) found that older

individuals' mastery both mediated and moderated the relationship between economic strain and older adults' mental and physical outcomes.

Mastery may be particularly important for individuals coping with chronic stressors or trauma. Previous traumatic experiences including IPV, can lead to feelings of lack of control and competence – aspects of mastery (Sowell et al., 1999). For example, one study of 152 sexual minority American Indian and Alaska Native women examined the association between previous physical and sexual assault (a type of chronic strain) and health outcomes. Participants reported high prevalence of physical and sexual violence both of which were associated with poorer mental and physical health. These relationships were mediated by diminished levels of mastery (Lehavot et al., 2009). However, the retrospective cross-sectional study design limits the ability to confirm causal relationships between violence, mastery and health. In addition, since sexual assault did not predict mastery, the relationships between sexual assault, mastery and health could not be tested.

Thus, in the context of IPV, more severe IPV has been associated with lower levels of mastery among women (Lewis, Milletich, Kelley, & Woody, 2012; Renner, Cavanaugh, & Easton, 2014; Umberson, Anderson, Glick, & Shapiro, 1998). However, the possible mediating effect of mastery on the relationship between IPV severity and general QOL has not been studied among women with histories of IPV.

Mastery and QOL

An accumulation of stressors and traumatic events such as IPV, may be harmful to women's level of mastery (Turner et al., 2010). Women's QOL may be affected as a

result of changes in mastery since individuals with high levels of mastery believe they have the power to bring about needed life outcomes while avoiding unwanted ones (Pearlin & Schooler, 1978; Pudrovskaya et al., 2005), while those with a limited sense of mastery feel helpless to control their lives (Pudrovskaya et al., 2005). Research has shown a positive relationship between mastery and general well-being (Bovier, Chamot, & Perneger, 2004; Marshall & Lang, 1990; Mausbach et al., 2007; Roepke et al., 2009). For example, mastery has been found to reduce the effects of life stresses on individual's QOL among individuals living with human immune deficiency virus (Gibson et al., 2011).

Although there has been insufficient research testing the relationship between mastery and recent and ongoing IPV experience, it has been argued that various concepts have similar meanings as mastery (i.e. one's perception to control over life circumstances), including self-efficacy and agency (Lehavot et al., 2009; Thompson, Kaslow, Short, & Wyckoff, 2002). One study examined the effects of mastery and other resources on psychological well-being for women with histories of IPV and found that mastery was a strong predictor of psychological distress (Skomorovsky & LeBlanc, 2017). These results suggest that improving women's mastery might improve their overall well-being.

Moreover, previous abusive experiences may reduce women's mastery over the environment (Umberson et al., 1998). In a qualitative study that explored the recovery experiences of women who had suffered IPV in Taiwan, creating mastery was one of the major themes (Hou, Ko, & Shu, 2013). In another study in which mastery was

conceptualized as a source of empowerment, women's QOL was found to improve after empowering experiences (Cattaneo & Goodman, 2010).

Mastery and Social Support

Mastery and social support have been conceptualized as important resources for dealing with chronic strain (Pearlin, Lieberman, Menaghan, & Mullan, 1981). Green and Rodgers, (2001) suggested that there is a reciprocal positive relationship between mastery and social support. Higher levels of mastery may improve people's ability to seek and obtain social support (Holahan & Holahan, 1987) while perceptions of stronger support may lead to greater feeling of control over the environment. Mastery implies a positive perception about one's ability to cope with stressful events and may be related to the ability to determine when social support is needed (Hobfoll, Shoham, & Ritter, 1991). For example, in one study, women's social support seeking was influenced by their level of mastery following a stressful birth (Hobfoll et al., 1991). In other words, when mastery is high, women make more thoughtfully and actively seek support when they face a stressful situation in their life. In addition, it is also expected that having more access to social support may help increase women's sense of mastery or control. There is evidence that women who report higher levels of social support also feel that they have more control over their lives (Belle, 1982; Gadalla, 2009; Martire, Stephens, & Townsend, 1998). This suggests that women's mastery is shaped by the context of their lives and is not purely a reflection of their personal desire or capacity to 'take control'.

In the context of IPV, positive social reactions to disclosures of IPV have been proposed to affect women's process of leaving an abusive relationship (Liang, Goodman,

Tummala-Narra, & Weintraub, 2005). It is possible, therefore, that social support heightens IPV victims' mastery and self-esteem, which may lead to ending the abusive relationship by making a decision to leave (Nurius, Furrey, & Berliner, 1992). Although the association between mastery and social support has not been examined among women experiencing IPV, findings from one qualitative study showed that women with histories of IPV reported more positive social reactions helped them leave the abusive relationship while non-supportive people hindered their ability to leave (Fanslow & Robinson, 2010). While this suggests that social support may lead to enhanced mastery, mastery was not measured directly in this study. Whether mastery leads to increase social support is a gap in the literature.

Summary of the Review of Literature

In summary, many gaps in the literature have been identified in this review and justify the need to test the relationship between the main study variables (IPV, QOL, Mastery and social support) among Canadian women who have separated from an abusive partner. To date, research has examined various aspects of IPV including the prevalence, scope, nature, causes and consequences. However, gaps in knowledge about the nature of this complex concept still exist. For example, the mediating effects of social support and mastery have not been adequately studied among women who have left an abusive relationship. In addition, well-validated self-report measures that are capable of capturing the complexity of IPV and QOL are needed to advance research on QOL among women experiencing IPV (De Melo et al., 2018). Ideally, such measures should be comprehensive and able to capture all aspects of both concepts that are

important to this population, including their personal subjective experiences with various types of IPV, personal safety, family responsibilities, and general satisfaction in life, yet be brief enough to be useful in a variety of research contexts.

IPV has been associated with QOL among women (Laffaye, Kennedy, & Stein, 2003). A negative relationship of IPV and social support is well documented in the literature (Tirone, Shorey, Nathanson, & Rhatigan, 2014; Wright, 2012), with some evidence that women who leave an abusive relationship have difficulties forming close trusting relationships with others (Guruge et al., 2012). In addition, being in an abusive relationship affects access to social support because the abuser tends to limit women's contact with family and friends (Guruge, et al., 2011). In addition, mastery affects women's decisions to leave the abusive relationship, and may also shape their QOL, but these relationships need further study.

By addressing these gaps, this study will enhance existing understanding about the role of women's personal and social resources in shaping the relationship between IPV and QOL, with implications for the development of practices and policies to better support the safety and well-being of women and their families in the aftermath of IPV.

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CHAPTER 3

VALIDITY AND RELIABILITY OF SULLIVAN'S QUALITY OF LIFE SCALE AMONG WOMEN WITH HISTORIES OF INTIMATE PARTNER VIOLENCE

The increased prevalence of traumatic experiences (Glaesmer, Gunzelmann, Braehler, Forstmeier, & Maercker, 2010) such as war and Intimate partner violence (IPV) internationally has led to global awareness about the need to study individuals' quality of life (QOL) and life satisfaction as a significant outcome of these experiences.

According to the World Health Organization (1998), QOL is "individuals' perceptions of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and social relations" (p. 25).

Although QOL is now understood to be an indicator of life satisfaction and general well-being at the population level, and widely discussed in both the academic literature and in the media (Nortvedt & Riise, 2003), researchers and theorists continue to debate the underlying dimensions of QOL (Alsaker, Moen, & Kristoffersen, 2007; Felce & Perry, 1995; Longo, Coyne, & Joseph, 2017) and the factor structure of QOL in self-report measures (Schalock, 1997; Yazdani, Sharif, Elahi, Ebadi, & Hosseini, 2018). Attention to these issues is an important aspect of developing reliable and valid measures QOL measures.

Previous traumatic experiences, such as IPV, pose significant health and social risks to the lives of women (Lilly, Howell, & Graham-Bermann, 2015) and may undermine their QOL (Achchappa et al., 2017). While researchers have begun to demonstrate a relationship between IPV and QOL, this area of investigation is still in the early stages of development. The limited body of research on QOL among women with

histories of IPV and living in varied contexts is due, in part, to the lack of valid and reliable measures of QOL appropriate for these populations.

A well-validated self-report measure that is capable of capturing the complexity of QOL is needed to advance research on QOL among women experiencing IPV (Lustosa et al., 2018). Ideally, such a measure should be comprehensive and able to capture all aspects of QOL that are important to these women, including their personal safety, family responsibilities, and general satisfaction in life, yet be brief enough to be useful in a variety of research contexts.

Sullivan and Bybee (1999) developed a nine-item, theoretically grounded, self-report measure of QOL for use with women with histories of IPV. This instrument includes items that tap into aspects of quality of life, such as safety, and are important in this context. The QOL Scale has demonstrated good internal consistency reliability in several studies conducted primarily in the United States, with evidence of sensitivity to change over time (Adams, Bybee, Tolman, Sullivan, & Kennedy, 2013; Beeble, Bybee, Sullivan, & Adams, 2009; Sullivan & Bybee, 1999). Although the Quality of Life Scale is a promising measure for both descriptive and intervention research, the lack of published information about the validity of the scale, including its factor structure, has limited broader uptake of this measure. Further testing is needed to assess both the reliability and validity of the QOL Scale among women living in different contexts. Thus, this study was undertaken to further evaluate the reliability and validity of the QOL Scale in a community sample of Canadian women with histories of IPV.

Review of Literature

Conceptualizing Quality of Life (QOL)

In health literature, Quality of Life (QOL) is a concept that has been used extensively since World War II. QOL first appeared in response to technological evolutions that prolonged the life of individuals (Haas, 1999). In the past several decades, QOL has been studied in various fields, including in the health sciences, social sciences, and family studies (Moons, Budts, & De Geest, 2006).

It is important that concepts be clearly defined in order to promote consistency in their use and outcomes. Ferrans (1996) notes that “differences in meaning can lead to profound differences in outcomes for research, clinical practice, and allocation of health care resources” (p.294). Despite increased interest in studying QOL, this area of research is challenging because there is no unifying definition of QOL, leading to conceptual ambiguity around the meaning of this concept. A multitude of theoretical QOL frameworks and concept analyses (Fayers & Machin, 2013; Haas, 1999; Kleinpell, 1991; Meeberg, 1993; Taylor, Gibson, & Franck, 2008; Van Hecke et al., 2018) have been published in an attempt to provide some conceptual clarity. However, various conceptual problems remain. For example, there is a tendency for researchers to conflate QOL and health status when they are, in fact, different concepts (Anderson & Burckhardt, 1999a). The assumption that “healthy” people (i.e. those who are free of disease) will score higher on QOL measures has been challenged by research showing that many people with significant health problems also report high levels of QOL (Feder et al., 2015). In addition, whether QOL includes subjective dimensions, objective

dimensions, or both has been debated (Georgiou, 2009; Oleś, 2016; Post, 2014). However, there is now general consensus that QOL is a subjective and personal experience because only people can reliably evaluate their satisfaction with different life domains (Ferrans, 1996; Moons, Budts, & De Geest, 2006). Finally, whether QOL is a static trait or one that can change over time has been discussed. There is research evidence that people may evaluate their QOL differently over time (Lucena, Vianna, Nascimento, Campos, & Oliveira, 2017; Sullivan, 2018) due, for example, to changes in coping skills, the progression of illness, or situational/cultural changes. Sound measures of QOL are needed that address these theoretical issues and ensure that they capture a person's subjective experiences of a variety of life domains, including those that are important in a particular context.

The World Health Organization (WHO) proposed a widely used, broad conceptualization of QOL that has advanced research by addressing some of these theoretical issues. According to the WHO QOL Working Group (1998), QOL is an "individuals' perceptions of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and social relations. It is a broad ranging concept affected in a complex way by the person's physical health, psychological state, level of independence, social relationships and their relationship to salient features of their environment" (p. 25). A strength of this definition is that it integrates attention to cultural variations, rather than considering culture as an extraneous variable (Skevington, 2002). In addition, it encompasses a broad range of QOL domains that resonate with a broad spectrum of populations, and

treats QOL as a subjective concept that is shaped by external and internal experiences, with some emphasis on past experiences, personality, and mental state (Berlim & Fleck, 2003).

Andrews and Withey (1976) also identified a broad set of QOL domains, including role functioning, enjoyment, pleasure, sense of control over one's environment, emotional or mental health, sense of social integration, sense of security in present and future, self-esteem, and appreciation, based on the idea that quality of life incorporates perceptions of "life as a whole" and specific role-related-situations within an individual's life, along with values (Andrew & Withey, 1976; Andrews & Withey, 1974). Some possible role-related situations include matters having to do with a person's job, housing, and family. A person's values could include having fun, being independent, and achieving success.

Since QOL is a broad, subjective and dynamic concept, it is critical to understand how chronic stressors/traumatic experiences, such as women's experiences of IPV, may affect their QOL. In the literature, researchers often use health-related QOL (HRQOL) and QOL as synonymous, including in studies of women with histories of IPV. However, these concepts are distinct. On the one hand, QOL is a general concept that encompasses factors that might affect personal experiences, personal perceptions of different aspect of life and general well-being. On the other hand, HRQOL encompasses factors that relate to *health* such as physical, emotional, and general health perceptions. Despite the fact that these two concepts are genuinely different in the factors they include, there is some overlap between the two. For example, some health dimensions

such emotional health are important to consider in a general QOL assessment as it may change women's perceptions about their QOL.

Naughton, Shumaker, Anderson, and Czajkowski, (1996) defined HRQOL as “a subjective perception, influenced by the current health status, of the ability to perform those activities important for the individual” (p.117). Thus, this concept emphasizes functional ability and is often measured by the SF36 (Post, 2014) or similar self-report scales. In contrast, overall QOL, or subjective well-being, has been operationalized as a general sense of contentment with how one experiences the world (Diener, Suh, Lucas, & Smith, 1999; Taylor, & Bogdan, 1990), including satisfaction with life and well-being (Ferrans, 1996) and general life experiences (Meeberg, 1993). Important domains of a broad concept of QOL include, for example, social relationships, personal development and fulfillment, self-determination and autonomy, and physical, material and economic well-being (Giangreco, Dennis, Cloninger, Edelman, & Schattman, 1993; Hughes, Hwang, Kim, Eisenman, & Killian, 1995; Schalock, 1997). Failure to clearly differentiate between QOL and HRQOL, and to select psychometrically sound measures that fit with the definition used, adds to lack of clarity about the nature and impacts of QOL. This problem also exists in studies of QOL among women who have experienced IPV, where the SF-36 health survey, a measure of HRQOL, has been used to measure global QOL (Alsaker, Moen, Kristoffersen, Social, & May, 2015; Alsaker, Moen, Nortvedt, & Baste, 2006; Wittenberg, Joshi, Thomas, & McCloskey, 2007). Because HRQOL is a more focused concept, associated measures fail to consider the breadth of women's subjective QOL in life domains important to women, such as safety and independence.

In sum, QOL is a subjective and dynamic concept that has been used interchangeably in the literature with general life satisfaction and general well-being. Various domains should be considered when measuring QOL among women who have experienced IPV such as enjoyment and safety. There is often a mismatch between the definition of QOL and the measure used. Therefore, a clear definition and conceptualization is critical when conducting QOL research.

Quality of Life among Women who have Experienced IPV

QOL is an important concept for women in general (Carreiro, Micelli, Sousa, Bahamondes, & Fernandes, 2016) and specifically for women who have experienced chronic stressors, such as IPV. Given the considerable evidence that IPV is linked to a wide range of negative health, social and economic consequences for women, attention to women's QOL should be a critical part of understanding their healing process. However, there is limited evidence from a few cross-sectional quantitative studies (Laffaye, Kennedy, & Stein, 2003; Leung, Leung, & Ho, 2005; Ross, Saenyakul, & Kleman, 2015; Sadler, Booth, Nielson, & Doebbeling, 2000) that IPV is related to women's QOL. Although QOL includes many domains, almost all of these studies have narrowly focused on one or two domains of women's QOL (such as physical health or life satisfaction) and have overlooked other potentially important aspects of QOL as discussed earlier. In contrast, findings from qualitative studies (Bermudez et al., 2013; Duffy, 2015; Rizo, 2016; Weeks, Macquarrie, Begley, Gill, & Leblanc, 2016) have provided considerable evidence that IPV is a distinct stressor that has strong negative effects on various aspects of women's lives, including women's level of independence, self-esteem, and

family responsibilities (Adams et al., 2013; Al-Natour, Qandil, & Gillespie, 2016; Bernardo & Estrellado, 2017; Howell, Miller, & Graham-Bermann, 2012). Collectively, findings of these studies suggest that women's vulnerability to abuse and poor quality of life continues during and after the transition of separating from an abusive partner as they begin to care for themselves and for their families in new contexts (Duffy, 2015).

There is evidence that women who have experienced IPV have poorer overall QOL and HRQOL than those who have not experienced IPV (Alsaker, Moen, & Kristoffersen, 2007; Alsaker, Moen, Nortvedt, & Baste, 2006; Bybee & Sullivan, 2002; Bybee & Sullivan, 2005; Costa et al., 2014; Sullivan & Bybee, 1999). For example, in a study of 3496 men and women with histories of IPV from the general population of six European cities, negative relationships were found between the physical and mental component of the short form health survey (SF-36) and severity of IPV (Costa et al., 2014). In addition, lower HRQOL was significantly correlated with acts of physical violence among women (Alsaker et al., 2007, 2006). Moreover, in a program of research testing the effects of a post-shelter advocacy intervention among women in the U.S. (Bybee & Sullivan, 2005), women who worked with advocates experienced less IPV and reported higher QOL over time. This is one of a few studies to consider QOL among women experiencing IPV in a broad way consistent with the WHO definition, and which used a measure of QOL that fit with a broader conceptualization, albeit one that requires additional psychometric testing.

Measurement of QOL in the Context of IPV

Researchers who have examined QOL among women with histories of IPV have employed different QOL measures, including the SF36 and SF12 Health Survey, World Health Organization QOL scale (WHOQOL), and the 9-item Quality of Life Scale developed by Sullivan and colleagues (Sullivan & Bybee, 1999). A key issue that has appeared in the literature concerns the poor fit between the conceptualization and measurement of QOL; in studies of women experiencing IPV, this is a common problem (Barnett, 1991; Kaplan & Ries, 2007; Wittenberg et al., 2007). For example, in a recent review of literature, Anderson and Burckhardt (1999b) concluded that QOL is an important outcome of health care interventions but that the measurement of QOL often does not match the conceptualization.

The use of different measures in QOL studies may lead to contradictory results because different measures taps different aspects of QOL, yet measures should be selected that fit with the most important domains of QOL for a specific population. A focus on health-related QOL might be because the physical health domain (i.e. health-related QOL) has primarily been measured using SF36 or SF12, while other important domains of QOL for women who experienced IPV, such as women's safety, have been neglected. These domains are critical for women experienced IPV but may be less important in other contexts, such as among women who care for children with chronic disease.

Developed in the 1990's by the Rand Corporation (Ware & Sherbourne, 1992), the SF36 measures QOL in eight dimensions (i.e., physical functioning, social functioning,

and role limitations due to physical problems, mental health, energy, bodily pain, and general health perceptions). The SF12 and SF6D measures were derived from the original SF36. However, the SF36 is limited as a measure of QOL among women with histories of IPV as it emphasizes the physical health domain of QOL, rather than capturing a broad range of domains.

The WHO group created a number of self-report measures in order to evaluate QOL, including the WHOQOL-100 (The WHOQOL Group, 1995), and subsequently, the WHOQOL-BREF-26 (The WHOQOL Group, 1998) and EUROHIS-8 (Schmidt, Muhlan, & Power, 2006). To date, these measures have been used widely among different populations around the world (Fumincelli, Mazzo, Martins, & Mendes, 2017; Josic et al., 2012; Oleś, 2016; Post, 2014; Yazdani et al., 2018), including among women experiencing violence (Alsaker, Moen, & Kristoffersen, 2008; Carreiro et al., 2016; Lucena et al., 2017). However, the WHO measures also have some limitations when applied to women who have experienced violence. Specifically, the WHOQOL-100 and WHOQOL-BREF-26 are multidimensional measures that contain 100 and 26 items respectively reflecting various dimensions of QOL including physical health, psychological, level of independence, social relationships, environment, and spirituality/personal beliefs. Some of these dimensions, such as those related to the physical environment (pollution, noise, and traffic) may not reflect the most important aspects of QOL for women experiencing IPV. Although two shorter measures (WHOQOL-BREF and EUROHIS-8 Index) have been developed, the wording of some items in these scales may be problematic for women who have experienced IPV. For example, most of

the questions ask people to rate how satisfied they are with only some aspects of their lives; many other items that tap important aspects of quality of life for women who have experienced abuse, such as how they feel about their safety or emotional health, are not included. There is a need for a brief, self-report measure of QOL that specifically taps into the experiences of women with histories of IPV.

The Quality of Life Scale is a brief self-report measure developed by Sullivan and colleagues (Sullivan & Bybee, 1999) in response to this gap and as a way of addressing the limitations of other QOL measures available at that time. Items on the QOL Scale were developed, in part, from the *social indicators of well-being* identified by Andrews and Withey (1976). Their conceptual model of life quality focused on individual perceptions of life as a whole and their affective responses to two inter-related life domains: role-related life situations and evaluative criteria (Andrews, 1974). In other words, they assumed that individuals' perceived QOL reflects the evaluation of particular *role-related situations* in light of particular *values*. For example, an individual's satisfaction with family responsibilities (a role-related situation) might depend on the extent to which family members help him/her achieve success or promote a certain standard of living (if these are important values for that person).

Sullivan and colleagues drew on Andrews and Withey's Life Satisfaction Scale to create a brief, self-report measure appropriate for women who have experienced violence. Specifically, they identified nine items for the QOL Scale, each of which reflects a dimension from Andrews and Withey's longer, 123-item scale (Andrew & Withey, 1976), although limited information about the process used to select, adapt or test the

item pools has been published. The QOL Scale has been used to measure QOL among women in the United States who had left an abusive relationship and accessed a shelter (e.g. Beeble, Bybee, Sullivan, & Adams, 2009; Bybee & Sullivan, 2005; Sullivan, Campbell, Angelique, Eby, & Davidson, 1994; Sullivan, Basta, Tan, & Davidson II, 1992). These studies provide evidence of adequate internal consistency reliability of the QOL when treated as a 1-dimensional scale where Cronbach's alpha was >0.75 ; (Beeble et al., 2009; Bybee & Sullivan, 2005; Sullivan, Tan, Basta, Rumptz, & Davidson, 1992; Wuest et al., 2015). However, the validity of the QOL Scale, including its factor structure, has not been reported in the literature. Thus, prior to widespread use of the QOL Scale, additional research is needed to assess its validity and reliability, particularly the factor structure, among women with histories of IPV. The purpose of this study was to assess the psychometric properties of the QOL Scale in a community sample of Canadian women with histories of intimate partner violence. Specifically, we assessed the reliability (internal consistency), construct validity (factor structure), and concurrent validity of the QOL Scale.

Method

A quantitative secondary analysis of data from women who had participated in the *Women's Health Effects Study* (WHES; Ford-Gilboe et al., 2009) was undertaken in order to examine the reliability and validity of the QOL Scale in a community sample of Canadian women with histories of IPV. The WHES is a longitudinal study of changes in women's health, experiences of IPV and resources over a four-year period after initially leaving an abusive partner (Ford-Gilboe et al, 2009). Wave 1 of this study included 309

adult (18 years of age or older), English-speaking women who had left an abusive partner at some point in the three years prior to enrollment and were no longer living with an abusive partner. The community sample was recruited from three Canadian provinces (Ontario, British Columbia, and New Brunswick) using advertisements placed in community settings and through service agencies. A modified version of the Abuse Assessment Screen (AAS; Parker & McFarlane, 1991), which included items related to physical abuse, fear of partner, forced sex, and controlling behavior, was used to confirm exposure to IPV as part of the eligibility process. Eligible women received a verbal description of the study from a research assistant and were invited to take part in five structured interviews at baseline and 12, 24, 36, and 48 months later (Ford-Gilboe et al., 2009). Interviews were conducted in a private location selected by the women or, after the baseline interview, over the phone if there were limitations in accessing the participants because they had moved long distances.

The study was approved by Research Ethics Boards at the University of Western Ontario, University of New Brunswick, Simon Fraser University, University of British Columbia, and University of Victoria based on the Tri-council Ethics guidelines (Ford-Gilboe, et al., 2009). Written informed consent was obtained from participants at enrollment, and reconfirmed at each data collection session. A detailed safety protocol was used to guide all interactions between women and the research team (Ford-Gilboe et al., 2015).

Sample

Data from wave 5 were used in this analysis because the QOL Scale was only included at this time point. A total of 250 women from the original sample of 309 completed Wave 5, with 249 of these women completing the QOL Scale and comprising the sample for this analysis. Demographic characteristics of the wave 5 sample are summarized in Table 1.

The mean age of participants was 44 years ($SD= 9.75$, range 23 to 68). Women's educational background varied from 7 to 30 years of formal education, with a mean of 14 years education ($SD = 3.270$). Most (58.3%) were employed. The mean of women's annual income ranged from 0 to \$80,000/year with a mean of \$28,891.90 and median of \$20,803 ($SD = 24,033.79$). About half (52%) of women in the sample were parenting children under the age of 18. However, more women were mothers but their children were older than 18 years old.

Only three of 250 women were living with the abusive partner they had left when they first enrolled in the study four years earlier, although 45.2% of women had contact with this partner. Overall, 62% of women were in a partner relationship at some point in the year prior to collecting the wave 5 data. At the time of interview, 34.8% of women ($n=87$) reported that they were experiencing IPV, either from their former partner (25.6%, $n=64$) or a new partner (9.2%, $n=23$).

Table 1

Demographic Profile of the Wave 5 Sample (N=250)

Characteristic	% Sample (n)
Employment Status	
Employed Full-Time	38.9 (96)
Employed Part-Time	19.4 (48)
Not employed	41.7 (103)
Missing	1.2 (3)
Parenting a Child(ren) <18 years of age	52.0 (130)
Relationship with Abusive Partner she left at Study Entry:	
Had Contact with this Partner	45.2 (113)
Living with this Partner	1.2 (3)
Not living with this Partner	98.8 (246)
Relationships Status	
In any partner relationship in previous 12 months	62.4 (156)
Reports Current Abuse	34.5 (87)
From previous partner	25.6 (64)
From other partner	9.2 (23)

Measurement

This analysis used women's responses on the QOL Scale, along with self-report measures of depressive symptoms and symptoms of Post-Traumatic Stress Disorder (PTSD) to assess concurrent validity, since there is strong evidence that both depression (Adams et al., 2013; Gillum, Sullivan, & Bybee, 2006; Sutherland, Bybee, & Sullivan, 2002) and PTSD (Kelly, 2010; Mendelson, Turner, & Tandon, 2010; Samuels-Dennis, 2009) are negatively associated with QOL. Women's responses to survey questions on a demographic questionnaire were used to describe the sample.

The Quality of Life Scale (Sullivan & Bybee, 1999) is a 9-item self-report measure of women's satisfaction with 9 areas of their lives proposed to be important to women who have histories of violence. The first question captures how women feel about their lives as a whole, while the remaining eight questions capture women's satisfaction with specific aspects of their lives: personal safety, fun and enjoyment, themselves, family responsibilities, accomplishments, independence and freedom, and the way they spend their spare time. For each question, women are asked to report their satisfaction using a 7-point Likert-type scale ranging from *extremely pleased (1) to terrible (7)*.

All items were reverse coded and summed to produce total scores ranging from 9 to 63, where higher scores reflect higher levels of QOL. In the original work by Sullivan and Bybee (1999), Cronbach's alpha reliability was .88 with corrected item-total correlations ranging from .56 to .79, suggesting good relationships between items in the scale (Sullivan & Bybee, 1999). Internal consistency (Cronbach's alpha) reliability of the QOL in other studies of women in the United States has ranged from .85-.92 (Beeble et al., 2009; Beeble, Sullivan, & Bybee, 2011; Bybee & Sullivan, 2005; Gillum, Sullivan, & Bybee, 2006; Goodkind et al., 2003). In spite of evidence of reliability, information about the validity (factorial, concurrent) of the QOL Scale has not been reported. However, given that total scores are computed by summing responses to all items and internal consistency has been reported for all items, there appears to be an assumption that the QOL Scale is unidimensional.

The 20-item Center for Epidemiologic Studies-Depression (CESD) Scale (Comstock & Helsing, 1977; Radloff, 1977) was used to measure depressive symptoms.

On the CESD, women are asked to report the frequency of experiencing symptoms consistent with depression in the previous week using a 4-point Likert scale, with responses ranging from *none of the time or rarely* (0) to *most of the time* (3). Responses are summed to produce total scores ranging from 0 to 60. The CESD is a widely used self-report measure that has evidence of both reliability and validity in various populations (Andresen, Malmgren, Carter, & Patrick, 1994; Cheng & Chan, 2005; Ghazali, Elklit, Balang, & Chen, 2016; Kim et al., 2017; Miller, Anton, & Townson, 2008; Van Dam & Earleywine, 2011), including in women who have experienced IPV (Ford-Gilboe et al., 2009; Gibbs, Corboz, & Jewkes, 2018; Parker & Lee, 2007; Wuest et al., 2015). Content validity, criterion validity and construct validity have been assessed in psychiatric settings. Internal consistency (Cronbach's alpha) was .78 in the current study.

The 17-item Davidson Trauma Scale (DTS; Davidson, Tharwani, & Connor, 2002) was used to measure symptoms of post-traumatic stress (e.g. Evren et al., 2011; Fan et al., 2008; Juárez & Guerra, 2010; O'Neill, 2014; Warshaw et al., 1993). The 17 items on this scale reflect 3 clusters of symptoms consistent with a PTSD diagnosis including: re-experiencing, avoidance, and arousal symptoms. On this summated rating scale, women are first asked to identify the trauma that is most disturbing to them. Then, for each of 17 items reflecting symptoms of PTSD, they rate how often the symptom occurs in the past week frequency on a scale ranging from not at all (0) to everyday (4), along with the level of distress they experienced (severity), on a scale ranging from not at all distressing (0) to extremely distressing (4). For each subscale and for all items, separate frequency

and severity scores are created by summing applicable responses (range 0 to 68 across all items). Total scores are computed by summing the frequency and severity scores for all items (range 0-136) and for each symptom cluster. The DTS has demonstrated good reliability and validity across varied populations (Ali, Farooq, Bhatti, & Kuroiwa, 2012; Baek, Lee, Joo, Lee, & Choi, 2010; Chen, Lin, Tang, Shen, & Lu, 2001; Davidson et al., 2002; Mason, Lauterbach, McKibben, Lawrence, & Fauerbach, 2013; Seo et al., 2008). The internal consistency of the total DTS score in this study was .92.

Data Analysis

Preliminary analysis related to missing data was conducted before the main analysis. Missing data occurred at a low frequency ranging from 0% to 0.8%. Little's test (Little, 1988) was used in SPSS to assess the patterns of missing data. Descriptive statistics were computed to inspect the distribution of each variable, and the pattern of missing values was assessed. Structural Equation Modeling (SEM) assumes that missing data are missing at random (MAR) or missing completely at random (MCAR; Allison, 2003; Li, 2011). Since the *p*-value for Little's test was significant, the assumption of Missing Completely at Random (MCAR) was not confirmed. Therefore, missing data were handled in the analysis using the full-information maximum likelihood (FIML) estimator because it has been shown to produce unbiased parameter estimates and standard errors under missing at random (MAR). An item-analysis was also run using SPSS to take a preliminary look at the reliability (internal consistency) and the extent to which each item was associated with the total score.

To assess the construct validity of QOL scale, exploratory and confirmatory factor analyses were conducted using MPLUS 8 (Muthén & Muthén, 2012) with maximum likelihood estimation. A two-step approach was used to assess the factorial validity of the QOL Scale. Specifically, given that lack of guidance about the structure of the QOL, we decided to run an exploratory factor analysis (EFA) to inspect the QOL-item pool before proceeding to a confirmatory factor analysis (CFA) to validate the structure of the scale.

In both the EFA and CFA, the extent to which the model fit the data was assessed using the following indices: comparative fit index (CFI), root-mean-squared error of approximation (RMSEA), Chi-Square, and standardized root mean square residual (SRMR). These indices were chosen because they are the most insensitive to sample size, parameter estimates, and model misspecification (Hoyle & Gottfredson, 2014). The CFI is “an incremental fit index (IFI) that is also a goodness-of-fit statistic” (Kline, 2016). Its value ranges from 0 to 1 where 1 reflects “best fit”. A CFI value of greater than or equal .95 is recognized as a good fit (Hu & Bentler, 1999). RMSEA is an absolute fit where 0 value indicates the *best or exact fit; however*, because perfect fit is rare, values were interpreted as follows: less than .05 is considered *close fit*; between .05 and .08 is considered *fair fit*; .08 and .10 is *mediocre fit*; and values greater than .10 are *poor fit* (Chan et al., 2007). Values for the SRMR range from 0 to 1.0, with a well-fitting model having a value of less than .05, but with values as high as .08 considered acceptable fit (Hu & Bentler, 1999). Consistent with SEM analysis, both fit indices and modification indices were inspected to determine whether the model could be modified to improve

fit. Modification indices that were theoretically reasonable and greater than 4.0 were considered.

Finally, the reliability of the QOL Scale was assessed by computing both the internal consistency using Cronbach's alpha and the composite reliability based on omega (Heise and Borhnstedt, 1970). Composite reliability is a coefficient measure that is based on factor loadings for each item that can vary and it is represented by coefficient omega. Composite reliability can be calculated in two ways, using the variance-covariance matrix or correlation matrix (Ercan, Yazici, Sigirli, Ediz, & Kan, 2007). It is considered to be a superior choice for reliability in structural equation modeling due to the fact it draws on the standardized regression weights and measurement errors for each item (Padilla & Divers, 2015). Descriptive statistics at the item level, and internal consistency reliability based on Cronbach's alpha were assessed using the Statistical Package for Social Sciences (SPSS) Version 24.

Results

Descriptive statistics for each item on the QOL Scale are shown in Table 2. The mean of each item was relatively high (range 4.56 to 5.63), with the highest and lowest means observed for *personal safety* and *fun and enjoyment*, respectively. Based on recommendations proposed by Kline (2016), the absolute values for skewness index (SI) and kurtosis index (KI) were inspected and showed that the data were normally distributed if $SI < 3$ and $KI < 10$.

Table 2

Item-level Descriptive Statistics, Item-Total Correlations, and Internal Consistency of 9 Items on the QOL Scale (n=249).

QOL Item	<i>M</i>	<i>SD</i>	<i>Skew</i>	<i>Kurtosis</i>
1: Life as a whole	4.89	1.47	-.58	.03
2: Yourself	4.75	1.49	-.71	.06
3: Personal safety	5.63	1.35	-1.65	1.45
4: Fun and enjoyment	4.56	1.69	.56	-.25
5: Responsibilities	4.67	1.91	-1.05	.58
6: Accomplishments in life	4.79	1.60	-.50	-.21
7: Freedom to live life as you want	5.12	1.78	-.71	-.40
8: Your emotional and psychological well-being	4.71	1.65	-.66	-.15
9: How you spend your spare time	4.59	1.64	-.50	-.34

Factor Structure of the QOL Scale

An unrestricted EFA using ML estimation and oblique rotation was conducted in order to identify a potential latent structure for the QOL scale. Two Eigenvalues with values close to or greater than 1 (5.541 and .797) were identified. Therefore, we ran models specifying 1 and 2 factor solutions (See Table 3). The items loading on each of the 2 factors are shown in Table 3 and the fit indices for 1 and 2 factor solutions are shown in Table 4. The 1-factor solution was identified as the most reasonable even though the fit indices were slightly better for the 2-factor solution because there were no commonalities between the 1-factor solution items and only two items loaded onto the second factor in the 2-factor model factor 2. After inspecting the fit indices and factor loading for each item, a single factor solution was selected as the best and only theoretically reasonable model after considering one correlation between the error

terms. The fit indices for this model were all acceptable (see Table 4). No items were identified for deletion based on the factor loadings, which were all greater than .4. Items 9 (*how you spend your spare time*) and 4 (*fun and enjoyment*) were correlated; however, this seems reasonable given that they both capture similar concepts (i.e. leisure and recreation).

Table 3

Item Distribution For 2-Factor Solution

Factor 1 Items	Factor 2 items
1: Life as a whole	4: Fun and enjoyment
2: Yourself	9: How you spend your spare time
3: Personal safety	
5: Responsibilities	
6: Accomplishments in life	
7: Freedom to live life as you want	
8: Your emotional and psychological well-being	

Next, MPLUS 8 was used to conduct a CFA of the 9 items on the QOL Scale in an attempt to replicate the original 1 factor structure. Model fit was assessed using several goodness-of-fit indices (see Table 4). The chi-square test was statistically significant but the 1 factor model was not rejected because chi-square is sample size sensitive (Garson, 2007), and the remaining fit indices suggested a good fit between the model and data. Factor loading for the items ranged from .49 to .90, indicating that the 9-item solution was acceptable (see Table 5). The descriptive statistics for the 9-item scale were: mean =43.74, $SD=11.34$, range .46 to .90. Skewness was -.54 and kurtosis was -.34, which reflects a normal distribution.

Table 4

EFA and CFA fit indices using MPLUS 8

	Chi Square	RMSEA	CFI/TLI	SRMR
EFA 1 Factor	10.34 (.110)	0.096	0.958/0.944	0.034
EFA 2 Factor	45.974(0.0005)	0.075	0.982/0.965	0.024
CFA 1 Factor	88.951(0.0000)	0.096	0.958/0.944	0.034

Table 5

Factor Loadings for QOL-Items: 1 Factor Solution

Items	Factor Loadings
1: Life as a whole	.90
2: Yourself	.86
3: Personal Safety	.49
4: Fun and Enjoyment	.70
5: Responsibilities	.46
6: Accomplishments	.85
7: Freedom to live as you want	.79
8: Emotional & Psychological Well-being	.83
9: Spend Spare Time	.75

Reliability and Concurrent Validity of the QOL Scale

The internal consistency of the QOL estimated using Cronbach's alpha and composite reliability were .91 and .92, respectively, for all 9 items, with item-total correlations ranging from .46 to .84. The inter-item correlation coefficients ranged from .30 to .79 (mean .56) for the full scale, suggesting that all items were contributing to the

total score and no items were redundant. Concurrent validity was assessed using both CESD and the DTS. As hypothesized, the QOL total score was moderately and negatively related to the total depression score on the CESD ($r = -.739$), and showed a moderate to strong association with the total score on the Davidson Trauma Scale (DTS; $r = -.537$). These results provide initial support for the concurrent validity of the QOL Scale.

Discussion

This research assessed the psychometric properties of the QOL Scale, a brief self-report measure developed specifically for use with women who have histories of IPV. To our knowledge, this is the first published study to investigate the factor structure of this scale using both exploratory and confirmatory factors analyses. The results offer consistent support that the QOL Scale is unidimensional with items reflecting a single concept, and is consistent with the assumption of unidimensionality made by those who have previously used this measure. Furthermore, evidence of concurrent validity was supported through the high correlations found between the QOL Scale and established symptom-based measures of depression (CESD) and PTSD (DTS). Internal and composite consistency for the full scale was very good based on alpha and omega. Thus, this is evidence of validity and reliability of the QOL Scale among Canadian women with histories of IPV.

The results of this analysis are consistent with those of previous studies (Bybee & Sullivan, 2005; Sullivan, 1991; Tan, Basta, Sullivan, & Davidson, 1995) in which support for the reliability of the QOL Scale among women who had experienced have IPV was found, largely in samples of women living in the U.S and accessing shelters. Our results

extend these findings to include women living outside the U.S, who were recruited from the community (rather than shelters), most of whom had experienced IPV in the past. This suggests that the QOL Scale is appropriate and useful in various samples of women who have experienced violence. This is important because IPV experiences may vary among women as do the trauma consequences of IPV (Cordero, 2014; Theran, Sullivan, Bogat, & Stewart, 2006). Further research is needed to identify additional QOL dimensions for women who have experienced IPV. An accurate understanding of these domains might help improve the assessment of women's QOL.

The QOL Scale is a reliable and valid self-report measure of QOL among women who have experienced IPV that covers nine different dimensions (1 global and 8 specific) and can be used to advance research on QOL among women with histories of IPV. In addition, the availability of the QOL Scale could enhance evaluations of the effects of programs and interventions that may help women with histories of IPV to improve their life quality. Both Sullivan's program of intervention research testing the effectiveness of post-shelter advocacy and pilot studies testing the Intervention for Health Enhancement After Leaving (iHEAL) demonstrate that QOL as measured on the QOL Scale is responsive to change from interventions delivered by trained advocates (Bybee & Sullivan, 2002; Sullivan, Bybee, 1999; Sullivan, Campbell, Angelique, Eby, & Davidson, 1994) and nurses (Wuest et al., 2015). QOL is an important outcome of these types of interventions because researchers developed interventions aimed at reducing the distress and the negative consequences women experience after separating from an abusive partner.

Therefore, the QOL scale could allow researchers to capture the most critical aspects of women's lives that are related to their previous and current IPV experiences.

The results of this study resonate with the WHO theoretical model used to develop WHOQOL measures because it suggests that QOL should be treated as a subjective concept that differs conceptually from objective QOL (which should be measured separately). In addition, as an outcome variable, improvements in QOL have been found to reduce IPV re-victimization (Sullivan et al., 1994) and improve women's capacities after leaving (Wuest et al., 2015). Therefore, support for clustering all QOL items in one dimension in a sample of women who have experienced IPV may have implications for a more comprehensive assessment of women's QOL than more narrowly focused measures that are commonly used.

Researchers who conceptualize QOL as a health-related concept have mainly used measures such as SF-36, SF12, and SF8 (Alsaker et al., 2007; Costa et al., 2014; Hegarty et al., 2013; Leonhart, Wirtz, & Bengel, 2008; Li et al., 2012; McDonnell, Gielen, O'Campo, & Burke, 2005; Wittenberg et al., 2007). These scales can be critiqued for adopting a narrow focus on measuring health and functioning, while excluding aspects of women's lives such as safety, accomplishments, and freedom to make your own decisions. These aspects of QOL are particularly important in the context of IPV given that many women living with and through violence have lived without these things. In this context, the QOL scale is a reasonable alternative to these scales. In the literature, there is a lack of research that conceptualizes and measures multiple domains of QOL (Moons et al., 2006; Plummer & Molzahn, 2009) such as one's general life satisfaction

and freedom to make life decisions. Instead, many of these important aspects of QOL are incorporated as part of physical and emotional functioning.

The existence of other QOL measures, such as WHOQOL Index, makes it possible to compare different measures. Sullivan's QOL Scale is considered a broad QOL measure with items specifically developed to fit with the most important aspects of QOL for women who have histories of IPV (such as safety, and independence) and tested with this group. In contrast, the WHOQOL measures focus on general dimensions of QOL that are not necessarily specific to women who have experienced IPV. Therefore, Sullivan's QOL scale makes a unique contribution to QOL measurement that may improve the ability of researchers understand and measure women's QOL in a way that resonates with their lives and priorities. Attending to different QOL dimensions in abusive relationships could highlight how women's previous IPV experiences may have different impacts on their lives than other traumatic experiences (Medina, Erazo, Dávila, & Humphreys, 2011). For example, physical abuse, psychological abuse and coercive control create a unique form of relationship that has important effects on women's safety and future relationships with others and cause a great deal of fear and dependence on the abuser (McDonald & Dickerson, 2013). These impacts on QOL may not be the same for other types of traumatic events.

The ability to measure QOL as one underlying concept also helps to clarify the QOL concept. In addition, assessing a range of aspects of women's life satisfaction has the potential to enhance our understanding about the extent to which women who have histories of IPV are likely to experience changes in many facets of their lives.

According to Goodkind, Gillum, Bybee, and Sullivan (2003), women who have left an abusive relationship do not merely suffer from visible physical consequences, but also suffer from other consequences of violence, including a diminished sense of safety for themselves and for their family and children. Future research should address the adequacy of the nine items on the QOL scale in capturing all of the domains of QOL that are important to women. For example, other important dimensions of women's QOL, such as economic well-being, housing, and relationships significant others (Cordero, 2014; Macy, Martin, Nwabuzor Ogbonnaya, & Rizo, 2018) warrant consideration. This recommendations is consistent with findings of qualitative studies in which housing, financial difficulties and relationship with significant others have been identifies as important aspects that define women's lives after separation from an abusive partner (Duffy, 2015; Linder & Widh, 2014).

Finally, the finding that two items (9, "how you spend your spare time" and 4 "fun and enjoyment") should be correlated could be related to the wording of the two items and the fact that the meaning could be understood as almost the same. Women try to spend their spare time with activities they enjoy. Women experiencing violence tend to be isolated because of the actions of the abusive partner (Humphreys & Lee, 2009) and have many responsibilities, and these factors can negatively affect both how they spend their spare time and fun and enjoyment they have in life (Beeble et al., 2011).

Strengths and Limitations

The results of the current analysis provide evidence supporting the reliability and validity of the QOL Scale in a community sample of Canadian women who had separated from an abusive partner. This study extends psychometric testing of this self-report measure to address construct validity, and shifts testing beyond the women in the U.S. who had accessed shelters who were participants in previous studies.

However, several limitations of this study are important to consider. First, the data used in the analysis were originally collected to examine women's mental and physical health in the early years after leaving an abusive relationship and not to conduct a psychometric analysis of the QOL Scale. As a result, the selection of measures that could be used to assess concurrent validity of the QOL Scale was limited. In future studies, consideration should be given to using the WHOQOL index to examine concurrent validity of the QOL Scale since this is considered to be a gold standard measure of general quality of life that is both reliable and valid in many populations. Moreover, further research is needed to examine the structure of the QOL Scale with samples of women from various cultural backgrounds in order to confirm its factor structure in different contexts. Furthermore, future research should focus on the possibility of expanding the QOL scale to ensure that it includes key domains that may be missing, such as economic or financial strain, and re-evaluating the psychometric properties of the revised scale.

Conclusion

The results of this study suggest that the Quality of Life Scale is a brief, reliable and valid unidimensional, self-report measure of OOL among women who have experienced IPV. These findings extend evidence about the psychometric properties of this scale, and provide new evidence to support its structure in a community sample of Canadian women who had separated from an abusive partner. While additional testing is needed in different contexts, the QOL scale offer a promising approach for advancing research on women's quality of life in the context of IPV, and for evaluating the impacts interventions focused on enhance women's capacity and safety in the transition of separating from an abusive partner.

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CHAPTER 4

VALIDITY AND RELIABILITY OF INDEX OF SPOUSE ABUSE SCALE (ISA)

Intimate Partner Violence (IPV) is a worldwide phenomenon that refers to “any behavior by a current or former intimate partner that causes physical, sexual or psychological harm, including acts of physical aggression, sexual coercion, psychological abuse and controlling behaviors” (World Health Organization, 2016). Since the early 1980’s, IPV has received significant attention and has been considered by many scholars as an important health and human rights issue that needs to be studied (Duffy, 2015). In Canada, victims of IPV accounted for approximately 27% of all violent crimes reported to police in the year 2014; four out of five victims of IPV were women (Statistics Canada, 2016). Understanding the experiences of women who have endured IPV and its effects over time depends on access to high quality data about various types of IPV, including their frequency of occurrence and seriousness.

In a recent review, Bender (2017) examined current knowledge about ethical issues, methods and measurement in IPV research and suggested that further research is needed in order to establish a broader evidence base for prevention of abuse and improved life outcomes. Many methodological challenges associated with conducting high quality research on IPV have been described, including access to reliable and valid self-report measures that have been validated among women from various contextual and cultural backgrounds (Follingstad, 2011; Heise, 1998). High quality evidence about IPV and its consequences cannot be developed without valid and reliable measures that are capable of capturing the multidimensionality and complexity IPV (Follingstad &

Ryan, 2013). Without well-validated IPV measures, it will be challenging both to conduct large-scale population studies that could produce important information about IPV experiences or to appropriately assess the impacts of interventions designed to reduce IPV or its negative effects. The ways in which IPV is conceptualized and measured has important implications for prevention and treatment options available in the community (Wooden, Sotskova & O'Leary, 2013).

Despite the existence of many self-report measures of IPV experiences (CDC, 2014), including the *Composite Abuse Scale* (CAS; Hegarty, Sheehan, & Schonfeld, 1999) and the *Conflict Tactics Scale* (CTS; Straus & Gozjolko, 2014), researchers face an ongoing challenge of adequately capturing the context and meaning of IPV experiences using self-report scales. For example, the *Conflict Tactics Scale* (CTS; Straus, Hamby, Finkelhor, Boney-McCoy, & Sugarman, 2004), one of the most commonly used self-report measures of IPV (Adams, Tolman, Bybee, Sullivan, & Kennedy, 2012; Johnson, Delahanty, & Pinna, 2008; Kimmel, 2002; Lilly, Howell, & Graham-Bermann, 2015; Shannon, Nash, & Jackson, 2016; Skiff, 2009), frames IPV as gender-neutral conflict between intimate partners and gives little attention to the context in which IPV occurs (Crane, Rice, & Schlauch, 2018). This is not consistent with the widely adopted definition of IPV proposed by the World Health Organization (2011).

Although IPV is a complex, multi-dimensional concept, many self-report measures place the greatest emphasis on physical abuse and pay less attention to psychological abuse in spite of evidence that psychological abuse, including verbal attacks, manipulation and control have significant negative effects on women's health

and are a strong predictor of women's health outcomes (Sowell, Seals, Moneyham, Guillory, & Mizuno, 1999; Tavoli, Tavoli, Amirpour, Hosseini, & Montazeri, 2016; Tobiasz-Adamczyk, Brzyski, & Brzyska, 2014). By focusing on physical abuse and neglecting other types of abuse in self-report measures, the reported prevalence of IPV may be vastly underestimated. Some existing measures, including the *Index of Spouse Abuse scale* (ISA) include a substantial focus on psychological abuse; however, the construct validity of the ISA has been questioned (Cook, Conrad, Bender, 2003).

Assessing the factor structure of an IPV measure can provide insights into the underlying dimensions of IPV that it captures, potentially adding to theory or empirical evidence about the nature of IPV, and allowing researchers to make informed judgments about the fit of a measure with the definition of IPV used in a specific study. The reliability and validity of IPV measures should be assessed and reported in all studies, yet this information is often not included in study reports so that other researchers can benefit from these insights. Without such disclosure, the quality of IPV measures in different populations and contexts remains uncertain.

To date, there is no 'ideal' self-report measure of IPV since even widely used measures have some limitations. For example, the CTS (Strauss, 1979) has been widely criticized for failing to consider the context of IPV, for focusing on the number of violent acts, and for including items about partners' psychological conflict rather than psychological abuse itself. Similarly, the *Composite Abuse Scale* (Hegarty, Bush, & Sheehan, 2005) has been critiqued for the wording of its response options and some items themselves (particularly those related to sexual abuse), and for using a scoring

approach that classifies women as ‘abused or not abused’ using cut-off scores rather than capturing IPV experience in a continuum (Ford-Gilboe et al., 2016). A brief version of this scale (*CASr-SF*) has been developed by Ford-Gilboe and colleagues (2016) in an effort to overcome all these limitations. However, further psychometric testing is required among people of all genders in order to further validate this new scale. Thus, IPV measurement continues to evolve with no single measure consider the ‘gold standard’. There is a continuing need for focused attention on psychometric testing of existing IPV measures and refinements to improve the quality of measurement.

Index of Spouse Abuse Scale (ISA)

The ISA is a 30-item summated rating scale developed by Hudson and McIntosh (1981) to measure of women’s experiences of physical, sexual and psychological IPV in the previous 12 months along two independent dimensions: physical abuse and non-physical abuse. Although a widely used early measure that has demonstrated adequate reliability across studies, the factor structure of the ISA has been questioned given that different results have been obtained in varied samples (Campbell, Campbell, King, Parker, & Ryan, 1994; Cook, Conrad, Bender, & Kaslow, 2003).

The ISA was originally validated with three different samples of women in the United States. The first sample was comprised of 398 female graduate and undergraduate students from the University of Hawaii, all of whom were married and residing with a male spouse. To evaluate the factorial (construct) validity of the ISA, exploratory factor analysis was conducted using principal component analysis with varimax rotation. This process confirmed the two factors: *Physical abuse* (11 items: 3, 4,

7, 13, 17, 22, 23, 24, 27, 28, 30) and *Nonphysical abuse* (19-items: 1, 2, 5, 6, 8, 9, 10, 11, 12, 14, 15, 16, 18, 19, 20, 21, 25, 26, 29,) each of which demonstrated adequate internal consistency (Cronbach's alpha = .90 and .91, respectively).

The second testing sample was comprised of 188 graduate and undergraduate students and a few faculty members at the same university. Since the ISA items capture many different types of abusive acts that vary in their potential impacts, this sample was used to calibrate the ISA items in terms of the severity/ seriousness of the abusive behaviour captured by each item. Each participant rated each ISA item in terms of the seriousness reflected by the item in two steps. First, participants read all items and identified the item they thought was the *least* serious form of abuse (the marker item). Next, for each remaining item, participants were asked to identify how much more serious it was compared to the marker item. No upper limit was set for each score. These scores were then used to develop standard weights for severity of each item based on the perspectives of women (Hudson & McIntosh, 1981). However, limited information was provided about the process used to determine these weights.

The last testing sample included 107 women in total (64 women who had experienced abuse, 43 women who had not experienced abuse). In this study, the woman's abuse status was used as a criterion measure to assess discriminant validity of the ISA (Hudson & McIntosh, 1981). In contrast to the previous samples of women recruited from universities, this sample was recruited from social agencies and shelters in six U.S States. The clinical status of the sample was the independent variable and the subscales of the ISA were the dependent variables. The group mean differences with

respect to the dependent variables does not provide the best evidence of discriminant validity; rather, point-biserial correlation between dependent variables and group membership in both groups was used as better indicator. Therefore, the coefficient of discriminant validity for the ISA-P and ISA-NP were .73 and .80 respectively, which indicate excellent discriminant validity.

Scoring of the ISA is based on the results of these three foundational studies (Hudson & McIntosh, 1981). Two different scores can be computed: ISA-P (severity of physical abuse) and ISA-NP (severity of non-physical abuse). All scores range from 0 to 100 where lower scores represent the relative absence of IPV and higher scores represent the most severe and serious forms of IPV. ISA scores are computed in 4 steps. First, for items with missing responses or responses outside the range (1 to 5), weights are changed to 0. Second, a product score (P) is computed for each item by multiplying the item score (I) by the item weight (W) [$P = (I)(W)$]. Third, the minimum possible total score that a participant could obtain is computed by adding up all item weights [$MIN = \sum W$]. Finally, the ISA score (S) is computed using the following formula: $S = (\sum P - MIN)(100) / [(MIN)(4)]$. This formula is used to compute both physical and non-physical abuse subscales in cases where there are missing data. If data are complete, the physical abuse score is computed as the sum of $P/682 - 1 \times 25$, and Non-Physical abuse score is computed as the sum of $P/387 - 1 \times 25$. In addition to continuous scores, cut scores have been recommended to reflect the presence of abuse based on cumulative frequency distributions for the 'abused' group in the second development sample (Hudson & McIntosh, 1981). Specifically, a score of 10 or higher indicates physical abuse, and a

score of 25 or higher indicates non-physical abuse, while scores less than 10 or 25 indicate the relative absence of abuse.

The ISA has been used to measure IPV severity in different contexts including in studies conducted in Brazil (Santos-Iglesias, Sierra, & Vallejo-Medina, 2013), Canada (Ford-Gilboe et al., 2009), China (Tang, 1998), Spain (Plazaola-Castaño, Ruiz-Pérez, Escribà-Agüir, Montero-Piñar, & Vives-Cases, 2011), and the United States (Campbell et al., 1994; Heron, Thompson, Jackson, & Kaslow, 2003). Additionally, the reliability of the scale seems reasonable across varied contexts. While some authors have noted that the ISA is easy to use and understand (Cook et al., 2003), others have critiqued the clarity of some items (Winstok & Sowan-Basheer, 2015).

The validity of the ISA is a contentious issue. In spite of the fact that the ISA items reflect many different types of abuse, the two-factor structure (physical, non-physical abuse) does not reflect this, nor does it align well with current conceptualizations of IPV as a multidimensional concept that encompasses emotional, verbal, sexual, and physical abuse, along with coercive control (Plazaola-Castaño et al., 2011). Since the ISA includes items that reflect these different types of abuse, it may be possible to create more subscales by grouping similar items together rather than collapsing all 'non-physical' types of abuse into a single subscale. Non-physical abuse may include various types of violent acts that could have different effects on women's health and lives; including these items in a single subscale limits researcher's ability to examine these different impacts. Further, the original factor analysis conducted by Hudson and McIntosh (1981) which identified the two-factor structure of the ISA has

been critiqued on several grounds including the use of a varimax rotation that assumes factors are independent, even though types of IPV are typically correlated, and lack of information about the process used to assign the items to each scale when items cross-loaded on both scales.

The ISA has been used to assess violence experiences of women in samples from different cultural backgrounds and contexts (e.g. Bradley, Schwartz, & Kaslow, 2005; Campbell, Campbell, King, Parker, & Ryan, 1994; Coker, Pope, Smith, Sanderson, & Hussey, 2001; Ford-Gilboe et al., 2009; Hegarty et al., 2013; Koszycki, Raab, Aldosary, & Bradwejn, 2010; Owen et al., 2008; Santos-Iglesias, Sierra, & Vallejo-Medina, 2013; Sierra, Monge, Santos-Iglesias, Bermúdez, & Salinas, 2011). However, no assessment of its psychometrics has been conducted in a Canadian community sample of women.

Validation Studies of the ISA

Despite widespread use of the ISA in samples of women living in different contexts, validation studies undertaken in various cultural contexts have not demonstrated evidence of a consistent factor structure. A summary of these studies is provided in Table 1. To date, the factor structure reported by Hudson and McIntosh based on 30 items has not been replicated in any other study.

Two studies have investigated the factor structure of the ISA in samples of women in the United States (the original development context for this scale). In a sample of low-income African American women, Campbell, Campbell, King, Parker, and Ryan (1994) found that a three-factor structure explained 62% of the variance in ISA items. The 3 factors were: Physical Abuse (7 items: 4, 7, 13, 17, 23, 24, 30), Non-Physical

Abuse (17 items: 1, 2, 3, 5, 8, 9, 10, 11, 12, 14, 15, 22, 25, 26, 27, 28, 29) and a new subscale, which they named Controlling Behaviours (6 items: 6, 16, 18, 19, 20, and 21). Although Campbell et al. named the same factors as the original work suggested; the fact that items are assigned to different factors is a key difference. For example, items 3, 22, 27, and 28 were assigned to non-physical subscale rather than physical subscale as Hudson and McIntosh's work suggested. Hence, this adds evidence of the inconsistency in factor structure. In addition, further evidence of concurrent validity was provided by moderate to high correlations between the ISA and *Danger Assessment* (DA), a validated risk assessment used to identify potential for severity or lethal violence. Correlations with the DA were 0.76 for the ISA-P and .67 for the ISA-NP. In a second study of 583 African American women recruited from a hospital setting, Cook, Conrad, Bender, and Kaslow (2003) used confirmatory factor analysis to test three different theoretical models of the structure of the ISA: a) Hudson and McIntosh's original two-factor structure; b) Campbell et al.'s (1994) three-factor structure; and, c) a three-factor structure they created using 22 of 30 items, after eliminating 8 items (4, 21, 3, 16, 17, 18, 19, 24) because they had low factor loadings except for items 4 and 21 which were deleted because they reflect sexual acts. The fit indices for model three were the most acceptable ones as $\chi^2/df = 759/206$, RMSEA=0.07, and CFI=0.92. The third model was found to best fit the data, and reflected the same 3 factors identified by Campbell et al (1994): Physical Abuse (4 items: 7, 23, 28, 30), Non-Physical Abuse (11 items: 1, 8, 9, 11, 13, 14, 15, 22, 26, 27, 29), and Controlling Behaviours (7 items: 2, 5, 6, 10, 12, 20, 25). However, while the names of the factors were the same, the assignment of items to

each subscale varied substantially across these 2 studies. The process used in this study to make decision about item deletion and assignment of items to each factor was not clear. For example, it is unclear whether items were deleted based only on low factor loading or other factors, or whether communalities between each factor were considered in assigns items to scales.

One validation study (Tang, 1998) of the ISA has been conducted in China with a sample of 370 adults (236 women, 134 men) recruited from a university. Using confirmatory factor analysis, Tang (1998) showed that the ISA could be shortened from 30 to 19 items and that these items clustered into the original two factors: physical abuse (*items: 4, 7, 13, 17, 21, 24, 30*) and nonphysical abuse (*items: 1, 2, 5, 10, 12, 14, 19, 22, 25, 26, 28, 29*). Internal consistency of these 2 subscales was .91 and .79, respectively. The most obvious limitation of this structure is that it eliminated many items that are important to the concept of IPV, including items related to verbal attacks and control abuse such as *“my partner felt that I should not work or go to school”*. In addition, compared to other studies, including the original work by Hudson and McIntosh, many items were assigned to different subscales/factors. Moreover, this study included a sample of men and women, but did not analyze the results separately, even though IPV is highly gendered.

Recently, several studies have assessed the factor structure of the Spanish version of the ISA scale. In the first of these studies, Sierra et al. (2007) conducted an exploratory factor analysis of the ISA that resulted in a reduced 22-item version after deleting 8 items. This study retained the 2 original subscales proposed by Hudson and

McIntosh with items that were retained assigned to the same subscales as in that original work: Physical Abuse (8 items: 3, 7, 13, 17, 23, 24, 27, 28) and Non-Physical Abuse (14 items: 2, 5, 6, 8, 10, 11, 12, 14, 16, 19, 20, 21, 25). Cronbach's alpha coefficients were .88 and .95, respectively. Subsequently, in a confirmatory and exploratory factor analyses using data from a sample of 405 Spanish women, Torres et al. (2010) found a poor fit between the original factor structure and their data. They retained all 30 items in a 2-factor solution, but with items assigned to different factors compared to both the original scale and the structure identified by Sierra et al (2007). This structure included a 7-item Physical Abuse Scale (items: 3, 7, 13, 17, 23, 24, 30) and 23-item Non-Physical Abuse Scale (items: 1, 2, 4, 5, 6, 8, 9, 10, 11, 12, 14, 15, 16, 18, 19, 20, 21, 22, 25, 26, 27, 28 29). Again, items such as 27, 28 and 22 were assigned to the NP factor rather than P compared with the original work. In the largest study conducted in Spain, Plazaola-Castano et al. (2011) conducted an exploratory analysis of the 30 ISA items using data from 8995 women recruited from general practice. Their findings supported a unique four-factor structure (physical, emotional, sexual abuse, controlling behaviours). Sierra et al. (2011) also conducted confirmatory factor analysis to test 7 different factor structures proposed in previous research, including those proposed by Hudson and McIntosh (1981), Campbell et al (1994), Tang (1998), and Cook et al (2003). Tang's proposed two-factor structure based on 19 items organized as physical and non-physical abuse factors, showed the best fit with the data. Finally, the most recent study conducted by Santos-Iglesias et al. (2013) in a sample of 598 men supported three dimensions (physical, non-physical, and controlling behaviour) based on EFA of 30 items.

However, internal consistency of one subscale (controlling behaviour) was lower than expected at .61.

Collectively, the results of these studies show substantial differences in the factor structure of the ISA across contexts, with no studies providing support for the original 2 factor solution proposed by Hudson and McIntosh (1981) using all 30 items. While similar labels were given to factors, the items were not assigned to a consistent factor across the studies. Furthermore, researcher provided few explanations about changes in the factor structure from study to study. A number of studies focussed on replicating the original factor structure, rather than identifying a structure that best fit the data. In essence, the ISA factor structure is unclear. The original two-factor solution has not been replicated; it produces two very general factors that do not seem to make important distinctions between different types of IPV. Although the context in which IPV occurs is important, no studies have assessed the psychometric properties of the ISA among Canadian women.

Study Purpose

The purpose of this study was to assess the psychometric properties of the ISA in a community sample of Canadian women who had separated from an abusive partner. Specifically, we assessed the following properties of the ISA: a) the internal consistency reliability; b) construct validity (factor structure); and, c) concurrent validity, using three established measures of concepts known to be related to IPV (i.e. symptoms of depression and PTSD, and experiences of coercive control).

Table 1

Summary of Previous Research Studies that Assessed the ISA Factor Structure

Study	Sample	Country	# Items	Factor Structure
(Hudson & McIntosh, 1981)	398 graduate and undergraduate female students	US	30	2 factors/ Physical and non-physical
(Campbell et al., 1994)	504, low income African American women	US	30	3 factors/ Physical, non-physical, and Control abuse
(Tang, 1998)	370 undergraduate students (236 female and 134 males)	China	19	2 factors/ Physical and nonphysical
(Cook et al., 2003)	583 African American women at hospital in Atlanta.	US	22	3 factors/ Psychological, physical, and controlling
(Siera et al., 2007)	300 women	Spain	22	2 factors/ Physical and nonphysical
(Torres et al., 2010)	223 non-abused women and 182 abused of IPV.	Spain	30	2 factors/ Physical and non-physical
(Plazaola-Castaño et al., 2011)	8,995 women attending general practice	Spain	30	4 factors/ Emotional, physical, controlling behaviors, and sexual.
(Sierra et al., 2011)	813 women: 300 general, 213 abused women abuse, not abused 300	Spain	19	2 factors/ Physical and nonphysical.
(Santos-Iglesias et al., 2013)	598 males	Spain	30	3 factors/ Physical, behavior control, and nonphysical

Method

A quantitative secondary analysis was conducted to assess the reliability and validity of the ISA. For this analysis, we drew upon data collected from a community sample of Canadian women who took part in Wave 5 of the Women's Health Effect Study (WHES; Ford-Gilboe et al., 2009), a longitudinal study examining women's experiences of violence, resources and health after leaving an abusive relationship, and conducted between 2004 and 2009. The community sample included 309 adult English-speaking women who had separated from an abusive male partner at some point within three years prior to enrolment, recruited from three Canadian provinces (Ontario, British Columbia, and New Brunswick). The inclusion criteria were: age 18 years to 65 years, English speaking, had separated from an abusive male partner in the previous three years and were no longer living with that partner. The ISA was administered at all waves by a trained interviewer as part of a larger structured interview.

A modified version of the *Abuse Assessment Screen* (AAS; Parker & McFarlane, 1991) was used to confirm exposure to IPV as part of the eligibility process; women who reported having experienced at least one occurrence of abuse (i.e. physical abuse, forced sex, fear, coercive control) from a previous partner were invited to take part. Eligible women received a verbal description of the study from a research assistant and were invited to take part in five interviews (baseline and 12, 24, 36, and 48 months later; Ford-Gilboe et al., 2009). Interviews were conducted in a private location selected by the women or, after the baseline interview, over the phone if there were limitations in accessing the participants because they had moved long distances.

The Research Ethics Boards at the University of Western Ontario, University of New Brunswick, Simon Fraser University, University of British Columbia and University of Victoria approved the study based on the Tri-council Ethics guidelines (Ford-Gilboe, et al., 2009). Written informed consent was obtained from participants at enrollment and reconfirmed at each data collection session. A total of 250 women from the original sample of 309 women completed Wave 5 and, of these, 206 women completed the ISA scale and were included in this analysis.

Demographic characteristics of wave 5 sample are shown in Table 2. The mean age of participants was years 44 ($SD= 9.75$, range 23 to 68). The mean income was \$28,977.90 per year ($SD=\$20,803.00$). Women's educational backgrounds varied from 7 to 30 years with an average of 14 years of formal education and most (58.3%) were employed. About half (52%) of women in the sample were parenting children under the age of 18, although more were mothers of children were older than 18 years of age.

Only three of 250 women were living with the abusive partner they had separated from when they first enrolled in the study four years earlier, although 45.2% of women had contact with this partner. Overall, 62% of women were in a partner relationship at some point in the year prior to collecting the wave 5 data. At the time of interview, 34.8% of women ($n=87$) reported that they were experiencing IPV, either from their former partner (25.6%, $n=64$) or a new partner (9.2%, $n=23$).

Table 2

Demographic Profile of the Sample (N=250)

Characteristic	% Sample (n)
Employment Status	
Employed Full-Time	38.9 (96)
Employed Part-Time	19.2 (48)
Not employed	41.2 (103)
Missing	1.2 (3)
Parenting a Child(ren) <18 years of age	52.0 (130)
Relationship with Abusive Partner she left at Study Entry:	
Had Contact with this Partner	45.2 (113)
Not living with this Partner	98.8 (246)
Living with this Partner	1.2 (3)
Relationships Status	
In any partner relationship in previous 12 months	62.4 (156)
Reports Current Abuse	34.5 (87)
From previous partner	25.6 (64)
From other partner	9.2 (23)

Measures Used to Examine Concurrent Validity of the ISA

Three established self-report scales were used to assess concurrent validity of the ISA: the *Women's Experiences of Battering (WEB) Scale*, a measure of experiences of coercive control; and two mental health measures, the *Center for Epidemiologic Studies (CES-D) Depression Scale* and *Davidson Trauma Scale (DTS)*, a measure of PTSD symptoms. We expected that ISA scores would be positively associated with each of these validation measures based on existing literature.

Women's Experiences of Battering Scale (WEB). Smith, Earp, and

DeVillis (1995) developed the *WEB Scale* to capture the meanings that battered women

attach to the violence from a partner as an enduring presence in their lives. The *WEB* is a 10-item, self-report measure of women's fear and perceived loss of power and control based on their interactions with an intimate partner. Instead of focusing on acts of physical abuse, the *WEB* assesses a woman's perceptions of her psychological vulnerability in her relationship. A series of 10 statements ask a woman how safe she feels, physically and emotionally, in her relationship. Women are asked to rate how much they agree or disagree with each of the statements on a scale that ranges from strongly agree (1) to strongly disagree (6). All items were reverse coded and total scores computed by summing item responses, with higher scores reflecting greater coercive control.

Research has shown that the *WEB* is a more sensitive and inclusive screening tool for detecting IPV than other validated tools that focus mainly on acts of physical abuse (Coker, Pope, Smith, Sanderson, & Hussey, 2001). Therefore, concurrent validity of the *ISA* scale was assessed in relation to the *WEB* scores. Evaluation studies of the *WEB* have demonstrated its effectiveness in identifying IPV among African-American and Caucasian women (Bradley et al., 2005; Hankin, Smith, Daugherty, & Houry, 2010; Iverson et al., 2013; Taft, Bryant-Davis, Woodward, Tillman, & Torres, 2009). The *WEB* showed evidence of strong construct (convergent) validity through correlations with measures theorized to be associated with battering such as physical abuse, locus of control, and depression. In addition, all items were highly correlated ($r > .80$) (Smith, Earp, & DeVellis, 1995). Authors of a recent study testing the construct validity and use of *WEB* to identify women with an abusive partner suggest that the *WEB* taps into the

construct of fear more than the violence experience itself (Crossman, Hardesty, & Raffaelli, 2016). Thus, the focus of the ISA and WEB are complementary but not completely overlapping.

Many studies with women who have experienced IPV have used the WEB to capture the severity and ongoing effects of IPV (Baumgartner et al., 2015; Crossman et al., 2016; Houry et al., 2008; Staggs & Riger, 2005; Thomas, Wittenberg, & McCloskey, 2008; Wittenberg, Joshi, Thomas, & McCloskey, 2007). Internal consistency in these studies has ranged from .88-.95, indicating good to excellent internal consistency. In the current study, the internal consistency of the WEB was .95.

Center for Epidemiologic Studies-Depression (CES-D) Scale. The CES-D (Comstock & Helsing, 1977; Radloff, 1977) is a 20-item, self-report measure of depressive symptoms. It is an appropriate choice for examining concurrent validity of the ISA given strong evidence that IPV and depressive symptoms are related (Gustafsson & Cox, 2012; Theran, Sullivan, Bogat, & Stewart, 2006; Tsai, Tomlinson, Comulada, & Rotheram-Borus, 2016).

On the CES-D women are asked to report the frequency of experiencing symptoms consistent with depression in the past week on a 4-point likert scale ranging from *none of the time or rarely* (0) to *most of the time* (3). The responses are summed to produce total scores that range from 0 to 60. The CES-D has showed strong evidence of reliability in a range of populations, including among women with histories of IPV (Alhalal, Ford-Gilboe, Kerr, & Davies, 2012; Cheng & Chan, 2005; Ghazali, Elklit, Balang,

& Chen, 2016; Guruge et al., 2012; Parker & Lee, 2007). Internal consistency was .78 in this study.

PTSD symptoms (*Davidson Trauma Scale-DTS*). The DTS scale (Davidson, Tharwani, & Connor, 2002) was used to assess PTSD symptoms. This 17-item self-report measure was used to examine the concurrent validity of the ISA scale because there is strong evidence that IPV experiences and PTSD symptoms are related (Basile, Arias, Desai, & Thompson, 2004; Campbell, 2002; Johnson, Delahanty, & Pinna, 2008; Peltzer, Pengpid, McFarlane, & Banyini, 2013; Scott & Babcock, 2009). On the DTS, women are asked to first identify the trauma that is most disturbing to them. Thinking about this traumatic event, they then use a 5-point scale to rate each item on its frequency of occurrence (0= not at all to 4= everyday) and severity, based on its impact (0=not at all distressing to 4= extremely distressing). Overall scores are created by summing the frequency and severity scores and range from 0 to 136. The DTS scale has shown very good to strong reliability in various populations, including women with histories of IPV (Chen, Lin, Tang, Shen, & Lu, 2001; Ford-Gilboe et al., 2009; Guruge et al., 2012; Samuels-Dennis, 2009; Seo et al., 2008; Woods et al., 2005). The internal consistency of the DTS in the current study was .92.

Data Analysis

Preliminary analysis related to missing data was conducted before the main analysis. Missing data occurred at a low frequency ranging from 0% to 0.8%. Little's test (Little, 1988) was used in SPSS to assess the patterns of missing data. Descriptive statistics were computed to inspect the distribution of each variable, and the pattern of

missing values was assessed. Structural Equation Modeling (SEM) assumes that missing data are missing at random (MAR) or missing completely at random (MCAR; Allison, 2003; Li, 2011). Since the p -value for Little's test was significant, the assumption of Missing Completely at Random (MCAR) was not confirmed. Therefore, missing data were handled in the analysis using the full-information maximum likelihood (FIML) estimator because it has been shown to produce unbiased parameter estimates and standard errors under missing at random (MAR). An item-analysis was also run using SPSS to take a preliminary look at the reliability (internal consistency) and the extent to which each item was associated with the total score.

Mplus 8 was used to conduct confirmatory factor analysis (CFA) and exploratory factor analyses (EFA) of the 30-item ISA in an attempt to test whether original two-factor solution (physical and nonphysical abuse) fit the data. Assumptions of multivariate normality were assessed through the inspection of univariate distributions of the available data at the item level. According to Kline (2015), data are severely non-normal if the skewness index (SI) is >3 and kurtosis index (KI) is > 10 . In addition, box plots were inspected and there were no univariate or multivariate outliers.

The analysis plan was designed to test the validity and reliability of the ISA scale based first on the original two-factor model proposed by Hudson and McIntosh (1981). Model fit was assessed using various indices including Root mean squared error of approximation (RMSEA), chi-square, and comparative fit index (CFI), and standardized root mean square residual (SRMR) indices. Fit indices were interpreted empirically as the following: CFI of .90 indicated adequate fit with $>.95$ indicating excellent fit; RMSEA

of .08 indicated adequate fit with $>.06$ indicating excellent fit (Hu & Bentler, 1999).

Since Chi-Square it is a measure of badness of fit, a non-significant Chi-Square means that the model fits with the data (Kline, 2016). Because of the restrictiveness of the Chi-Square test, normed/relative Chi-Square was used (χ^2/df); the ratio for this statistic is acceptable if it falls between 5.0 (Wheaton et al, 1977) and 2.0 (Tabachnick & Fidell, 2007). Values for the SRMR range from 0 to 1.0, with well-fitting models having a value less than .05 and values as high as .08 considered acceptable (Hu & Bentler, 1999).

In the event that the two-factor solution did not fit the data and the MIs were not theoretically reasonable, an EFA was planned in Mplus to identify the underlying structure of the item pool among Canadian women who have experienced IPV. Despite of the fact that Varimax rotation was used by Hudson and McIntosh (1981) in the original validation, types of abuse are rarely uncorrelated theoretically and empirically (Costello & Osborne, 2005). Therefore, an EFA with oblique rotation was planned if this step of the analysis was needed. Given the complexity of the analysis, decisions about the model fit were made based on model fit indices, and reasonable conceptual and theoretical grounds.

Finally, the internal consistency of the final scale and subscales was assessed by computing Cronbach's alpha, and inter-item correlations within factor, and correlations between all factors were assessed in order to assess the strengths of these relationships. Concurrent validity of the ISA was examined by computing correlations between the ISA total score and subscale scores, with total scores on each for the validation measures (i.e. WEB, CES-D and DTS).

Results

Descriptive Analyses

Descriptive statistics for each ISA item are shown in Table 3. Inspection of the distributions of all items showed that 9 items were non-normally distributed: *Made me perform sex acts I did not like* (item4); *Become upset if dinner was not done* (item5); *Punched me* (item7); *Told me I was ugly* (item8); *threatened me with a weapon* (item13); *Demanded I stay home to take care of the children* (item16); *Beat me so badly that I had to seek medical help* (item17); *Partner felt that I should not work or go to school* (item18); *Slapped me around my face and head* (item23). These items all had skewness indexes above 3.0 and kurtosis indexes above 10.0 (Kline, 2016). The univariate SI ranged from .549 to 7.319, whereas KI ranged from -0.078 to 56.296. Given that the data were severely non-normal, maximum likelihood robust estimation was used in the factor analysis.

Reliability and Validity Based on the Original Two-Factor Structure

Internal consistency reliability of the 30-item ISA was acceptable (Cronbach's alpha coefficient = .95) with item correlations ranging from .213 to .838. Two items had low item-total correlations below .30 (item 16: *Demanded I stay home to take care of the children* and item 17: *Beat me so badly that I had to seek medical help*). Across all items, the inter-items correlations ranged from .157 to .734 (mean .372).

Table 3

Item-Level Descriptive Statistics, Item-Total Correlations and Internal Consistency of ISA (N=206)

ISA Items	<i>M</i>	<i>SD</i>	<i>Skew</i>	<i>Kurtosis</i>	<i>Item-total correlation</i>	<i>Alpha if item deleted</i>
ISA1: Belittled me.	2.00	1.210	.818	-.568	.803	.945
ISA2: Demanded obedience	1.84	1.221	1.38	-.078	.757	.946
ISA3: Became angry if drinking	1.42	1.008	2.336	4.311	.487	.949
ISA4: Made me perform sex acts I did not like	1.15	.505	3.692	13.879	.457	.949
ISA5: Become upset if dinner was not done	1.27	.779	3.374	11.424	.505	.948
ISA6: Was jealous of my friends	1.85	1.262	1.302	.464	.673	.947
ISA7: Punched me	1.05	.309	6.228	50.453	.362	.950
ISA8: Told me I was Ugly	1.25		3.064	8.606	.569	.948
ISA9: Told me I couldn't take care of myself without him	1.50	1.044	2.194	3.838	.635	.947
ISA10: Acted like I was his servant	1.52	.991	1.782	2.200	.637	.947
ISA11: Insulted me in front of others	1.65	1.071	1.540	1.312	.688	.947
ISA12: Become angry if disagree with him	2.06	1.322	1.048	-.125	.807	.945
ISA13: Threatened me with a weapon	1.05	.345	7.319	56.296	.308	.950
ISA14: Was stingy in giving me money	1.70	1.392	1.574	.911	.410	.950
ISA15: Belittled me intellectually	1.81	1.222	1.316	.574	.749	.946
ISA16: Demanded I stay home to take care of the children	1.20	.735	3.980	15.596	.270	.950
ISA17: Beat me so badly that I had to seek medical help	1.02	.154	6.228	37.149	.213	.950
ISA18: Felt that I should not work or go to school	1.24	.724	3.037	9.772	.459	.949
ISA19: Was not a kind person	2.17	1.388	.797	-.655	.750	.946
ISA20: Did not want me to	1.49	1.006	2.101	3.527	.602	.948

socialize with my female friends						
ISA21: Demanded sex whether I wanted it or not	1.25	.700	2.981	8.563	.440	.949
ISA22: Screamed and yelled at me	1.87	1.199	1.172	.214	.748	.946
ISA23: Slapped me around my face and head	1.05	.316	6.851	51.322	.356	.950
ISA24: Became abusive when he drank	1.34	.890	2.593	5.517	.526	.948
ISA25: Ordered me a round	1.67	1.089	1.385	.614	.838	.945
ISA26: Had no respect for my feelings	2.36	1.444	.549	-1.113	.799	.945
ISA27: Acted like a bully	2.03	1.303	.895	-.533	.810	.945
ISA28: Frightened me	1.92	1.272	1.076	-.165	.787	.946
ISA29: Treated me like a Dunce	1.77	1.118	1.222	.500	.805	.945
ISA30: Acted like he would like to kill me	1.30	.800	2.745	7.196	.553	.948

Cronbach's alpha coefficients for the subscales were .82 for physical abuse and .93 for non-physical abuse, indicating excellent internal consistency reliability. On the Physical Abuse Subscale, item-total correlations ranged from .261 to .740 and inter-item correlation ranged from .122 to .748 (mean .335). The lowest item-total correlation was .213 for item 17 (*Beat me so badly that I had to seek medical help*). On the Non-Physical Abuse Subscale, item-total correlations ranged from .286 to .825 with inter-item correlation ranging from .236 to .763 (mean .434). Only item 16 had a low item-total correlation (.286).

The ISA total score was moderately correlated with the CESD ($r = .365$) and DTS ($r = .351$), and strongly associated with the WEB ($r = .810$), providing support for the

concurrent validity of the ISA. In addition, ISA-P and ISA-NP were moderately correlated with the CESD were ($r=.335, .362$) and DTS ($r=.305, .356$), and strongly associated with the WEB ($r=.762, .788$), respectively.

Next, CFA was conducted using the maximum likelihood robust (MLR) estimation method to test whether the factor structure of the ISA fit the data. The goodness of fit indices indicated that the original two-factor solution model developed by Hudson and McIntosh (1981) did not fit the data. The fit indices were chi-square= 1131.003 ($DF=404, N=206, p \text{ value}= 0.000$), RMSEA=0.093 (90% CI= 0.087 to 0.100), CFI = 0.703, TLI = 0.580, and SRMR= 0.093. The modifications indices (MI) were inspected; after considering all theoretically reasonable MIs, no modifications were made.

Exploratory Factor Analysis (EFA) of the ISA

Given the poor fit of the original two-factor model with the item pool, and the lack of direction for additional analysis based on the proposed MIs, an unrestricted EFA was run with maximum likelihood robust estimation and an oblique rotation in order to identify the latent structure of the ISA item pool. Inspection of the initial output in SPSS revealed that 4 initial factors had eigenvalues >1 and accounted for 48.32, 8.24, 5.24, 4.885 percent of variance, respectively. We did not consider the four-factor solution because only two items loaded on the fourth factor and there were many cross-loadings between factors. Using various assessment approaches including the fit indices and theory-driven reasoning, a three-factor solution was accepted as the best solution and the only reasonable model after reviewing the item loadings (Table 4). In the 3-factor model, chi-square was 1175.333 ($df=348$) and significant ($p < .0001$). In comparison to

Table 4
Factor Loadings for the 3-Factor 28-Item ISA

ISA Item	Aggression/ Manipulation and Control	Verbal Attacks and Humiliation	Physical Abuse
ISA1: Belittled me.		.697	
ISA2: Demanded obedience		.598	
ISA3: Became angry if drinking	.429		
ISA4: Made me perform sex acts I did not like	.634		
ISA5: Become upset if dinner was not done	.395		
ISA6: Was jealous of my friends	.657		
ISA7: Punched me			.936
ISA8: Told me I was Ugly		.327	
ISA9: Told me I couldn't take care of myself without him	.587		
ISA10: Acted like I was hi servant	.606		
ISA11: Insulted me in front of others		.581	
ISA12: Become angry if disagree with him		.577	
ISA13: Threatened me with a weapon			.592
ISA14: Was stingy in giving me money		.480	
ISA15: Belittled me intellectually		.671	
ISA18: Partner felt that I should not work or go to school	.467		
ISA19: Was not a kind person		.907	
ISA20: Did not want me to socialize with my female friends	.712		
ISA21: Demanded sex whether I wanted it or not	.591		
ISA22: Screamed and yelled at me		.460	
ISA23: Slapped me around my face and head			.941
ISA24: Became abusive when he drank	.560		
ISA25: Ordered me a round	.526		
ISA26: Had no respect for my feelings		.858	
ISA27: Acted like a bully		.858	
ISA28: Frightened me		.845	
ISA29: Treated me like a Dunce		.768	
ISA30: Acted like he would like to kill me		.656	

the 2-factor model, the fit indices suggested improvement but were not ideal: RMSEA= 0.107 (90% CI=0.101 to 0.114), TLI = 0.820, CFI = 0.775, and SRMR= 0.051. Based on the item contents and the communalities, the three factors were named Aggression/ Manipulation and Control (11 items), Verbal Attacks and Humiliation (14 items), and Physical Abuse (3 items).

Two items (16, 17) were considered for deletion. Item 16 (*demanding that I stay home and take care of the children*) loaded below .3, and had the lowest total-item correlation ($r = .270$). After running the EFA again excluding items 16 and 17, all fit indices improved: chi-square= 624.678 ($df= 297$), RMSEA= 0.073 (90% CI= 0.065 to 0.81), CFI= .862, TLI= .824, and SRMR= 0.50. Items loaded cleanly on a single factor at a level of .3 or greater (Table 4).

The three factors were moderately correlated with each other, suggesting that each factor reflects a unique dimension of IPV. The strongest association was between the Aggression, Manipulation and Control factor and Verbal Attacks and Humiliation factor ($r = .586$)(Table 5).

Table 5

Correlation Matrix of the 3 Factors on the ISA

Factors	1	2	3
1. Aggression, Manipulation and Control	1		
2. Verbal Attacks and Humiliation	.586	1	
3. Physical Abuse	.348	.208	1

Therefore, total and subscale scores on the ISA were computed for the ISA based on the structure identified in the factor analysis but using the weighting scoring

approach proposed by Hudson and McIntosh (1981) whereby applicable item responses for each subscale were weighted and summed to create scores with a distribution that ranged from 0 to 100. Specifically, scores for each subscale were computed as follows: Aggression, Manipulation and Control (AMC) score = (sum of P/290-1)(25); Verbal Attacks and Humiliation (VAH) score = (sum of P/430-1)(25); Physical Abuse (PA) score = (sum of P/237-1)(25). The mean total ISA score was 11.16 ($SD = 14.115$), with a range of 0 to 65.15. The descriptive statistics for the new three subscales were as the following: the mean for the Aggression, Manipulation and Control subscale was 9.066 ($SD=14.92$), Verbal Attacks and Humiliation was 19.44 ($SD=22.52$), and Physical Abuse was 1.33 ($SD=7.07$).

The concurrent validity of the 28-item ISA was re-assessed. The total ISA score was moderately correlated with both the CES-D and DTS ($r = .396, .400$, respectively), and strongly associated with the WEB ($r = .810$). The internal consistency ($\alpha = .951$) was excellent for the new 28-item scale and for the subscales (.88 for AMC, .947 for VAH, .852 for PA). The mean inter-item correlation was .403 for the full scale and .414 for AMC, .565 for VAH, and .667 for PA. The item-total correlations for the entire scale ranged from .303 to .839. For subscales, item-total correlations ranged from .456 to .755 for AMC, .435 to .846 for VAH, and .582 to .812 for PA.

Finally, the placement of items on each subscale was compared with Hudson and McIntosh's original work (Table 6). Seven of the 11 original physical abuse items were re-distributed to the aggression, manipulation and control (Items 3, 4, 24) or verbal attacks and humiliation (5 items) subscales (items 22, 27, 28, 30). The 18 remaining non-

physical abuse items from the original scale were almost equally distributed between the aggression/ manipulation and control and verbal attacks and humiliation subscales (8 and 10 items, respectively).

Table 6

Similarities and Differences in Assignment of ISA Items to Subscales in original 2 Factor Scale versus 3 Factor Scale

ISA Items	Scale (1981)	Scale (2018)
ISA1: Belittled me (1)	NP	VH
ISA2: Demanded obedience (17)	NP	VH
ISA3: Became angry if drinking (15)	P	AMC
ISA4: Made me perform sex acts I did not like (50)	P	AMC
ISA5: Become upset if dinner was not done (4)	NP	AMC
ISA6: Was jealous of my friends (8)	NP	AMC
ISA7: Punched me (75)	P	P
ISA8: Told me I was Ugly (26)	NP	VH
ISA9: Told me I couldn't take care of myself without him (8)	NP	AMC
ISA10: Acted like I was hi servant (20)	NP	AMC
ISA11: Insulted me in front of others (41)	NP	VH
ISA12: Become angry if disagree with him (15)	NP	VH
ISA13: Threatened me with a weapon (82)	P	P
ISA14: Was stingy in giving me money (12)	NP	VH
ISA15: Belittled me intellectually (20)	NP	VH
ISA18: Partner felt that I should not work or go to school (21)	NP	AMC
ISA19: Was not a kind person (13)	NP	VH
ISA20: Did not want me to socialize with my female friends (18)	NP	AMC
ISA21: Demanded sex whether I wanted it or not (52)	NP	AMC
ISA22: Screamed and yelled at me (38)	P	VH
ISA23: Slapped me around my face and head (80)	P	P
ISA24: Became abusive when he drank (65)	P	AMC
ISA25: Ordered me a round (29)	NP	AMC
ISA26: Had no respect for my feelings (39)	NP	VH
ISA27: Acted like a bully (44)	P	VH
ISA28: Frightened me (55)	P	VH
ISA29: Treated me like a Dunce (29)	NP	VH
ISA30: Acted like he would like to kill me (80)	P	VH

Note: AMC=Aggression, manipulation, and control; p= physical; NP= non-physical; VH= Verbal attacks and humiliation.

Discussion

This study assessed the reliability, and construct and concurrent validity of the ISA. As this is the first study to investigate the psychometric properties of the ISA in a community Canadian woman who left an abusive relationship, the results have potential to enhance research related to IPV severity in Canada. While confirmatory factor analysis failed to replicate the original two-factor structure proposed by Hudson and McIntosh (1981) in the current sample, exploratory factor analysis revealed an alternative three-factor structure based on 28 of 30 items that fit the data from this sample of Canadian women with subscales for aggression/manipulation and control; verbal attacks and humiliation, and physical abuse. Findings of this study demonstrate that the 28-item ISA is both a reliable and valid measure of the severity of IPV and, thus, can be used in future research. These results are consistent with the results of previous studies in which the original two-factor structure of the ISA has not been replicated, but also extend this work by identifying a new structure with 3 unique factors not identified in previous validation studies of the ISA.

The finding that aggression, manipulation and control actions are a distinct factor adds to the ongoing debate about gender symmetry in IPV (Johnson, 2008), as coercive control is viewed as highly gendered (Stark, 2007). Researchers who conceptualize IPV as a gender-neutral concept tend to use the *Conflict Tactic Scale (CTS)*; Bermea, Khaw, Hardesty, Rosenbloom, & Salerno, 2017; Bott, Guedes, Goodwin, 2012; Fanslow & Robinson, 2010; Wittenberg, Joshi, Thomas, & McCloskey, 2007), a scale that has been widely critiqued for decontextualizing women experiences of IPV by not taking

coercive control into consideration. Therefore, the availability of a measure that taps AMC is very important because it resonates with current studies about IPV and offers assessment of a specific and important dimension of IPV (i.e. control) (Diemer, Ross, Humphreys, & Healey, 2016; Rose, 2015).

The finding that verbal attacks and humiliation was a separate factor from non-physical abuse could be a reflection of the sample used in the current study. Almost all women were no longer living with their abusive partner, but about one-third were still in contact with their ex-partners. In the post-separation context, verbal attacks/abuse may have played a major role in their relationships. For example, a recent study suggested that men's use of verbal attacks/abuse might be particularly common after separation (Crossman et al., 2016). In addition, humiliation can take many forms and include actions to bring sexual and financial shame. Verbal attacks and humiliation are often invisible in the measurement of IPV because items are often embedded in broader measures of physical or sexual abuse. In addition, current studies still inconsistently report the effects of verbal abuse on aspects of women's lives (including, for example, social isolation). Therefore, the ability to assess specific aspects of 'non-physical' violence has the potential to advance knowledge about the differential impacts of distinct types of IPV, allowing for more in-depth study of women's unique IPV experiences.

Although that this study did not seek to reduce the number of items in the ISA scale, future research should attempt to do so by eliminating unclear items in order to strengthen the scale. The two items (16: *demanding that I stay home and take care of*

the children; and 17: "Beat me so badly that I had to seek medical help") that did not fit the model and were deleted have limitations that may explain why they did not load significantly on any factor. Less than one-half of women in the sample were parenting children under the age of 18 at the time of data collection. It is possible that women who were not engaged in parenting dependent children may have answered question 16 about caring for children differently, especially when contextualizing women in a specific gender role as mothers.

In addition, item 17 ("*Beat me so badly that I had to seek medical help*") loaded both on the physical factor and on the aggression/manipulation and control factor. It is a poorly worded question that includes 2 ideas (*beaten so badly by partner* and *had to seek medical help*). Women may have interpreted this item differently because it was ambiguous, particularly given that most women in the current study left the abusive relationship.

The finding that only 3 items remained on the physical abuse subscale raises concerns about the adequacy of the item pool for this important type of IPV. However, shifts in items originally assigned to the physical abuse scale to other factors improved the factor structure and made it more consistent with current conceptualizations of IPV. For example, recent scholarship suggests that sexual violence is less about physical force and more about exerting power, domination and control (Hearn, 2013; Plummer & Findley, 2012). It may be that there are too few items on the ISA reflecting physical abuse; consideration should be given to adding new physical abuse items in order to refine the scale. Although the current structure includes a small physical abuse subscale,

unlike many measures of IPV, the ISA emphasizes aspects of psychological abuse. This result may explain the high correlation between the ISA and WEB found in this study.

Comparing the original scale and our findings, both sexual abuse items (ISA4 and ISA21) were assigned to the aggression/ manipulation and control subscale. Many researchers have focused on sexual abuse as a tactic of control, rather than solely as a sexual abuse act (Abbey & Jacques-tiura, 2011; Lyndon, White, & Kadlec, 2007). This may explain why these two items loaded onto the aggression/manipulation and control factor. In addition, the majority of women in the current study no longer lived with the index partner. In this context, sexual violence might be more likely to be experienced as a threat of harm or attempt to control the woman because of limited physical proximity to engage in acts of sexual violence.

A number of items formerly assigned to the physical abuse scale shifted to either the AMC or the VAH subscales. This could be a result of mis-classification of items in the original work. There are many critiques about the placement of some items on the ISA-P and ISA-NP subscales, including items about sexual abuse and drinking alcohol. In the current study, items such as ISA24 (*“became abusive when he drank”*) and ISA3 (*“became angry if drinking”*) loaded on the AMC rather than PA factors, consistent with other validation studies, including Hudson and McIntosh’s (1981) original work.

Similarly, Item 22, *“my partner yelled at me”*, loaded under a new factor, *“verbal attacks and humiliation”*, instead of the physical abuse factor. This change makes sense because women may experience yelling as a verbal act more than an act of physical abuse. Item 27 (*“my partner acted as a bully”*) could be understood either as verbal or

physical abuse, depending on the woman's experiences. In the current study, women were no longer living with their index partner but some still had contact. This contact may have increased the likelihood of their exposure to verbal bullying, more than physical abuse.

Items 28 and 30 "*frightened me*" and "*acted like he would like to kill me*" could be proxies for threats more than acts of abuse, which reflect verbal attacks and humiliation. Intimate partners tend to use verbal acts in order to frighten and threaten women as an attempt to break them (Stark, 2010). Research has started to describe the impacts of verbal abuse on health specifically. For example, in some studies (Debono, Borg Xuereb, Scerri, & Camilleri, 2017; Mason et al., 2014), verbal abuse was used as a threat to frighten women and control them, resulting in various mental health problems such as posttraumatic stress disorders.

The findings presented here demonstrate that the ISA is a reliable and valid self-report tool that measures the severity of IPV experiences along 3 dimensions: aggression, manipulation and control; verbal attacks and humiliation; and physical abuse. As such, it has a strong potential to advance scholarship related to IPV severity. Recent studies support the idea that all dimensions of IPV should be studied (Ansara & Hindin, 2010). Advances in the measurement of IPV as a multi-dimensional concept have potential to: a) decrease under-reporting of IPV; b) improve the ability to evaluate the impacts of interventions to help women to cope with IPV and decrease the consequences and severity of the IPV experiences; c) support research aims at

understanding long-term patterns of IPV after leaving and differential effects on women's health and lives.

Although this research suggested that the ISA is a reliable and valid measure of IPV among Canadian women, additional studies are needed to test the validity of the 28-item ISA's 3-factor structure. Many factors such as sample size and the type of the sample might affect the results of the factor analysis completed in this study. Therefore, this study should be replicated with samples and with women living in varied contexts, such as women from diverse socio-economic and ethno-cultural backgrounds. In addition, future studies that test the ISA against other available IPV scales would be helpful in identifying the unique contributions of the ISA. However, despite these limitations, and the need for further validity testing for the ISA, the results of this analysis provides preliminary evidence regarding the strengths of the measure.

Strengths and Limitations

Despite notable conceptual and measurement challenges inherent in the study of IPV, including debate about which dimensions that should be measured, the results of this study offer a potential approach for addressing these challenges by operationalizing IPV as a multidimensional concept that incorporates various types of abuse. The results of this study provide the first published evidence of the strength of the ISA among Canadian women with histories of IPV. The use of a rigorous analytic approach with a community sample of women is a strength of this study that improves the credibility and generalizability of the results.

However, several limitations should be noted. The data set that we used was originally collected to examine changes in women's mental and physical health in early years after leaving abusive relationship and not to measure the validity of the ISA. As a result, important scales were not included and available for this analysis. For example, in future studies, it would be ideal to use the Composite Abuse Scale or Composite Abuse Scale (Revised) – Short Form (CASr-SF) to examine concurrent validity of the ISA because the CAS is a more recently developed and well-validated scale that conceptualizes IPV as a multi-dimensional concept. Future research would benefit from using this measure to capture a more reliable indicator of IPV among women who have experienced violence. Moreover, future studies should also examine the structure of the ISA scale among women who have experienced violence using samples of women from various cultural backgrounds.

Conclusion

This analysis provides preliminary evidence that the 28-item ISA is a reliable and valid self-report measure of IPV severity among Canadian women with histories of IPV. The results did not confirm the original 2 factors structure of this scale, but supported a new, three-factor structure that includes distinct dimensions consistent with current conceptualization of IPV: aggression/ manipulation and control; verbal attacks and humiliation, and physical abuse. The scale is appropriate for use in future research despite the need for additional testing with larger samples in diverse contexts to validate the factor structure.

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CHAPTER 5

FACTORS MEDIATING THE IMPACTS OF INTIMATE PARTNER VIOLENCE ON WOMEN'S QUALITY OF LIFE AFTER LEAVING AN ABUSIVE RELATIONSHIP

Intimate partner violence (IPV) refers to “any behavior by a current or former intimate partner that causes physical, sexual or psychological harm, including acts of physical aggression, sexual coercion, psychological abuse and controlling behaviors” (World Health Organization, 2016). IPV has important, negative effects on many aspects of women’s lives (Beeble, Bybee, Sullivan, & Adams, 2009; Cordero, 2014), including their economic positions (Adams, Sullivan, Bybee, & Greeson, 2008; Gupta et al., 2018; Larsen, 2016; Littwin, 2012) and their health (Beydoun, Williams, Beydoun, Eid, & Zonderman, 2017; Campbell, 2002; Ford-Gilboe et al., 2009; Gibbs, Corboz, & Jewkes, 2018). Specifically, women may suffer devastating trauma, as well as many physical and mental/psychological health consequences associated with IPV (Anderson, Renner, & Danis, 2012; Coker et al., 2002; Gilroy et al., 2014; Golding, 1999) and these health impacts can be longstanding (Watkins et al., 2014).

Although studies point to relationships between the severity of IPV, economic problems and poor health among women, less attention has been paid to understanding what contributes more broadly to women’s Quality of Life (QOL). The World Health Organization QOL group (1998) defines quality of life as “individuals’ perceptions of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and social relations.” (p. 25). Findings from qualitative studies (Bermudez et al., 2013; Duffy, 2015; Rizo, 2016; Weeks, Macquarrie, Begley, Gill, & Leblanc, 2016) suggest that IPV is a distinct stressor

that has strong negative effects on many aspects of women's lives. There is some evidence from cross-sectional quantitative studies that IPV is negatively associated with women's QOL (Alsaker, Moen, Kristoffersen, Social, & May, 2015; Asadi, Mirghafourvand, Yavarikia, Mohammad-alizadeh-charandabi, & Nikan, 2017; Leung, Leung, Ng, & Ho, 2005; Ross, Saenyakul, & Kleman, 2015; Tavoli, Tavoli, Amirpour, Hosseini, & Montazeri, 2016); however, most studies focused on only one or two domains of women's QOL, such as physical health or life satisfaction, overlooking other potentially important aspects of QOL. Furthermore, although most women eventually end the abusive relationship (Scheffer Lindgren & Renck, 2008; Zeoli, Rivera, Sullivan, & Kubiak, 2013), this transition is often stressful (Duffy, 2015; Wuest, Ford-gilboe, Merritt-gray, & Berman, 2003) and factors that shape women's quality of life post-separation are poorly understood. After separation, women often experience substantial life challenges that have implications for their QOL, including financial problems, health problems, security and safety issues related to ongoing violence, social isolation and challenges getting much needed help (Alhalal, Ford-Gilboe, Kerr, & Davies, 2012; Wuest, Ford-Gilboe, Merritt-gray, & Berman, 2003).

Some research (Anderson et al., 2012; Bell, Goodman, & Dutton, 2007; Edwards, Dardis, Sylaska, & Gidycz, 2015; Ford-Gilboe et al., 2009; Goodman & Smyth, 2011; Parker & Lee, 2007; Thomas, Goodman, & Putnins, 2015; Wuest & Merritt-Gray, 2001) has focused on the strategies, strengths and resources women use to adapt to the new life context after separation from an abusive partner. While women's access to resources has been found to mediate the relationship between severity of IPV and

health outcomes (Alhalal, Ford-Gilboe, Kerr, & Davies, 2012; Ford-Gilboe et al., 2009), whether these factors also mediate the relationship between severity of IPV and women's quality of life post-separation is not known. Therefore, the purpose of this study was to test a theoretical model that explains the process by which IPV severity affects women's QOL after separation from an abusive partner and the mediating effects of two critical resources - social support and mastery.

Theoretical Model

The theoretical framework informing this study is based on the Stress Process Model (SPM; Pearlin et al., 1981) and research about IPV. The SPM has been widely used by social and health scientists to "incorporate and emphasize features of social and economic life into accounts of the health and well-being of people" (Pearlin, 1999, p. 396). This model explains how chronic stress affects the physical and mental health of individuals by focusing on factors that may mediate this process (Pearlin, 1975).

There are three main concepts in the SPM: stressors, resources (or stress mediators), and health outcomes. *Stressors* arise from an individual's life and social surroundings, and include both discrete life events and chronic strains - recurrent problems that arise repeatedly over time or tend to persist, such as experiences of discrimination (Pearlin, 1989). Stress can be detrimental to the well-being of individuals through its effects on physiological, biochemical and psychological functioning. *Resources* or stress mediators are factors that influence the effects of stressors on health outcomes. Access to personal, social or coping resources may vary with individuals' economic and social status (Pearlin & Bierman, 2013) and this may explain

some of the variability in health among individuals who have been exposed to the same stressor. Pearlin (1989) defined the *stress outcome* as the effect of the stressor on an individual's well-being, and often focused on mental health outcomes, although other outcomes have also been used, including life satisfaction and general well-being (Judge, Menne, & Whitlatch, 2010; Kniepmann, 2014; Menne, Judge, & Whitlatch, 2009; Moon & Dilworth-Anderson, 2015).

In the context of IPV, the SPM is useful in positioning IPV as a chronic stressor (Dallam, 2010), rather than a single event, and in directing attention to women's strengths and resources that may mediate the relationship between recent and ongoing IPV and women's QOL. Using the SPM to study women's QOL after leaving an abusive partner is appropriate because this theoretical model has been extensively used to examine and account for varied patterns shared by people who are experiencing the same situation or social contexts (Pearlin, 1989). In addition, Pearlin's model includes many different types of factors, including contextual variables, so that the relationships can be tested in the context of other situations that women may experience.

Based on the SPM and a review of literature, a causal model of the relationships among IPV severity, mastery, social support and QOL, was tested in this study (see Figure 1). In this model, the severity of recent and ongoing IPV (chronic stressor) is proposed to negatively affect women's QOL directly, and, indirectly, by negatively impacting women's access to social support and mastery. Specifically, we hypothesized that more severe IPV decreases both social support and mastery, leading to lower levels of QOL. Thus, social support and mastery are mediators between severity of IPV and

QOL. Given that the direction of the relationship between mastery and social support is unclear, this relationship is shown as a positive correlation.

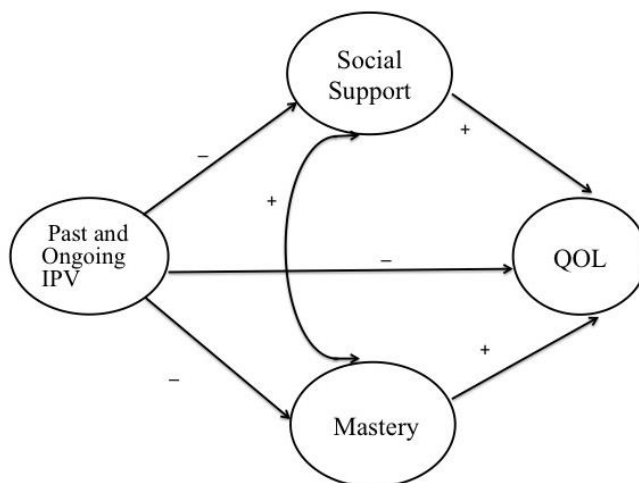


Figure 1: Hypothesized structural equation model derived from the Stress Process Model (SPM)

Review of the Literature

Origins of QOL Concept

Since the 1970s, interest in Quality of Life (QOL) has increased in clinical practice and research. The World Health Organization QOL Working Group (1998) proposed one of the most commonly accepted and used definitions that include all aspects of QOL such as physical, psychological, social, and environmental health. In the WHO definition, QOL is a subjective concept that is shaped by external and internal experiences with some emphasis on past experiences, personality, and mental state (Berlim & Fleck, 2003), and that integrates attention to cultural variations, rather than considering

culture as an extraneous variable (Skevington, 2002). Despite the increasing interest in QOL, there is still lack of consensus about its definition and measurement (Anderson & Burckhardt, 1999; Wolfensberger, 1994) and a call to unify the definition of this concept by various researchers in social science, psychology, and public health (Benítez, 2016).

QOL among Women who have separated from an Abusive Partner

IPV can be seen as a chronic strain because women separating from abusive partners are at high risk of suffering from stress, health problems, economic strain, and social barriers to help-seeking (Alhalal, Ford-Gilboe, Kerr, & Davies, 2012; Ford-Gilboe et al., 2009; Thomas, Wittenberg, & McCloskey, 2008; Walker et al., 2004). For many women, these strains and challenges are ongoing after separation and make the experience and effects of IPV chronic. Therefore, previous and ongoing IPV experience has been viewed as the leading cause of both short- and long-term negative health outcomes for women (Alsaker et al., 2015, 2006). Additionally, women who have experienced IPV found to have poorer overall QOL and HRQOL (Alsaker, Moen, & Kristoffersen, 2007; Alsaker, Moen, Nortvedt, & Baste, 2006; Bybee & Sullivan, 2002; Bybee & Sullivan, 2005; Costa et al., 2014; Sullivan & Bybee, 1999). Furthermore, qualitative studies on QOL among women who have experienced violence (Bermudez et al., 2013; Duffy, 2015; Rizo, 2016; Weeks, Macquarrie, Begley, Gill, & Leblanc, 2016) suggest that IPV is a distinct stressor that has strong negative effects on women's lives. Collectively, findings of these studies suggest that women's vulnerability continues during and after separation as they begin to care for themselves and for their families in new contexts.

In sum, QOL is a subjective complex concept that reflects an individual's perception of his or her own life, general well-being and satisfaction. Research is needed that looks beyond the physical health domain of QOL, and that examines the relationship between previous IPV experience and a broad conceptualization of QOL that includes other domains such as satisfaction in life and safety among women who have left an abusive relationship.

Mediators of the Relationship between IPV and QOL

Women have both personal and social resources that can help them to overcome the stress generated from previous IPV (Beydoun et al., 2017; Ford-Gilboe et al., 2009; Guruge et al., 2012) experiences. The specific resources women use to deal with IPV have been examined in some research, particularly in qualitative studies that have illuminated women's strengths in dealing with IPV (Bermudez et al., 2013; Sabri et al., 2016; Walters, 2011). There is some evidence that women's access to personal, social and economic resources mediates the relationship between IPV severity and physical and mental health (Samuels-Dennis, Ford-Gilboe, Wilk, Avison, & Ray, 2010; Samuels-Dennis, Bailey, Killian, & Ray, 2013), with two studies (Ford-Gilboe et al., 2009; Guruge et al., 2012) finding support for this relationship post-separation. In general, studies testing whether resources mediate the relationship between IPV and QOL are very limited.

Social Support

Social support, a resource that individuals use to face life stressors/problems (Pearlin, 1989), is defined as "the perceived availability of helping behaviors from

members of the social network” (Tilden, Nelson, & May, 1990, p. 338). There is consistent support in the literature for a positive relationship between social support and health across a wide range of populations (Holt-Lunstad, Smith, & Layton, 2010; Reblin & Uchino, 2008; Shishehgar et al., 2013; Uchino, 2006, 2009). In addition, Lepore, Evans, and Schneider (1991) proposed that social support mediates the stress-distress relationship. For example, many studies have shown that social support is negatively related to PTSD symptoms among maltreated or victimized youths (Bradley, Schwartz & Kaslow, 2005; Hershberger & D’Augelli, 1995; Ozer, Best, Lipsey & Weiss, 2003; Wu, Chen, Weng & Wu, 2009).

In the context of IPV, social support has been found to diminish levels of adverse psychological outcomes among women (Coker et al., 2002; Lee, Pomeroy, & Bohman, 2007) and to improve women’s well-being (Bosch & Schumm, 2004; Thompson, Kaslow, Short, & Wyckoff, 2002). For example, social support from individuals outside the intimate relationship has been identified as an important protective factor against IPV and re-victimization (Baumgartner et al., 2015; Klein & Milardo, 2000). There is also evidence that increased social support helps women obtain resources and services that decrease the negative consequences of IPV (Bybee & Sullivan, 2002; Goodkind, Gillum, Bybee, & Sullivan, 2003; Goodkind et al., 2004) and safely leave the abusive relationship (Hage, 2006).

Social support may mediate the relationship between severity of IPV and women’s QOL, yet this relationship has been insufficiently studied. In one of the few longitudinal studies, Beeble, Bybee, Sullivan, and Adams (2009) examined the role of

social support in buffering the psychological consequences of IPV among 160 women living the United States who had accessed a shelter. Social support was positively related to women's QOL and negatively related to depression. In addition, social support partially explained the effect of baseline level and subsequent change in physical abuse on QOL and depression overtime; partially mediated the effects of change in psychological abuse; and moderated the impact of abuse on QOL. In a report from the same study, Beeble and colleagues (2009) found that higher social support was associated with less severe abuse and higher QOL at multiple points of time. Although this study provides evidence that social support both mediates and moderates the effects of abuse on QOL over time, whether these findings extend to samples of women who do not access a shelter and live outside the U.S. is unknown.

Mastery

Mastery has been defined as “the extent to which people see themselves as being in control of the forces that importantly affect their lives” (Pearlin et al., 1981, p. 340). As a construct, mastery belongs to a wide range of control beliefs that may include self-efficacy, locus of control and perceived control (Haidt & Rodin, 1999). These constructs are mostly theorized as coping mechanisms or personal resources that individuals can depend on in response to chronic stressors (Taylor & Stanton, 2007). Mastery is different than these constructs in that it is a general, rather than specific, expectation about individuals' ability to cope (Haidt & Rodin, 1999).

Mastery has been described as perceptions of control over difficult or stressful situations or events (Lachman & Weaver, 1998; Younger, 1993) or competence (Sowell,

Seals, Moneyham, Guillory, & Mizuno, 1999). Individuals with high levels of mastery feel a sense of control over their future and life situations; they have confidence that they can solve their life problems and control their own life outcomes (Gadalla, 2009; Lehavot, Walters, & Simoni, 2009; Pudrovskaya, Schieman, Pearlin, & Nguyen, 2005). However, individuals with low levels of mastery feel helpless to solve their life problems, believe that they cannot control life outcomes and that other or external factors control their fate. Mastery is, therefore, a potent resource that may protect individuals' physical and mental health against deleterious adversities such as economic hardship (Kessler & Essex, 1982; Lachman & Weaver, 1998; Pearlin & Radabaugh, 1976) or perhaps abuse/violence.

There is evidence that mastery mediates the relationship between life stressors and health consequences, and is a coping mechanism that moderates the detrimental effects of life stressors on peoples' mental and physical health (Jang et al., 2006; Pitkala, Laakkonen, Strandberg, & Tilvis, 2004; Pudrovskaya, Schieman, Pearlin, & Nguyen, 2005). Mastery has been positively associated with better physical and mental health (Roepke & Grant, 2011) and negatively associated with detrimental effects of life stressors such as economic strain/hardship (Lachman & Weaver, 1998) and caregiving burden (Mausbach et al, 2006). Previous traumatic experiences, including IPV, can lead to feelings of lack of control and competence – aspects of mastery (Sowell et al., 1999). Thus, in the context of IPV, severity of IPV has been associated with lower levels of mastery among women (Lewis, Milletich, Kelley, & Woody, 2012; Renner, Cavanaugh, & Easton, 2014; Umberson, Anderson, Glick, & Shapiro, 1998).

Mastery and Social Support

Mastery and social support have been proposed as important resources for dealing with chronic strain (Pearlin, Lieberman, Menaghan, & Mullan, 1981). Green and Rodgers (2001) suggested that there is a reciprocal, positive relationship between mastery and social support. Higher levels of mastery may improve people's ability to seek and obtain social support (Holahan & Holahan, 1987) while perceptions of stronger support may lead to greater feeling of control over the environment. Having a good social support system may lead to increase women's mastery levels; those who reported higher levels of social support also felt that they had more control over their lives (Belle, 1982; Gadalla, 2009; Martire, Stephens, & Townsend, 1998).

In the context of IPV, positive social reactions to disclosures of IPV have been proposed to affect women's process of leaving an abusive relationship (Liang, Goodman, Tummala-Narra, & Weintraub, 2005). Social support may heighten IPV victims' mastery and self-esteem, which may lead to ending the abusive relationship (Nurius, Furrey, & Berliner, 1992). For example, findings from one qualitative study showed that women with histories of IPV reported that positive social reactions helped them leave the abusive relationship while non-supportive people hindered them from leaving (Fanslow & Robinson, 2010). This suggests that social support may lead to increased mastery. Whether mastery leads to increase social support is a gap in the literature.

In summary, there is evidence that social support and mastery have direct and indirect (mediating and moderating) effects on the relationship between IPV and women's health after separation. However, few studies have examined women' QOL

after leaving. In addition, since studies included only women who had recently left the abusive relationship (i.e. within two years), the effects of IPV on QOL beyond this period of time are not known.

Method

Design

A quantitative secondary analysis was conducted to test the hypothesized model (see Figure 1) among women who have separated from an abusive partner. A predictive design was used to determine the impact of recent and ongoing abuse experiences on women's QOL after leaving. Data from a longitudinal study of changes in women's health, IPV exposure, and resources after leaving an abusive relationship/partner over a four-year period of time (Ford-Gilboe et al, 2009) were used in this analysis.

The sample for the original study included 309 adult English-speaking women who had left an abusive partner at some point within three years prior to enrolment. The community sample was recruited from three Canadian provinces (Ontario, British Columbia, and New Brunswick). A modified version of the *Abuse Assessment Screen* (AAS; Parker & McFarlane, 1991) was used to screen women for exposure to IPV (i.e. physical abuse, fear of partner, forced sex, controlling behaviors) as part of the eligibility process. Eligible women received a verbal description of the study from a research assistant and were invited to take part in 5 interviews (baseline and 12, 24, 36, and 48 months later; Ford-Gilboe et al., 2009). Data were collected from women during structured interviews comprised of reliable and valid self-report measures and survey questions. Interviews were completed in a private location selected by the women or,

after the baseline interview, over the phone if there were limitations in accessing the participants because they had moved long distances.

The study was approved by Research Ethics Boards at the University of Western Ontario, University of New Brunswick, Simon Fraser University, University of British Columbia, and University of Victoria based on the Tri-council Ethics guidelines (Ford-Gilboe, et al., 2009). Written informed consent (Appendix A and B) was obtained at enrolment and re-confirmed at each data collection session. Participation was voluntary; women were informed that they could refuse to answer any questions or withdraw from the study at any time. A safety protocol was used to guide all interactions between women and research team (Ford-Gilboe et al., 2009).

Sample

Data from wave 5 (48 months after baseline) were used in this analysis since quality of life was only measured at this time point. A total of 250 of the original sample of 309 women completed Wave 5. This sample size was large enough to test the structural equation model proposed in this study since the minimum sample size recommended is 200 (Kline, 2016). In addition, as discussed in Kline, (2016), in “analyses in which outcome variables are continuous and normally distributed, all effects are linear and there are no interactions require smaller sample sizes” (p. 15).

The mean age of participants was 44 years ($SD= 9.75$, range 23 to 68). Women’s educational background varied from 7 to 30 years of formal education, with a mean of 14 years education ($SD = 3.270$). Most (58.3%) were employed. The mean of women’s annual income ranged from 0 to \$80,000/year with a mean of \$28,891.90 and median of

\$20,803 ($SD = 24,033.79$). About half (52%) of women in the sample were parenting children under the age of 18. However, more women were mothers but their children were older than 18 years old.

Only three of 250 women were living with the abusive partner they had left when they first enrolled in the study four years earlier, although 45.2% of women had contact with this partner. Overall, 62% of women were in a partner relationship at some point in the year prior to collecting the wave 5 data. At the time of interview, 34.8% of women ($n=87$) reported that they were experiencing IPV, either from their former partner (25.6%, $n=64$) or a new partner (9.2%, $n=23$).

Table 1

Demographic Profile of the Sample (N=250)

Characteristic	% Sample (n)
Employment Status	
Employed Full-Time	38.9 (96)
Employed Part-Time	19.4 (48)
Not employed	41.7 (103)
Missing	1.2 (3)
Parenting a Child(ren) <18 years of age	52.0 (130)
Relationship with Abusive Partner she left at Study Entry:	
Had Contact with this Partner	45.2 (113)
Not living with this Partner	98.8 (246)
Living with this Partner	1.2 (3)
Relationships Status	
In any partner relationship in previous 12 months	62.4(156)
Reports Current Abuse	34.5 (87)
From previous partner	25.6 (64)
From other partner	9.2 (23)

Measurement

Data were collected using five self-report measures, each of which has supporting evidence of reliability and validity. One latent variable (recent and ongoing IPV) and three manifest variables (QOL, mastery, and social support) were included in the analysis.

Recent and Ongoing IPV Experiences. Recent and ongoing IPV was a latent variable measured using 4 indicators: 3 subscale scores from the *Index of Spouse Abuse (ISA)*; Hudson & McIntosh, 1981) and the total score from the *Women's Experiences of Battering (WEB)* Scale (Smith, Earp, & DeVellis, 1995). These indicators tap into different but complementary dimensions of IPV.

In this study, 3 subscale scores comprising the structure of a 28-item version of the Index of Spouse Abuse (ISA) were used to measure the severity and of IPV in the previous 12 months. Subscales were identified using factors analysis techniques in the study sample as part of a focused examination of the reliability and validity of the ISA among Canadian women (for details see Chapter 4).

The original *ISA* scale contains 30 items and was designed to measure the severity or magnitude of physical (11 items) and non-physical (19 items) abuse inflicted upon women by a male partner. Women are asked to rate how often they have experience a series of abusive acts in the previous 12 months on a 5-point scale ranging from 1 (never) to 5 (very frequently). The total ISA score can be computed as follows: 1) if any item is missing a response, a 0 should be imputed; 2) compute a product score for each item by multiplying the item score by the item weight; 3) compute the minimum

possible sum-score that respondents could obtain by adding up all of the items weights; and, 4) compute the final ISA scores as $\text{Sum} = (\text{sum of item weight} - \text{sum of all items})(100)/[\text{sum of all items}(4)]$. If there are no missing responses, use the following formula: $\text{ISA-PH} = (\text{sum of item}/682-1)(25)$ and $\text{ISA-NPH} = (\text{sum of item}/387-1)(25)$.

Initial psychometric testing of the ISA was conducted Hudson and McIntosh (1981) in three studies with three different samples. To evaluate the factorial (construct) validity of the ISA, a principal components factor analysis procedure with varimax rotation was used and confirmed the two dimensions of ISA, and also provided evidence of concurrent validity. Internal consistency of the ISA was .90 and .91, respectively, in this sample. Each item in the scale represents some form of abusive interaction or behaviour; therefore the scale has excellent content validity (Hudson & McIntosh, 1981).

The ISA has been critiqued for focussing on two aspects of partner abuse (physical and non-physical) when current conceptualizations of IPV are more complex. For example, sexual IPV and coercive control found to have impact on women's mental health as well (Coker et al., 2000; McFarlane et al., 2005). Furthermore, although the ISA has demonstrated good reliability in varied contexts, these studies have been unable to validate the original factor structure. Therefore, prior to using the ISA in this analysis, we examined its construct validity using factor analysis techniques (for details, see chapter 4). As previously noted, 2 items were deleted and three factors were extracted that fit the data very well. These factors represent new subscales: Aggression, manipulation and control (11 items), verbal attacks and humiliation (14 items), and physical abuse (3

items). Scores for these 3 subscales were used as indicators of the latent variable “recent and ongoing IPV” in the testing the model using SEM. The internal consistency of the ISA in the current study was .95 for all 28 items, .88 for aggression/manipulation and control actions subscale; .94 for verbal attacks and humiliation subscale, and .85 for physical abuse, indicating excellent reliability.

Women’s Experiences of Battering Scale (WEB). Smith, Earp, and DeVellis (1995) developed the *WEB* Scale to capture the meanings battered women attach to the violence from a partner as an enduring presence in their lives. The *WEB* is a 10-item, self-report measure of women’s fear and perceived loss of power and control based on their interactions with an intimate partner. Instead of focusing on acts of physical abuse, the *WEB* assesses a woman’s perceptions of her psychological vulnerability in her relationship. A series of 10 statements ask a woman how safe she feels, physically and emotionally, in her relationship. Women are asked to rate how much they agree or disagree with each of the statements on a scale that ranges from strongly agree (1) to strongly disagree (6). All items are reverse coded and total scores (ranging from 0 to 60) computed by summing item responses, with higher scores reflecting greater coercive. A score of 20 points or higher on the *WEB* is considered positive for IPV (Smith, Earp, & DeVellis, 1995).

Research has shown that the *WEB* is a more sensitive and inclusive screening tool for detecting IPV compared to other validated tools that focus mainly on physical abuse (Coker, Pope, Smith, Sanderson, & Hussey, 2001). Therefore, concurrent validity of the *ISA* scale was assessed in relation to the *WEB* scores. Evaluation studies of the

WEB have demonstrated its effectiveness in identifying IPV among African-American and Caucasian women (Bradley, Schwartz, & Kaslow, 2005; Hankin, Smith, Daugherty, & Houry, 2010; Iverson et al., 2013; Taft, Bryant-Davis, Woodward, Tillman, & Torres, 2009). The WEB showed evidence of strong construct (convergent) validity through correlations with measures theorized to be associated with battering such as physical abuse, locus of control, and depression. In addition, all items were highly correlated ($r > .80$) (Smith, Earp, & DeVellis, 1995). Authors of a recent study tested the construct validity and the use of WEB to identify women with abusive partner suggest that the WEB taps into the construct of fear more than the violence experience itself (Crossman, Hardesty, & Raffaelli, 2016). Thus, the focus of the ISA and WEB are complementary but not completely overlapping.

The WEB was validated initially in a study of 389 women (185 who had experienced IPV and 204 who had not). Internal consistency (Cronbach's alpha) was .99 for the full sample, .93 for the abused women and .86 for non-abused women. Construct validity has been assessed through scale's correlations with measures theorized to be associated with battering such as physical abuse, locus of control, and depression. The results indicated that the WEB was significantly correlated with all variables used to assess convergent validity. In addition, all items were highly correlated ($r > .80$; Smith, Earp, & DeVellis, 1995).

The WEB has been extensively used in studies of women to capture the severity and the ongoing effects of IPV (Crossman et al., 2016; Staggs & Riger, 2005; Wittenberg et al., 2007). The internal consistency has ranged from (.88-.95), indicating good to

excellent internal consistency. In the current study, internal consistency was .95 indicating excellent reliability.

Quality of Life

Sullivan's *Quality of Life Scale* was developed based on Andrews and Withey's social indicators of well-being (1976) research and used to measure women's QOL. The original Andrew's and Withey scale contained 68 items measuring global well-being. The Quality of Life Scale (Sullivan & Bybee, 1999) is a 9-item self-report measure of women's satisfaction with 9 areas of their lives proposed to be important to women who have histories of violence. The first question captures how women feel about their lives as a whole, while the remaining eight questions capture women's satisfaction with specific aspects of their lives: personal safety, fun and enjoyment, themselves, family responsibilities, accomplishments, independence and freedom, and the way they spend their spare time. For each question, women are asked to report their satisfaction using a 7-point Likert-type scale ranging from *extremely pleased (1) to terrible (7)*. All items are reverse coded and summed to produce total scores ranging from 9 to 63, where higher scores reflect higher levels of QOL.

In the original work by Sullivan and Bybee (1999), Cronbach's alpha reliability was .88 with corrected item-total correlations that ranged from .56 to .79, suggesting good relationships between items in the scale (Sullivan & Bybee, 1999). The QOL scale has been used in a number of studies, primarily in the United States, with evidence of good internal consistency (e.g. Adams, Bybee, Tolman, Sullivan, & Kennedy, 2013; Sullivan, Bybee & Allen, 2002; Sullivan & Bybee, 1999; Sullivan, 1991; Sullivan, Campbell,

Angelique, Eby, & Davidson, 1994; Sullivan, Tan, Basta, Rumpitz, & Davidson, 1992; Sullivan & Davidson, 1991; Tan, Basta, Sullivan, & Davidson, 1995). However, the validity of the scale had not been reported, nor had it been tested with Canadian women. Therefore, the reliability and concurrent and construct validity of the QOL scale was assessed in this study prior to its use in testing the model. Results of confirmatory and exploratory factor analyses supported the original one-factor structure of the 9-item QOL scale with good internal consistency (Cronbach's alpha = .91); our analysis also provided evidence of concurrent validity (for details, see Chapter 3). Thus, the total score from the QOL Scale was used as a manifest variable in this analysis.

Social Support

The Social Support Subscale of the *Interpersonal Resources Inventory Scale (IPRI*; Tilden, Nelson, & May, 1990) was used to measure perceived social support. Tilden, Nelson, and May (1990) reported that the basis of *the IPRI* is a combination of social exchange theory (Cook, 1987) and equity theory (Messick & Cook, 1983). These two theories provide a broad perspective on the benefits and costs associated with interpersonal relationships.

The 39-item IPRI was initially developed to measure three dimensions of interpersonal relationships: perceived social support (13 items), perceived conflict (13 items), and reciprocity (13 items). All items are rated on a 5-point scale with responses summed to produce total scores for each of the 3 dimensions. In this study, only the 13-item social support subscale was used as a measure social support. On this subscale, 11

items use responses options of *strongly disagree to strongly agree* and the remaining two items use *never to very often* options.

Validity of the IPRI was assessed using the principal component factor analysis with varimax rotation in a total sample of 340 adults, students, patients and community residents. Three factors were found: 13 hypothesized social support items loaded on Factor 1, 13 conflict items in Factor II, and 8 out of 13 hypothesized reciprocity items loaded I Factor III, while the rest 5 loaded as support factor (Tilden, Nelson, May, 1990; Yarcheski, Mahon, Yarcheski, & Hanks, 2008). In addition, concurrent validity has been supported through moderate relationships in the expected direction between the three dimensions of the scale and psychological symptoms(Yarcheski et al., 2008).

Acceptable internal consistency reliability was found in initial testing, with Cronbach's alphas for social support, conflict, and reciprocity reported by Tilden et al. (1990) as .92, .91, and .83, respectively. The IPRI used to assess social support among women experiencing intimate partner violence (e.g. Ford-Gilboe et al., 2009; Guruge, Thomson, George, & Chaze, 2015; Sepali Guruge et al., 2012; Humphreys & Lee, 2009; Samuels-Dennis et al., 2013), with evidence of acceptable internal consistency reliability. In the current study, internal consistency was .93.

Mastery

The 7-item Mastery scale (Pearlin & Schooler, 1978) was used to measure women's level of mastery after leaving. The scale assesses the extent to which women feel confident in their ability to control their lives and assesses generalized expectations about the extent to which one can influence events in one's life with seven items (e.g., "I

have little control over things that happen to me”). Items use a 4-point Likert-type response scale ranging from 1 (*strongly agree*) to 4 (*strongly disagree*). Responses to 5 negatively-worded items were reverse scored before summing responses to all items to create total scores ranging from 7 to 28, with higher scores reflect higher levels of mastery.

Pearlin’s mastery scale demonstrated acceptable internal consistency across varied population, including among women experiencing domestic violence (Kalil, Tolman, Rosen, & Gruber, 2003; Renner, Cavanaugh, & Easton, 2014). In addition, concurrent validity is supported by positive correlations with self-esteem (Pearlin & Schooler, 1978) and a negative correlation with psychological symptoms (Folkman et al., 1986). Moreover, there is evidence of reasonable internal reliability (Seeman, 1991) and good construct validity (Pearlin et al., 1981).

The Mastery Scale has been used in samples of women with histories of IPV (e.g. Lehavot et al., 2009; MacIntosh, Wuest, Ford-Gilboe, & Varcoe, 2015; Mitchell & Hodson, 1983; Owen et al., 2008; Renner et al., 2014; Skomorovsky & LeBlanc, 2017; Umberson et al., 1998) with a good internal consistency, ranging from .72-.85. In the current study, internal consistency was .80.

Data Analysis Plan

Data were analyzed using the SPSS Version 24 and Mplus Version 8 (Muthén & Muthén, 2012). Normality of each distribution was inspected using histograms and by computing skewness and kurtosis scores because the default estimation method for SEM assumes multivariate normality for continuous outcome variable (Kline, 2016). In

addition, descriptive statistics were computed for each variable. The pattern of missing data was assessed using Little's test in SPSS. Since the p -value for the test was not significant, the assumption of data missing completely at random was confirmed. Therefore, missing values were imputed using the women's average score on each scale for the primary study data file. This approach is reasonable because participants' responses were consistent across the set of items in each scale most of the time; it also allowed all cases to be used for analysis.

Descriptive statistics were reviewed for all manifest and latent variables, including skewness and kurtosis, in order to assess normality of the distributions. Kline (2016) notes that data are considered non-normal if the skewness index >3 and kurtosis index >10 . In the current study, inspection of the univariate distributions showed that assumptions of multivariate normality were not met for the ISA-physical subscale.

Our analysis plan used Structural equation modeling (SEM) to test the hypothesized model. SEM is used in order to estimate the nature of the relationships between the latent and the observed variables in the model including direct, indirect, and mediating effects (Kline, 2016). Robust maximum likelihood estimation method was used to correct for non-normality in the data. In the analysis, social support and mastery were allowed to correlate based on the previous research results. Model fit was assessed using the following indices: comparative fit index (CFI), root-mean-squared error of approximation (RMSEA), Chi-Square, and standardized root mean square residual (SRMR). These indices were chosen because they are the most insensitive to sample size, parameter estimates, and model misspecification. The CFI is "an

incremental fit index (IFI) that is also a goodness-of-fit statistic” (Kline, 2016). Its value ranges from 0 to 1 where 1 is a good result with “best fit”. A CFI value of more than or equal .95 was recognized as a good fit (Hu & Bentler, 1999). RMSEA is an absolute fit index, where 0 value indicates the *best or exact fit; however*, because we rarely do we find 0, values less than .05 was considered as *close fit*, values between .05 and .08 was considered as a *fair fit*, values between .08 and .10 were a *mediocre fit* and values more than .10 are *poor fit* (Chan et al., 2007). Chi-Square is a reasonable measure of fit. Hence, non-significant Chi-Square means that the model fits with the covariance data (Kline, 2016). Chi-Square will be used (χ^2/df) if it falls between 5.0 (Wheaton et al, 1977) and 2.0 (Tabachnick & Fidell, 2007). Values for the SRMR range from 0 to 1.0, with well-fitting model value less than .05 and values as high as .08 considered acceptable (Hu & Bentler, 1999). Modification indices those were theoretically reasonable and greater than four in value were considered in revising the model.

Results

Descriptive statistics for each indicator are shown in Table 2. The mean score on the WEB was in the moderate range (equivalent of 2.49 on a 6-point scale). Scores on the 3 indicators derived from ISA subscales varied but were all relatively low on the 100 point scale used; verbal attacks and humiliation was the highest (19.4 on a 100 point scale), followed by aggression/manipulation and control (9.06 on a 100 point scale). Physical abuse was very low (1.3 on a 100-point scale). The total mean score on the QOL Scale was 43.86 (equivalent of 4.9 on a 7-point likert scale). This would be moderately high. Social support scores (equivalent of 4.34 on a 5-point scale) and mastery scores

(equivalent of 3.63 on a 4-point scale) were also quite high. Based on Kline (2016), the absolute values for skewness index (SI) and kurtosis index (KI) were applied and specified that the data is normally distributed if $SI < 3$ and $KI < 10$.

Table 2

Descriptive statistics for manifest variables and indicators of latent variables (N=206)

<i>Variable</i>	<i>Measure</i>	<i>Mean</i>	<i>SD</i>	<i>Range</i>	<i>Skew</i>	<i>Kurtosis</i>
Severity of IPV	WEB	24.867	16.092	10-60	.693	-0.942
	ISA-PA	1.335	7.077	0-75	7.650	67.124
	ISA-VAH	19.442	22.521	0-95.35	1.086	0.326
	ISA-AMC	9.066	14.928	0-63.19	1.981	3.252
Quality of life	QOL-total	43.865	11.285	14-63	-0.531	-0.330
Social Support	SS-total	55.061	9.588	20-65	-1.185	0.987
Mastery	M-total	25.437	5,839	9-35	-0.253	-0.596

Note: ISA-P = ISA Physical Abuse; ISA-VAH = ISA Verbal Abuse and Humiliation; ISA-AMC = ISA Aggression, Manipulation and Control

Additionally, correlations among the variables were assessed (Table 3) with the highest correlation found between the WEB scale and the verbal attacks and humiliation subscale. This is reasonable given that both the WEB and the verbal attacks and humiliation subscale of the ISA aim to measure the same type of abuse (i.e. psychological abuse).

Table 3

Pearson r Correlations among Measured Variables

Measured Variables	1.	2.	3.	4.	5.	6.	7.
1. WEB	1						
2. ISA-Physical	.274	1					
3. ISA-Verbal	.820	.335	1				
4. ISA-Control	.626	.397	.677	1			
5. QOL-total	-.417	-.158	-.399	-.368	1		
6. SS-total	-.289	-.208	-.208	-.215	.694	1	
7. M-total	-.406	-.091	-.322	-.377	.555	.511	1

Note: WEB= women Experiencing Battering scale; ISA-Physical= physical abuse subscale, ISA-Verbal= verbal attacks and humiliation subscale; ISA-Control= aggression/manipulation and control subscale; QOL-total=quality of life scale total; SS-total=social support total; M-total= mastery total score.

Measurement Model

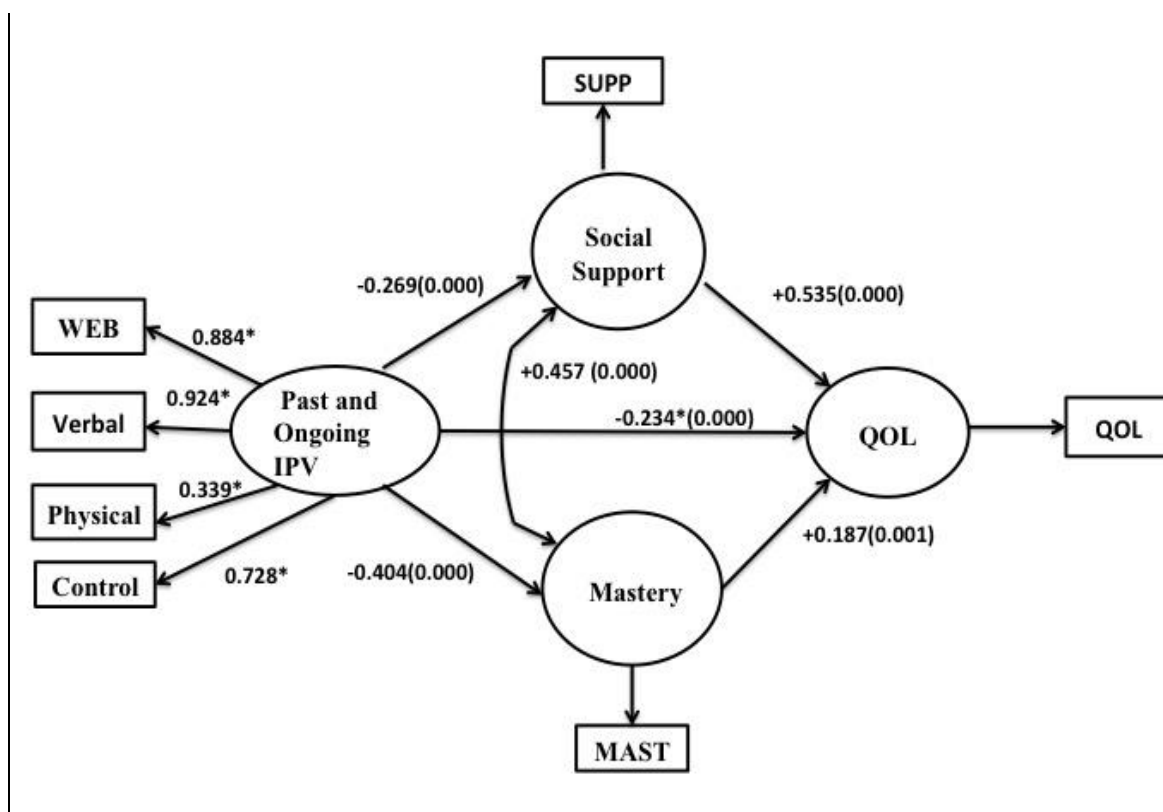
Standardized factor loadings for the latent measure (IPV) were statistically significant and of substantial magnitude (0.339-0.924)(Figure 2), providing support for the measurement model. There were no unreasonable parameter estimates, and all values appeared to be in the expected range.

Model Fit

The proposed SEM model was found to adequately fit the data after considering one theoretically reasonable modification index, which allowed two subscales of the ISA (aggression/manipulation and control, physical abuse) to correlate. The chi-square= 34.666 ($df= 10$), CFI/TLI= 0.955/0.905, RMSEA=0.109, and SRMR= 0.032.

Direct and Indirect Effects of IPV

The model accounted for 58.1 % of the variance in QOL. Standardized regression coefficients for each path are shown in Figure 2 and Table 4. Severity of previous and ongoing IPV had significant direct effects on QOL ($\beta=-0.234$, $p<0.05$). Social support and mastery were significant mediators IPV-QOL relationship, but the path through social support was stronger. Specifically, the indirect effects of IPV on QOL were $\beta=-0.076$ ($p<0.05$) through mastery and $\beta=-0.144$ ($p<0.05$) through social support. IPV exerted direct negative effects on social support ($\beta=-0.269$, $p<0.05$) and mastery ($\beta=-0.404$, $P<0.05$); social support ($\beta= 0.535$, $p<0.05$) and mastery ($\beta= 0.187$, $p<0.05$) also had significant positive direct effects on QOL.



* $P<0.05$. WEB=Women Experiencing Battering scale; Verbal=verbal attacks and humiliation; physical=physical abuse; control=aggression/manipulation and control; SUPP=Social Support Scale; QOL=QOL Scale; MAST=Mastery Scale.

Figure 2: Structural equation model with standardized path coefficients

Table 4

Standardized total and specific indirect effects for full final mode

Structural Effects	Standardized coefficients (β)	SE	Critical Ratio
Direct effects			
IPV -> QOL	-0.234*	0.059	-3.985
IPV -> QOL Total	-0.453*	0.068	-6.651
Indirect effects			
<i>Total Indirect Effects</i>	-0.220*	0.046	-4.756
<i>Specific Indirect Effects</i>			
IPV -> M -> QOL	-0.076*	0.029	-2.642
IPV -> SS -> QOL	-0.144*	0.038	-3.744

P < 0.05, M = mastery, SS = social support.*

Additional Analyses

One modification index (value=11.894) suggested a new path between the verbal attacks and humiliation indicator and mastery. Theoretically, verbal attacks and humiliation can encompass a range of strategies to dominate a partner's personal life. For example, intimate partners may use verbal attacks and humiliation in order to make women feel that they do not have control over their lives and they will be always dependent to them. Therefore, women's mastery may be diminished depending on the verbal attacks and humiliation level they are facing from their abusers (Bebanic, Clench-Aas, Raanaas, & Bang Nes, 2017).

After adding a new path between the verbal attacks and humiliation factor and mastery total score, model fit indices improved: Chi-square= 18.435 ($df=9$), RMSEA=0.071, CFI/TLI= .983/. 959, and SRMR=0.02. The direct effect of verbal attacks

and humiliation and mastery was significant ($\beta = .176, P = 0.001$), with slight changes in other paths.

Discussion

This is the first study assessing the direct and indirect relationship between IPV and QOL among women who have separated from an abusive partner. The results of this study serve an important purpose of explaining how social support and mastery mediate the relationship between IPV and QOL. Social support and mastery partially mediated the relationship between IPV and QOL. However, social support mediation was stronger than that of mastery.

Results of this study provide an understanding the relationships among women's recent and ongoing experiences of IPV and QOL in a Canadian community sample. Assessing for the severity of the abuse 4-7 years after separation is crucial to understand factors that may be shaping women's QOL in the post-separation context. The study findings suggested that previous and ongoing IPV impacts women's QOL even after years of separation, a finding that supports the idea that our previous experiences shape our future lives. This is consistent with research showing that IPV can have persistent and long-term impacts on women's health and their lives. For example, research has documented the effects of previous and current IPV experiences on health including across the lifespan (Duffy, 2015; MacIntosh et al., 2015; Scott-Storey, 2011; Sundermann, Chu, & DePrince, 2013); women exposed to more than one type of abuse may suffer from greater impairment in QOL in the future (Theran et al., 2006). Pregnant women who have experienced many types of abuse were more likely to score low in

their health related QOL as a result of build up stress and diminished physical functioning (Lau, Keung Wong, & Chan, 2008; Tavoli et al., 2016).

The finding that social support and mastery mediated the relationship between previous and ongoing abuse experience and QOL is consistent with the available literature. In various studies, mastery and social support has been shown to play an important role in the relationship between stressors and QOL (Bybee & Sullivan, 2005; Skomorovsky & LeBlanc, 2017). Specifically, mastery and social support have been found to mediate the relationship between stressors and QOL in various populations (Bovier, Chamot, & Perneger, 2004; Gadalla, 2010). This is consistent with the Stress Process Model (Pearlin, 1989) such that more severe IPV experience has a stronger impact in eroding such resources; lower levels of mastery and social support are then associated with poorer QOL. This resonates with the findings of one study in which social support mediated the relationship between physical abuse and women's well-being (Beeble et al., 2009). Our results extends understanding though the addition of mastery as a personal resource for women, and by considering these relationships in women who had separated from an abusive partner 4 to 7 years earlier.

The direct and indirect relationships between both social support and mastery and QOL could be explained by the fact that women may draw on their personal and social resources in order to help improve their lives when dealing with stressful experiences, including ongoing IPV. However, almost all the available evidence in support of this premise has focused on the health-related QOL and not QOL in general. For example, Bovier, Chamot, and Perneger, (2004) found that social support and

mastery mediate the relationship between stress experience and mental health symptoms. In addition, the current study used a more rigorous analytic approach to test mediation than analyses such as linear regression used in other studies. Structural Equation modelling is more powerful because it takes into account the measurement error, correlated error terms, and multiple latent variables measured by multiple indicators (Garson, 2007).

The current study showed that social support mediated the relationship between IPV and QOL, and had a stronger mediating effect on this relationship than mastery. This finding is noteworthy because it highlights the importance of social support as a resource for women years after separation. Differences in the strength of mediating effects might be explained by the fact that chronic and severe IPV may have more substantial effects on women's personal resources (such as mastery or sense of control) than on their social networks (which may be farther removed from the violence). These findings are consistent with other researchers who have noted the negative effects of abuse on women's sense of confidence/control (Adams et al., 2013; Allen & Wozniak, 2011). In support of this idea, the direct effect of IPV on mastery was stronger than its effect on social support.

Furthermore, the results of this study suggest that social support is more influential in shaping women's quality of life than her level of mastery. Although not tested in this study, social support from family and friends may buffer for chronic stress associated with IPV (Skomorovsky & LeBlanc, 2017). In addition, satisfaction with important relationships with family members, friends and others is an important

dimension of QOL. Thus, it makes sense that women who report greater access to support from their network would also be more satisfied with this aspect of their lives, and report better QOL.

The finding that IPV had significant direct effect on both social support (Beeble et al., 2009; Owen et al., 2008) and mastery (Lehavot et al., 2009; Renner et al., 2014b) is consistent with previous research. However, this study's findings make a distinctive contribution as it explains this relationship using a rigorous analytic approach and included various abuse types (including verbal attacks and humiliation, aggression, manipulation and control) – both current and recent (i.e. in the previous 12 months). Moreover, using data from a community sample of women who had separated 4 to 7 years earlier means that results can be applied to an under-studied population.

In the current sample, women's scores for verbal attacks and humiliation, aggression, manipulation and control abuse were higher than for physical abuse. This is not surprising given that women had initially left the abusive partner 4 to 7 years earlier. Some were still in contact with the abuser, which may have increased their risk of verbal attacks and humiliation, and aggression, manipulation and control abuse more so than physical abuse. Health care providers should understand that abuse may be more psychological after separation but still exerts an ongoing negative effect on women's lives. Providing appropriate care, such as psychological counselling or other interventions that are effective in helping women regain a sense of control and/or increase support could lead to improvements in their quality of life.

Additional analyses conducted in this study support the addition of a path linking verbal attacks and humiliation and mastery. Although this was not hypothesized in the original model, this relationship is reasonable and should be studied in greater depth in future research. It is possible that this new path may be explained by the nature of the study sample given that women who are separated from an abusive partner are more likely to suffer from verbal attacks and humiliation, which may then affect their perceived level of control and confidence over time (Bebanic, Clench-Aas, Raanaas, & Bang Nes, 2017; Lachs et al., 2013).

Strengths and Limitations

To our knowledge, this was the first study to test the mediating effects of social support and mastery on the relationship between previous and ongoing IPV experience and women's quality of life. The use of data from a relatively diverse community sample of Canadian women who had experienced violence extends the applicability of results to a wider population of women.

Although the current study supports the effects of previous and ongoing IPV experience, mastery and social support on women's QOL after separating from an abusive partner, it has some limitations. Although secondary analysis is efficient, lack of control over how a study was designed and how data were collected can limit the conclusions that can be drawn from the analysis (Castle, 2003). In this research, two of the primary measures required additional psychometric testing before included them as indicators in the analysis. While the result of testing supporting both reliability and validity of these scales, each also requires additional validation work. On the ISA,

experiences of abuse were measured retrospectively and may be subject to recall bias; however, this risk is tempered by the relatively recent time frame (previous 12 months) and the fact that it is generally accepted that women are more likely to underestimate, rather than overestimate, experiences of abuse (Hardt & Rutter, 2004). The use of cross-sectional data in this study means that causal inferences about the relationship in the model cannot be made. Further research is needed to examine whether mastery and social support mediate the relationships IPV and QOL over time using longitudinal data, and among women from various cultural backgrounds.

Conclusion

This study provides evidence through structural equation modeling analysis that mastery and social support mediate the relationship between previous and ongoing IPV experience and QOL among women who separated from an abusive relationship, with social support being a stronger mediator than mastery. These results reinforce the importance of attending to the chronic effects of previous and ongoing abuse in shaping quality of life of women who have left an abusive partner, and of ensure that supports are available to assist women to regain control and support during this critical transition.

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CHAPTER 6 STUDY SUMMARY AND IMPLICATIONS

Many studies have documented the impacts of Intimate Partner Violence (IPV) on health and women's lives. Despite the importance of these studies, important gaps in knowledge remain. First, there are still debates about the conceptualization and measurement of IPV and Quality of Life (QOL) and a need for rigorous psychometric testing of self-report scales. In many studies, there is a mismatch between the QOL definition and measure used. Second, few researchers have examined the contextual factors that shape how IPV experiences affect women's QOL years after leaving the abusive relationship. Several researchers have examined external and internal resources that mediate the relationship between IPV and health consequences among women with histories of IPV (Cluss et al., 2006; Ford-Gilboe et al., 2009; Guruge et al., 2012). No studies, however, have examined whether social support and mastery mediate the relationship between IPV and women's QOL after leaving. The mechanisms that explain how IPV affects women's QOL are poorly understood. While some researchers have tested the validity and the reliability of IPV measures, few of these studies have used community samples. Doing so offers an opportunity to strengthen a scale such as the *Index of Spouse Abuse*.

To address these gaps, the current study was conducted to both test a theoretical model explaining how social support and mastery mediate the relationship between IPV and women's QOL after separation and to advance the measurement of IPV and QOL by assessing the validity and reliability of the *QOL scale and the Index of Spouse Abuse (ISA)*.

Conceptual Model

The theoretical model underlying this study was the Stress Process Model (SPM) (Pearlin, Lieberman, Menaghan, & Mullan, 1981). The SPM is a sociological model that defines stress as a process that develops within the context of an individual's life and leads to various adverse outcomes on health and other aspects of life. The SPM explains how chronic stressors, such as IPV, might affect health and QOL, taking into consideration several mediating factors.

Stressors come from the individual's life and social surroundings and affect the individual's ability to cope (Pearlin, 1989) and are of two types: life events and chronic strains. Life events are changes in social life that require coping/adjustment, such as divorce or getting married (Pearlin et al., 1981). Chronic strains are recurrent problems that arise repeatedly over time or tend to persist, such as experiences of discrimination (Pearlin, 1989). IPV can be seen as a chronic strain because women separating from abusive partners are at high risk of suffering ongoing stress, health problems, economic strain, and social barriers to service seeking (Alhalal, Ford-Gilboe, Kerr, & Davies, 2012; Ford-Gilboe et al., 2009; Thomas, Wittenberg, & McCloskey, 2008; Walker et al., 2004).

Resources or stress mediators are factors that influence the effects of stressors on health and can include personal, social and coping resources. Access to resources may vary with individuals' economic and social status (Pearlin & Bierman, 2013) and this may explain some of the variability in health among individuals who have been exposed to the same stressor.

Based on both the SPM and literature review, a conceptual model was constructed to test the relationships between recent and ongoing IPV experiences (chronic stressor) and QOL (outcome), and the mediating effects of mastery and social support (resources). Specifically, it was hypothesized that the severity of recent and ongoing IPV would affect women's QOL directly and indirectly, by affecting their mastery and social support. Specifically, more severe IPV would lead to poorer quality of life, in part, by eroding women's mastery and social support.

Method

The study purposes were addressed by conducted secondary analyses of data from Wave 5 of the Women's Health Effects Study (WHES), a longitudinal study of changes in women's health, IPV exposure, and resources after leaving an abusive relationship/partner over a four-year period of time (Ford-Gilboe et al, 2009). The community sample included 309 adult (18-65 years of age) English-speaking women who had left an abusive partner at some point in the three years prior to enrolment and recruited from three Canadian provinces (Ontario, British Columbia, and New Brunswick). Eligible women received a verbal description of the study from a research assistant, provided written informed consent and took part in five structured interviews (baseline and 12, 24, 36, and 48 months later)(Ford-Gilboe et al., 2009) comprised of reliable and valid self-report measures and survey questions. Wave 5 included 250 of the original sample of 309 women. Using these data, the reliability and validity of both the *Index of Spouse Abuse and Quality of Life scale* were assessed with exploratory and

confirmatory factor analyses, while structural equation modelling was used to test the theoretical model.

Results

The results of this study contribute to the literature in several ways. First, acceptable fit was found between the model and the data: chi-square= 34.666 ($df= 10$), CFI/TLI= 0.955/0.905, RMSEA=0.109, SRMR= 0.032. This result provides support for the mediating effects of mastery and social support on the relationship between severity of IPV and QOL. More severe levels of IPV had greater negative effects on both social support and mastery, resulting in poorer quality of life for women. Second, evidence of the construct and concurrent validity and reliability of both the ISA and QOL scale was found; specifically, the QOL scale was found to reflect a single factor, while a new three-factor solution was supported for the ISA based on 28 items, in contrast to the original 2-factor structure. These findings enhance the credibility of two existing measures of key concepts important in women's health research (IPV, QOL) but had not been rigorously evaluated. As such, these results improve their applicability and usefulness of the ISA and QOL Scale for future research.

Study Limitations

Although these study findings are promising, we acknowledge several limitations. The use of retrospective reports of IPV experiences on the ISA may have resulted in participants underestimating their experiences, rather than overestimating them. Furthermore, items on both the ISA and WEB place more emphasis on psychological aspects of IPV and less so on physical abuse. It is possible that results

might be different if a measure of IPV that emphasized acts of physical abuse was used. The use of cross-sectional data does not provide definitive evidence of causal relationships among variables in the model. However, capturing women's reports of both recent (past 12 months) and ongoing abuse adds a longitudinal dimension to the analysis and provides initial support for causal relationships between IPV severity and QOL. Finally, the use of secondary data analysis limited the analysis that could be done, although this limitation does not seem to be substantial.

Importantly, the sample of women who participated in this study was, in fact, diverse in terms of age, economic background, and IPV history; the results of this study provide some of the first evidence of both reliability and validity of the ISA and QOL, and the relationships in the model among Canadian women who have separated from an abusive partner.

Study Implications

The results of this study have important implications for nurses' practice, research, education, and policy.

Nursing Practice

Women with histories of IPV use health services more than women in the general population for varied reasons (Ford-Gilboe et al., 2009, 2015). Women who are experiencing, or have experienced, abuse and may be in contact with a health care provider even before contacting legal supports or other services. Nurses are frontline caregivers to all patients in the healthcare system, and, as such, they have a particularly important role to play in responding to women who have experienced IPV.

The results of this study point to the importance of nurses and other health care providers recognizing that IPV often continues after separation and can continue to negatively affect women's QOL. In this study, women were still dealing with verbal abuse and controlling behaviours 4 to 7 year after separating from an abusive partner. Thus, there is a clear need for nurses and other health care professionals to consider that women they meet in clinical settings may be victims of IPV or still suffer from consequences, even if they are no longer with a partner. While women rated their QOL in the moderate range overall, this varied based on the severity of violence they continued to experience.

Thus, assessing previous and ongoing IPV experiences is important in understanding what is shaping women's QOL and well-being, even years after separation. Specifically, engaging in early identification of abuse and providing women with non-judgmental support and assistance in safety planning may help to reduce the negative toll of IPV on their QOL. Contact with a nurse who understands the nature of IPV and how to respond appropriately may increase women's safety and access to community resources and decrease adverse health consequences related to abuse (Bradbury-Jones, Clark, & Taylor, 2017; Gilbert et al., 2017). There is recent evidence that enhanced nurse-delivered interventions addressing IPV can reduce IPV and improve women's safety, mental health, QOL, and services use (Feder et al., 2011; Gupta et al., 2017; Miller, McCaw, Humphreys, & Mitchell, 2015, Tiwari, Fong, Yuen et al., 2010). For example, the Domestic Violence Enhanced Home Visitation (DOVE) intervention has been shown to reduce violence for women experiencing current or recent abuse (Sharps

et al., 2016). A recent study found that inviting women to be more reflective about their relationship and engaging women in weekly conversations improved women's coping strategies, providing an enhanced sense of hope, exposed them to new resources that could be helpful, and increased their likelihood of seeking counselling (Burge, Talamantes, Ferrer, Foster, Becho, Wood, Katerndahl, 2017). Moreover, engaging in advocacy interventions to help women navigate systems could decrease physical abuse (Kulkarni, Herman-Smith, & Ross, 2015; Sullivan, 2012). The WHO (2013) *Clinical and Policy Guidelines for Responding to Intimate Partner Violence And Sexual Violence Against Women* provide evidence-based recommendations to assist nurses in assessing IPV and providing initial support for women (WHO, 2013).

Providing health care professionals with best practice guidelines and resources to assist them when IPV is detected is important. In addition, collaborating with victims services or shelters by making "warm referrals" may enhance women's help seeking and access to advocacy (Miller et al., 2015). Nurses should have the knowledge and skills that will enable them to support women who have experienced, or are currently experiencing, abuse. Additionally, nurses should work within the health system to ensure that processes are in place that will encourage and support these practices. In health care settings, nurses can provide leadership in forming multidisciplinary teams to work with IPV survivors and to ensure that appropriate referrals are made as needed. In Canada, nurses can collaborate with shelters in order to help women access a safe place to stay and critical resources during period of crisis. Online resources and interventions are showing promise as resources to improve women's confidence, safety actions and

mental health including the IRIS intervention in the United States (Glass et al., 2017) and iSAFE in New Zealand (Koziol-McLain et al., 2015).

The results of this study point to the importance of women's resources (mastery and social support) in improving their QOL, but also underscore that more severe IPV erodes these important resources. As such, nurses should work to address IPV and women's resources simultaneously in order to improve women's QOL after separation. Specifically, nurses might help to strengthen women's mastery (control) and social support by applying interventions or ways of working with women that foster their sense of confidence and control. For example, the Intervention for Health Enhancement and Living (iHEAL) is a woman-led nursing intervention developed specifically to assist Canadian women in improving their health, safety and quality of life (Ford-Gilboe, Merritt-Gray, Varcoe, & Wuest, 2011; Varcoe et al., 2017).

Implications for Research

There are many implications for future research, theory development and concept validation. Additional research is needed to assess QOL among women who have experienced IPV in the past compared to those who are currently experiencing IPV using the QOL scale or different QOL measures. The use of different samples to confirm the latent structure of IPV is also warranted. The factor structure of the 28-item Index of Spouse Abuse scale requires additional testing with samples, since the initial analysis was exploratory. Extension of testing to women from various cultural contexts would be useful in improving the applicability of the scale. Attention should be given to the

possibility of further reducing redundancy in the item pool of the ISA by deleting vague or less important item in order to create a shorter, more usable version of this measure.

Additionally, research should continue to examine the mechanisms that explain the impacts of IPV severity on women's QOL after separation. Many factors may affect women's QOL after leaving including socioeconomic status, age, health problems and employment. While it was not possible to consider these factors in this study, they should be examined in future studies in order to better understand the complex ways that IPV can impact women's QOL. It might be beneficial in future research to test how IPV affects different aspects of QOL in order to delineate whether some effects are stronger than others. This understanding could inform the development of interventions.

Recent and ongoing IPV experience was the chronic stressor found to impact women's QOL directly and, indirectly, through social support and mastery, providing support for Pearlin's theory. Thus, the proposed model was useful in understanding the stress process in the context of IPV. Future studies could expand on this work to examine other factors that may mediate or moderate the effects of IPV on women's quality of life using Pearlin's model. For example, community support, resilience, and agency are all potential mediators that are consistent with Pearlin's model.

Additionally, qualitative research could help to advance understanding of women's QOL or factors that shape it after separation. Specifically, qualitative studies could explore women's quality of life in the context of abuse experiences and other conditions, how these are shaped by their living conditions and change over time.

Research about IPV and associated life outcomes remains a work in progress. Thus, scholars should focus on conducting both qualitative and quantitative studies to gain a fuller understanding of the impacts of IPV on women's health and lives using valid and reliable measures.

Nursing Education

The nurse's role in supporting women who have experienced IPV is still underdeveloped in nursing curricula. Drawing attention to IPV as a significant health issue that needs attention from all health care professionals, and especially from nurses, will contribute to increased awareness about this issue and may serve to limit its consequences. It is widely recognized that health care professionals who receive formal training and education about IPV are better able to assess and detect IPV cases than those without this education (Bermele, Andresen, & Urbanski, 2018; Gupta et al., 2017; Jack et al., 2017). While more attention is being given to this issue in nursing education, additional strategies are needed to ensure that nurses receive the education they need to assess and respond to IPV in a safe, appropriate way. Given that women continue to suffer from verbal abuse and controlling behaviors even years after separation in the current study, education should address the idea that IPV is often a chronic women's health issue and counter common assumptions that discount the impacts of psychological abuse, or lead nurse to expect that violence ends post-separation.

Nurses should have a comprehensive understanding of IPV processes, manifestations, and consequences in order to plan and deliver safe and effective care to women. In addition, up to date evidence about IPV should be integrated into the

education of nursing students and in continuing education in order to ensure competency. Efforts are needed to design workplace education programs targeted to nurses and other health care providers and that introduce them to new IPV services and assessment protocols. This strategy could help nurses play an important part in early detection, management, and future prevention of this phenomenon as their knowledge about IPV could promote their confidence and self-efficacy to deal with this important issue rather than avoid it. Given the importance of control and social support on women's quality of life, decisions about care should developed in collaboration with women themselves, and, where appropriate, include people who women identify as supports.

The current study results highlight the effects of IPV on women's QOL years after separation. Thus, nursing curricula should emphasize the long lasting effects of IPV and include an understanding about how women's resources (such as mastery and social support) are critically important but often eroded by the violence. Exploring how women's sense of control and social support can be strengthening by nursing actions is critical. Where possible, providing clinical simulations or direct practice experiences working with women who have experienced IPV would provide key opportunities to integrate theory and practice.

Policy

The study results have implications for the development of policy, including the establishment of new guidelines that address women's safety, health and quality of life after separation from an abusive relationship. Policies that directly support service

delivery or other strategies designed to improve the quality of life of women who have experienced IPV are needed. The results of this study suggest that strategies that aim to enhance women's personal control and social support are important. Policies that encourage direct assessment and re-assessment of women's quality of life over time could lead to improved service delivery health and social services agencies.

IPV prevention programs should be given serious attention by governmental and non-governmental agencies. As is widely understood, IPV is a manifestation of gender inequality and requires intervention at both individual, community and policy levels. Funding to developing and offer effective interventions that encourage them to speak up about their QOL after leaving an abusive relationship while enhancing their personal and social resources is needed. Reaching out to women who have experienced abuse in order to evaluate their QOL by assessing their perceived safety levels and life satisfaction would be an important component of a long-term secondary prevention strategy.

Many health care settings have established policies related to assessment of, and responses to, abuse, including IPV. However, wide variations still exist regarding the characteristics of these policies and the extent to which they are enacted. A better understanding of how existing policies impact health care providers and, ultimately, outcomes for women is still needed (Williams, Halstead, Salani, & Koermer, 2016). In addition, social policy is needed to improve women's access to fundamental issues faced by women post-separation including access to safe, affordable housing and childcare, training and employment opportunities, recreation, and social interaction; these are

important dimensions of quality of life and policies can be developed to address structural barriers that make access difficult for women. Finally, media have an important role to play in raising awareness that IPV is a chronic health issue that may affect women in any stage of the relationship and seriously diminish a woman's potential for a satisfying life and to contribute to society even years after separation.

Conclusion

To our knowledge, this was the first study to examine the relationship between recent and ongoing IPV and QOL among women who left an abusive relationship. Results from this study indicate that mastery and social support mediated the effects of IPV severity on women's QOL. This study also provides evidence of the psychometric properties of two important self-report measures: *Index of Spouse Abuse scale* and *Quality of Life scale*. Finally, results of this study have important implications for nursing education, practice, future research and policy.

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Appendix A

The Effects of Personal, Social and Economic Resources on Mental and Physical Health of Women in the Early Years After Leaving an Abusive Partner

“Women’s Health Effects Study: Wave 5” Letter of Information

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You are being asked to extend your participation in the Women’s Health Effects Study for a 5th interview. The purpose of this study is to learn about changes in women’s mental and physical health in the early years after leaving an abusive male partner. The information obtained in a 5th interview would allow us to gain a deeper more complete understanding about how women’s health changes over time that is not possible using information from the first 4 interviews conducted for this study. We hope that the following information will help you to decide whether to take part.

What will I have to do if I choose to take part?

If you agree to take part, you will be interviewed and have a health assessment completed by a Registered Nurse approximately one year after you have completed the 4th interview for this study. This interview will be similar to previous study interviews and will take about 2.5 to 3 hours to complete. You will be asked questions about you; your health; your family, relationships and community; your finances; the health and social services you use; your experiences of abuse; and your health problems and how you have managed these problems. The nurse will also do some simple tests including: blood pressure, weight and waist measurement, using a measuring tape. To test your hearing, she will insert a small plastic cone (speculum) into your outer ear and you will be asked to indicate when you hear a beeping sound.

The interview will take place in your home or other private location that you choose (eg. research office, library or other community location). If you live more than 2 hours from

the study site, or cannot otherwise take part in person, you may be asked to complete all or part of the interview by telephone.

To ensure that we can contact you for the 5th interview, a member of the research team will contact you every 3 to 6 months to keep your address and phone number up to date. We will contact you in the way you prefer (i.e. by mail, e-mail, or telephone).

Are there any risks or discomforts?

The risks of taking part in this study are small. You may become upset by some questions if you recall painful experiences. If you become upset, the interview or health assessment will be stopped and support will be provided. If you wish, we will give you information to help you find counselling or other support services. We know that some women who have recently left abusive partners are at-risk of harm from their ex-partners. We will continue to ask you about the level of safety risk you are facing from your ex-partner and use the safety plan we developed with you for all contacts. We will continue to update this plan each time we contact you.

What are the benefits of taking part?

You may not benefit directly from taking part in this study. Your participation may help health care workers to understand and help women who have experienced abuse in the future. Some women find that talking about their situation helps them to understand their life or health. You may also learn about useful community services.

Do I have to take part?

Participation in this study is voluntary. You may refuse to participate, refuse to answer any questions or withdraw from the study at any time.

What happens to the information I tell you?

The information you provide is confidential. Your answers will be entered directly into a laptop computer during the interview and health assessment and will be identified by a code number. Your background information will be recorded in writing on a life history calendar. Your name and other identifying information will be kept separate from your answers to the study questions and health assessment results.

Your information will be stored in a locked cabinet in a secure office that only the research team can access. Even if you drop out of the study, the information you have provided will be kept and may be used in this and other related studies.

What we learn in this study will be shared in research journals, magazines, newspapers, and public talks. Neither your name nor identifying information will be used. You may receive a copy of your life history calendar and health assessment test results if you wish. If you would like a summary of what we learn at the end of this study, tell a member of the research team.

If you tell us about any current abuse of children, we must, by law, report this to the local child protection agency. Before reporting, we will discuss this with you.

How are the costs of participating handled?

You will be given a small token payment of \$50 in appreciation of the time needed to complete the interview and health assessment. If you need to travel or have childcare to take part, we will help pay these costs.

Other information about this study

If you have any questions about the study, please call Joanne Hammerton, the Research Coordinator or Dr. Marilyn Ford-Gilboe, the Principal Investigator. If you have any concerns about the conduct of this study or your rights as a research participant, please contact The Director, Office of Research Ethics, The University of Western Ontario. This letter is for you to keep. If it is not safe for you to keep this letter, the interviewer will keep it on file for you at the study office.

Appendix B**The Effects of Personal, Social and Economic Resources on Mental and Physical Health
of Women in the Early Years After Leaving an Abusive Partner****“Women’s Health Effects Study: Wave 5”****CONSENT FORM**

I have read the letter of information, have had the study explained to me and I agree to take part. All of my questions have been answered to my satisfaction.

Research Participants Signature

Printed Name

Date

Signature of Person Obtaining Informed Consent

Appendix C



Office of Research Ethics

The University of Western Ontario

Use of Human Subjects - Ethics Approval Notice

Principal Investigator: Dr. M. Ford-Gilboe**Review Number:** 10128E**Revision Number:** 4**Review Date:** June 6, 2008**Review Level:** Expedited**Protocol Title:** The Effects of Personal, Social and Economic Resources on Physical and Mental Health of Women in the Early Years After Leaving an Abusive Partner**Department and Institution:** Nursing, University of Western Ontario**Sponsor:** CIHR**Ethics Approval Date:** June 6, 2008**Expiry Date:** December 31, 2009**Documents Reviewed and Approved:** Revised study instruments. Wave 5 Interview.**Documents Received for Information:**

This is to notify you that The University of Western Ontario Research Ethics Board for Health Sciences Research Involving Human Subjects (HSREB) which is organized and operates according to the Tri-Council Policy Statement: Ethical Conduct of Research Involving Humans and the Health Canada/ICH Good Clinical Practice Practices: Consolidated Guidelines; and the applicable laws and regulations of Ontario has reviewed and granted approval to the above referenced revision(s) or amendment(s) on the approval date noted above. The membership of this REB also complies with the membership requirements for REB's as defined in Division 5 of the Food and Drug Regulations.

The ethics approval for this study shall remain valid until the expiry date noted above assuming timely and acceptable responses to the HSREB's periodic requests for surveillance and monitoring information. If you require an updated approval notice prior to that time you must request it using the UWO Updated Approval Request Form.

During the course of the research, no deviations from, or changes to, the protocol or consent form may be initiated without prior written approval from the HSREB except when necessary to eliminate immediate hazards to the subject or when the change(s) involve only logistical or administrative aspects of the study (e.g. change of monitor, telephone number). Expedited review of minor change(s) in ongoing studies will be considered. Subjects must receive a copy of the signed information/consent documentation.

Investigators must promptly also report to the HSREB:

- a) changes increasing the risk to the participant(s) and/or affecting significantly the conduct of the study;
- b) all adverse and unexpected experiences or events that are both serious and unexpected;
- c) new information that may adversely affect the safety of the subjects or the conduct of the study.

If these changes/adverse events require a change to the information/consent documentation, and/or recruitment advertisement, the newly revised information/consent documentation, and/or advertisement, must be submitted to this office for approval.

Members of the HSREB who are named as investigators in research studies, or declare a conflict of interest, do not participate in discussion related to, nor vote on, such studies when they are presented to the HSREB.

Chair of HSREB: Dr. John W. McDonald

Appendix D – Study Measures

Index Spouse Abuse (ISA)

Now, I'm going to ask about the kinds of abuse you've experienced in your relationship(s) with _____(index partner) and any other partner(s) you have had in the past 12 months. If you have had more than 1 partner during this time, respond to EACH statement below thinking about the partner from whom the abuse was most frequent.

In the past 12 months, how often did the following occur:	Never	Rarely	Occasionally	Frequently	Very Frequently
1. My partner belittled me.	1	2	3	4	5
2. My partner demanded obedience to his whims.	1	2	3	4	5
3. My partner became surly and angry if I told him he was drinking too much.	1	2	3	4	5
4. My partner made me perform sex acts that I did not enjoy or like.	1	2	3	4	5
5. My partner became very upset if dinner, housework or laundry was not done when he thought it should be.	1	2	3	4	5
6. My partner was jealous and suspicious of my friends.	1	2	3	4	5
7. My partner punched me with his fists.	1	2	3	4	5
8. My partner told me that I was ugly and unattractive.	1	2	3	4	5
9. My partner told me that I really couldn't manage or take care of myself without him.	1	2	3	4	5
10. My partner acted like I was his personal servant.	1	2	3	4	5
11. My partner insulted or shamed me in front of others.	1	2	3	4	5
12. My partner became very angry if I disagreed with his point of view.	1	2	3	4	5

13. My partner threatened me with a weapon.	1	2	3	4	5
14. My partner was stingy in giving me enough money to run our home.	1	2	3	4	5
15. My partner belittled me intellectually.	1	2	3	4	5
16. My partner demanded that I stay home to take care of our children.	1	2	3	4	5
17. My partner beat me so badly that I had to seek medical help.	1	2	3	4	5
18. My partner felt that I should not work or go to school.	1	2	3	4	5
19. My partner was not a kind person.	1	2	3	4	5
20. My partner did not want me to socialize with my female friends.	1	2	3	4	5
21. My partner demanded sex whether I wanted it or not.	1	2	3	4	5
22. My partner screamed and yelled at me.	1	2	3	4	5
23. My partner slapped me around my face and head.	1	2	3	4	5
24. My partner became abusive when he drank.	1	2	3	4	5
25. My partner ordered me around.	1	2	3	4	5
26. My partner had no respect for my feelings.	1	2	3	4	5
27. My partner acted like a bully toward me.	1	2	3	4	5
28. My partner frightened me.	1	2	3	4	5
29. My partner treated me like a dunce.	1	2	3	4	5
30. My partner acted like he would like to kill me.	1	2	3	4	5

Quality of Life Scale

After I ask you each question, please tell me what phrase on this card gives the best summary of how you feel; either "EXTREMELY PLEASED," "PLEASED," "MOSTLY SATISFIED," "EQUALLY DISSATISFIED AND SATISFIED," "MOSTLY DISSATISFIED," "UNHAPPY," or "TERRIBLE," depending on how you feel about that part of your life. If you feel that a question doesn't apply to you, just tell me.

- 1 = Extremely pleased
- 2 = Pleased
- 3 = Mostly satisfied
- 4 = Equally dissatisfied and satisfied
- 5 = Mostly dissatisfied
- 6 = Unhappy
- 7 = Terrible

1. First, a very general question. How do you feel about your life as a whole?
2. In general, how do you feel about yourself?
3. How do you feel about your personal safety?
4. How do you feel about the amount of fun and enjoyment you have?
5. How do you feel about the responsibilities you have for members of your family?
6. How do you feel about what you are accomplishing in your life?
7. How do you feel about your independence or freedom--that is, how free you feel to live the kind of life you want?
8. How do you feel about your emotional and psychological well-being?
9. How do you feel about the way you spend your spare time?

Sullivan, C., & Bybee. (1999). Reducing violence using community-based advocacy for women with abusive partners. *Journal of Consulting and Clinical Psychology, 67*(1), 43-43-53. <https://doi.org/10.1037/0022-006X.67.1.43>

Women's Experiences with Battering (WEB) Scale

Now I'm going to ask you about emotional and psychological abuse you may have experienced in your relationship with _____ (index partner) and any other partner you have had in the past 12 months. If you have had more than 1 partner during this time, respond to EACH statement below thinking about the relationship in which these feelings were strongest. Choose the number that best describes how much you agree or disagree with each one.

Item	Strongly Agree	Somewhat agree	Agree a little	Disagree a little	Somewhat disagree	Strongly disagree
1. He makes me feel unsafe even in my own home.	1	2	3	4	5	6
2. I feel ashamed of the things he does to me.	1	2	3	4	5	6
3. I try not to rock the boat because I am afraid of what he might do.	1	2	3	4	5	6
4. I feel like I am programmed to react a certain way to him.	1	2	3	4	5	6
5. I feel like he keeps me prisoner.	1	2	3	4	5	6
6. He makes me feel like I have no control over my life, no power, no protection.	1	2	3	4	5	6
7. I hide the truth from others because I am afraid not to.	1	2	3	4	5	6
8. I feel owned and controlled by him.	1	2	3	4	5	6
9. He can scare me without laying a hand on me.	1	2	3	4	5	6
10. He has a look that goes straight through me and terrifies me.	1	2	3	4	5	6

Smith, PH, Earp, JA, & DeVallis, R. (1995). Measuring battering: development of the Women's Experience with Battering (WEB) Scale. *Women's Health, 1(4)*, 273–288.

Mastery Scale

Please indicate how much you agree or disagree with the following statements:

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

Pearlin, L. & Schooler, C. (1978). The Structure of Coping. *Journal of Health and Social Behavior*, 19, 2–21.

The Interpersonal Relationships Inventory Scale (IPRI)

The next sets of questions are about your relationships with family and friends. Most relationships with people we feel close to are both helpful and stressful. Below are statements that describe close personal relationships. Please listen to each statement and tell me the number that best fits your situation.

These first statements ask you to disagree or agree.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I know someone who makes me feel confident in myself.	1	2	3	4	5
2. Some people I care about share similar views with me.	1	2	3	4	5
3. There is someone I can turn to for helpful advice about a problem.	1	2	3	4	5
4. I can talk openly about anything with at least one person I care about.	1	2	3	4	5
5. There is someone I could go to for anything.	1	2	3	4	5
6. I can count on a friend to make me feel better when I need it.	1	2	3	4	5
7. It's safe for me to reveal my weaknesses to someone I know.	1	2	3	4	5
8. Someone I care about stands by me through good times and bad times.	1	2	3	4	5
9. I have the kind of neighbours who really help out in an emergency.	1	2	3	4	5
10. If I need help, all I have to do is ask.	1	2	3	4	5
11. I have enough opportunity to talk things over with people I care about.	1	2	3	4	5

These next statements ask you how often something happens.

Never	Almost Never	Sometimes	Fairly Often	Very Often
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	Never	Almost Never	Sometimes	Fairly Often	Very Often
12. I have enjoyable times with people I care about.	1	2	3	4	5
13. At least one person I care about lets me know they believe in me.	1	2	3	4	5

Tilden, V., Nelson, C. May, B. (1990). The IPR Inventory: Development and psychometric characteristics. *Nursing Research*, 39(6), 337–343.

CURRICULUM VITAE

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Sep 2013-Dec 2013 (N3319A+ N4441W)

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PRESENTATIONS:**

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Ray S., Jaradat D., & Rezansoff E. (2014). The process of transitioning to Canadian society for refugees with a collective violence history. Poster presented at Nurse Practitioner Association of Ontario (NPAO) Conference, Hamilton, Canada.

Ray S., Babenko-Mould Y., Jaradat D., & Rezansoff, E. (2015). Transitioning to Canadian society among refugees who experienced collective violence. Paper presentation at the NNVAWI conference, Atlanta, Georgia, USA.

Jaradat D., & Ford-Gilboe (2015). Mother's resilience and family functioning after leaving an abusive relationship. Poster presentation at the Nursing Network on Violence Against Women International Conference, Atlanta, USA.