This is to certify that the
dissertation entitled

A LONGITUDINAL INVESTIGATION OF ECOLOGICAL FACTORS RELATING TO THE MENTAL HEALTH AND WELL-BEING OF SURVIVORS OF INTIMATE PARTNER VIOLENCE

presented by

Marisa Lynn Beeble

has been accepted towards fulfillment
of the requirements for the

Ph.D. degree in Psychology

Major Professor's Signature

10-7-09

Date

A LONGITUDINAL INVESTIGATION OF ECOLOGICAL FACTORS RELATING TO THE MENTAL HEALTH AND WELL-BEING OF SURVIVORS OF INTIMATE PARTNER VIOLENCE

By

Marisa Lynn Beeble

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSPHY

Psychology

2009

ABSTRACT

A LONGITUDINAL INVESTIGATION OF ECOLOGICAL FACTORS RELATING TO THE MENTAL HEALTH AND WELL-BEING OF SURVIVORS OF INTIMATE PARTNER VIOLENCE

By

Marisa Lynn Beeble

Intimate partner violence (IPV) is a pervasive social problem impacting the physical and psychological well-being of millions of women in the United States each year. Much of the extant literature draws our attention to the devastating effects of IPV on survivors' mental health, but often overlooks how broader ecological factors may help to further explain survivors' psychological well-being. This dissertation comprises two related studies that explored ecological factors as additional predictors of survivors' psychological well-being over time. Study 1 examined the impact of resource constraints on the mental health and well-being of survivors of IPV, specifically testing whether difficulty obtaining resources is one mechanism that partially explains the relationship between IPV and women's depression and quality of life. The second study examined how disadvantage within women's neighborhood contexts may contribute to their compromised well-being, in addition to the abuse they have experienced. Across these two studies, both between-women and within-woman effects were examined.

Study 1, entitled *Understanding the Impact of Resource Constraints on the Mental Health and Well-Being of Survivors of Intimate Partner Violence Over Time*, revealed that resource constraints serve as one pathway by which abuse affects survivors' psychological well-being. Although within-woman changes in resource constraints were not found to mediate the relationship between change in physical abuse and change in

quality of life or depression, change in women's difficulties obtaining resources fully explained the relationship between change in psychological abuse and change in depression and quality of life over time. That is, survivors' resource constraints were fully responsible for the significant mental health consequences women experienced following psychological abuse. Between-women differences in initial difficulties women reported obtaining community-based resources were also examined; however, they were not found to mediate the relationship between women's earlier experiences of physical or psychological abuse and change in depression or quality of life over time.

In study 2, *An Examination of the Impact of Neighborhood Factors on the Well-Being of Survivors of Intimate Partner Violence Over Time,* neighborhood disorder and related feelings of fear of victimization had a significant impact on survivors' psychological well-being, over and above the abuse women experienced. Although between-women effects of neighborhood disorder and fear of victimization were unrelated to changes in women's depression or quality of life over time, significant within-woman effects were detected. Specifically, change in women's perceptions of neighborhood disorder was negatively associated with change in quality of life over time, and the relationship between survivors' perceptions of neighborhood disorder and quality of life was fully mediated by neighborhood-related fear of victimization. Interestingly, however, no direct relationship between change in neighborhood disorder and survivors' depression was detected. Instead, perceived neighborhood disorder was found to indirectly relate to depression, through survivors' feelings of fear of victimization. Several implications for future research and practice from these studies are discussed.

For my mom and dad, and in memory of my friend, Kristin Blumenstock, who taught me the importance of leaving this world a better place than I found it.

ACKNOWLEDGMENTS

This dissertation reflects the efforts of many to whom I am grateful. First and foremost I would like to thank my committee. A special acknowledgment goes to my chair, Dr. Cris Sullivan for her continued guidance and support, her many words of encouragement, and for the numerous opportunities she afforded me that helped me to acquire the requisite knowledge and skills to successfully complete this dissertation. I am also grateful to Dr. Deb Bybee for her commitment to my success, her patience, generosity, and kindness, and most of all for sharing her knowledge, experience, and words of wisdom countless times over. I would also like to thank Dr. Zaje Harrell for her thoughtful feedback, the support and encouragement she provided, and for the time she committed to seeing me through this process. I am also grateful to Dr. Sheryl Pimlott Kubiak for her continued dedication to my success, the mentorship she provided to me over the years, and for helping me to stay connected with the research I love most.

This dissertation would have never been possible without the emotional support and encouragement provided to me by my dissertation support group, Dr. Adrienne Adams, (soon to be Dr.) Lauren Lichty, and Dr. Carolyn McAllister. Together, we struggled, we laughed, we commiserated, and through it all, we thrived. I will always remember and cherish our times together.

To my friends and family, thank you for your patience and for always believing in me; you gave me the strength and courage to pursue my dreams. A very special thanks goes to my mother and father who, through their encouragement, love, and support taught me to believe in myself and my abilities. I also thank my closest friends and my long-

distance supporters, Amy Galarneau, Michelle Gorglione, Stephanie Hoffman-O'Connell, Bob Norton, Kelly Quackenbush-Cochran, Mujeer Qureshi, Jessica Ruddy, and Tenicia (T.) Trask for being there for me every step of the way. I also would like to express my gratitude to my 'Eco' colleagues and friends (Giannina Cabral, Charlie Collins, Jason Forney, Megan Greeson, Tiffeny Jimenez, Kevin Khamarko, Dr. Sheila Lahousse, Kristen Law, Mercedes Morales-Aleman, Steve Pierce, and Nancy Sheldon) for their support, and for making my extended East Lansing vacation most enjoyable. A special thanks goes to all of the 'Eco' faculty, especially Dr. Rebecca Campbell, for being a source of support to me during my graduate student career. Finally, I owe much gratitude to Drs. Patricia O'Connor and Marion Terenzio, who through their guidance and support, inspired me to pursue my Ph.D.

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INTRODUCTION

Violence against women is a widespread, pervasive social issue that compromises the physical, psychological, and emotional health and well-being of women worldwide (World Health Organization, 2008). Most commonly women fall victim to violence at the hands of their intimate partners (Garcia-Moreno, Jansen, Ellsberg, Heise, & Watts, 2006). According to the Centers for Disease Control and Prevention, intimate partner violence (IPV) is a pattern of behavior involving threatened or actual physical, sexual, and/or emotional harm perpetrated by a current or former intimate partner (Saltzman, Fanslow, McMahon, & Shelley, 2002) to dominate or control their current or ex-spouses', or dating partners', actions, thoughts, and feelings (Gordon, 2000; Pence & Paymar, 1993).

IPV is widespread, impacting women of all ages, and across all ethnic, racial, and socioeconomic strata (Menard, 2001). Within the United States, prevalence rates of male-initiated partner violence against women are astounding. In a national population-based random sample, 25% of women married or cohabitating with a male partner reported being physically and/or sexually assaulted by their current or former partner(s) during their lifetime, and 1.5% reported current (i.e., past year) victimization (Tjaden & Thoennes, 2000). Based on these findings, Tjaden and Thoennes estimate that 1.5 million women are victims of physical and/or sexual IPV each year. Prevalence rates are often higher (e.g., 29% - lifetime) when considering the impact of psychological or emotional abuse in addition to other forms of violence (Coker et al., 2002).

Women with abusive partners often suffer devastating injuries as well as additional short- and long-term physical and psychological health consequences from the abuse they experience (see Campbell, 2002 for a review). For instance, survivors of IPV are at significant risk for anxiety, depression, post-traumatic stress disorder, suicidal ideation, and poor overall quality of life (Adeodato, Carvalho, de Siqueira, & de Matos e Souza, 2005; Dutton, Kaltman, Goodman, Weinfurt, & Vankos, 2005; Golding, 1999; Leiner, Compton, Houry, & Kaslow, 2008). Generally, the more severe and frequent the abuse, the more significant the impact that IPV has on survivors' overall psychological well-being (Campbell, Kub, Belknap, & Templin, 1997; Dutton et al., 2005). The actual tactics of abuse employed by assailants against their partners also have important implications for survivors' psychological sequelae. Research finds that cumulative exposure to multiple forms of violence (e.g., physical, sexual, and psychological abuse) appears to be most damaging to the well-being of women with abusive partners (Houry, Kemball, Rhodes, & Kaslow, 2006).

While IPV has clearly been shown to relate to poor mental health outcomes (see Dutton et al., 2006 and Golding, 1999 for a review), far more empirical attention is needed to understand the process by which physical and psychological abuse independently and collectively predispose women to pernicious psychological symptomatology and compromise their overall well-being. To date, research has found that women's cognitive appraisals of the abuse they have experienced and their coping strategies may play an important role in their overall well-being (e.g., Calvete, Corral, & Estevez, 2008; Calvete, Estevez, & Corral, 2007). However, much of this research has emphasized individual-level factors. It is essential to examine potential intervening

factors that go beyond qualities intrinsic to survivors. Broader contextual factors may also help explain or contribute to the development of negative mental health sequelae in the lives of women with abusive partners. Understanding the impact of contextually-based additive factors and intervening mechanisms that explain or modify the abuse-distress relationship is essential to informing intervention strategies which can possibly assist women in alleviating or completely overcoming the deleterious mental health consequences associated with abuse. Empirical attention to ecologically-based factors that may alleviate, or potentially exacerbate, the relationship between IPV and mental health will provide further insight into how to assist survivors following their experiences of abuse.

Limited research has been conducted to examine broader ecological factors that may be particularly salient to survivors' experiences and their mental health trajectories over time, following IPV. Past longitudinal research has found that social support and secondary stressors (e.g., family responsibilities, loss of income) in addition to IPV have important implications for survivors' mental health (Anderson, Saunders, Yoshihama, Bybee, & Sullivan, 2003; Beeble, Bybee, Sullivan, & Adams, 2009). Two additional factors that may have important implications for survivors' psychological well-being are women's access to community-based resources and the neighborhood environments within which they reside.

External resources, whether tangible (e.g., food, clothing, shelter) or intangible (e.g., social support), are important for all individuals' autonomy and broader well-being. Difficulty obtaining resources, or a loss of resources, may pose significant stress to those attempting to meet their basic needs, or seeking to broaden their social and/or economic

capital. Within abusive relationships, assailants may restrict women's access to external resources and supports as a mechanism of control and domination (Dobash & Dobash, 1998; Raphael, 1999). The broader literature examining threatened or actual material loss or hardship finds this to be a significant correlate of poor psychological well-being (e.g., Hobfoll, Johnson, Ennis, & Jackson, 2003). Within the context of IPV, resource constraints may have significant implications for women's mental health and quality of life, as women may be unable to gain access to the requisite resources and supports to independently provide for themselves and their children, as a result of the abuse they experience. For survivors, this in turn may foster further dependency on their assailants. Limited empirical attention exists examining if resource constraints may partially mediate the relationship between IPV and survivors' psychological well-being.

Another area significantly understudied is how survivors' contextual environments may influence their broader psychological well-being. The neighborhood context in which individuals live has important implications for residents' mental health. Disadvantaged neighborhoods perceived to be high in social and physical incivilities have been found to be detrimental to residents' psychological well-being (see Truong & Ma, 2006 for a review). Prevalence rates of IPV within disadvantaged neighborhoods are also alarmingly high (Benson, Fox, DeMaris, & Van Wyk, 2003; Miles-Doan, 1998). However, limited attention has been directed to understanding the cumulative stress survivors of IPV experience while residing in disadvantaged neighborhoods. Understanding how resource constraints and survivors' broader contextual environments may impact their mental health has important implications for women's future well-being. This dissertation comprises two separate but related longitudinal studies that

examined the extent to which these mechanisms impacted the mental health and overall quality of life of women who had experienced abuse over time.

Study 1, entitled *Understanding the Impact of Resource Constraints on the Mental Health and Well-Being of Survivors of Intimate Partner Violence Over Time,* was conducted to examine if women's difficulty obtaining requisite resources may partially be to blame for their compromised mental health and well-being. Study 2, *An Examination of the Impact of Neighborhood Factors on the Well-Being of Survivors of Intimate Partner Violence Over Time,* examined whether perceived neighborhood disorder impacted survivors' psychological well-being in addition to the abuse they experienced, and tested whether fear of victimization within the community was a mediating factor between women's perceived neighborhood disorder and their overall well-being. A final concluding chapter is presented to discuss how these studies together enhance our understanding of the ecological factors impacting survivors' psychological well-being and to summarize the broad implications of this research.

Chapter 2

STUDY 1: UNDERSTANDING THE IMPACT OF RESOURCE CONSTRAINTS ON THE MENTAL HEALTH AND WELL-BEING OF SURVIVORS OF INTIMATE PARTNER VIOLENCE OVER TIME

Overview of the Literature

Intimate partner violence (IPV) is among the most serious of social problems impacting women's lives in the U.S. today. It is estimated that 1.5 million women suffer the devastating consequences of IPV each year (Tjaden & Thoennes, 2000). The implications of IPV are significant and extensive, and for most women, extend far beyond sustained physical injuries. Abuse also has substantial negative implications for survivors' overall mental health and well-being (Campbell, 2002; Golding, 1999).

To date, limited research has explored the processes and various mechanisms through which abuse impacts women's well-being. While some explanatory mechanisms have been unveiled (e.g., cognitive appraisal and schemas, coping strategies, social support; Beeble, Bybee, Sullivan, & Adams, 2009; Calvete, Corral, & Estevez, 2008; Calvete, Estevez, & Corral, 2007), many of these studies have largely focused on qualities intrinsic to survivors (e.g., Calvete et al., 2007, 2008), thereby overlooking external, ecologically-based mechanisms. Additionally, most studies have been cross-sectional, precluding our ability to delineate the temporal ordering of events.

One historically overlooked, and particularly important factor to examine in accordance with the abuse-distress relationship is women's access to community resources, particularly the difficulties and constraints women experience when attempting to acquire resources. Previous research has demonstrated that access to resources has

important implications for survivors' mental health and well-being (e.g., Bybee & Sullivan, 2002); however, it still remains unclear how abuse impacts women's resource constraints, and how these resource constraints in turn relate to survivors' well-being over time. Therefore, the current study investigated whether women's difficulty obtaining resources is one such mechanism through which abuse impacts survivors' psychological well-being, using a longitudinal design with a community-based sample of women with abusive partners.

The Impact of Intimate Partner Violence on Survivors' Mental Health and Well-Being

An abundance of research exists examining the psychological well-being of survivors of IPV. Collectively this work demonstrates the serious and detrimental psychological impact of exposure to any and all forms of IPV (e.g., physical, sexual, and/or psychological abuse). Women experiencing abuse have been found to suffer a wide range of mental health impacts, including but not limited to depression, anxiety, post-traumatic stress disorder (PTSD), and suicidal ideation (Cascardi, O'Leary, & Schlee, 1999; Dutton, Kaltman, Goodman, Weinfurt, & Vankos, 2005; Golding, 1999; Helfrich, Fujiura, & Rutkowsli-Kmitta, 2008; Leiner, Compton, Houry, & Kaslow, 2008; Pico-Alfonso et al., 2006). Among the most common mental health consequences experienced by survivors are depression and PTSD (Campbell, 2002; Golding, 1999), and for some women these disorders co-occur (Cascardi et al., 1999; Nixon, Resick, & Nishith, 2004).

Rates of psychological distress and mental health disorders among women with abusive partners consistently far exceed comparative groups of non-abused women (Coker, Smith, Bethea, King, & McKeown, 2000; Houry, Kemball, Rhodes, & Kaslow,

2006; O'Campo, Woods, Jones, Dienemann, & Campbell, 2006; Theran, Sullivan, Bogat, & Stewart, 2006), and women in the general population (Cascardi et al., 1999; Golding, 1999; Helfrich et al., 2008). Survivors of IPV are estimated to be three to four times more likely than non-abused women to experience depression, suicidal ideation, and PTSD (Golding, 1999), with the concomitance of multiple forms of IPV, and extent and severity of exposure to abuse directly associated with the severity of mental health symptomatology (Campbell, Kub, Belknap, & Templin, 1997; Dienemann et al., 2000; Dutton et al., 2005; Golding, 1999; Houry et al., 2006; Pico-Alfonso et al., 2006).

Beyond specific mental health symptomatology or illness, some empirical evidence exists which suggests that IPV also has significant negative implications for women's overall quality of life (Adeodato, Carvalho, de Siqueira, & de Matos e Souza, 2005; Alsaker, Moen, & Kristoffersen, 2008; Leung, Leung, Ng, & Ho, 2005). For instance, when investigating life quality among a sample of 1,614 medical patients, Leung and colleagues (2005) found that women who experienced IPV had significantly lower scores across several life domains (physical and psychological well-being; social relationships and functioning; overall satisfaction with one's environment) when compared to non-abused women. However, to date, when examining the effects of IPV, researchers have almost exclusively focused on specific psychological symptomatology, largely overlooking the impact of IPV on women's broader well-being. For some survivors, abuse may not manifest itself explicitly as mental health symptomatology; rather, women may express more general discontentment with their lives. To gain more insight into the impact of abuse on women's lives, research must attend to both

psychological symptomatology as well as women's broader perceptions of their life quality.

While any psychological distress or illness, or diminished perceptions of life quality may pose significant difficulties and challenges to those affected, depression in its most severe state is among the most debilitating of mental health outcomes, and is associated with significant functional impairment (Kessler et al., 2003) and suicidal thoughts and behaviors (Houry, Kaslow, & Thompson, 2005; Kessler, Borges, & Walters, 1999). Several studies examining prevalence rates of depression among survivors have been conducted (e.g., Campbell et al., 1997; Cascardi et al., 1999; Nixon et al., 2004; O'Campo et al., 2006). While rates have been found to differ substantially depending upon sampling approach, measurement criteria, and overall methodology, they remain alarmingly high across all samples. In a recent study of 74 women in a domestic violence shelter, Helfrich and colleagues (2008) found that 51.4% of women met 12-month criteria for major depression, compared to only 2.4% of women in the general population. Similarly, in an extensive review of 18 studies investigating the impact of physical abuse on women's mental health, Golding (1999) found the mean prevalence rate of depression across all studies was 47.6%. Women who were physically battered were 3.80 times more likely to be depressed than were women who were not physically assaulted by their partners. However, many studies examining rates of depression and other concurrent or post-abuse mental health sequelae among survivors have only examined the effects of physical battering on women's mental health.

While the impact of physical abuse is paramount to our understanding of the etiology of survivors' mental health and well-being, other non-physical tactics commonly

used by assailants to terrorize or demoralize their partners must also be at the forefront of our investigations. Recently researchers have called attention to the need to examine the multidimensional nature of abuse and its impact on women's psychological well-being (Mechanic, Weaver, & Resick, 2008; O'Leary, 1999; Stark, 2007).

Historically, the impact of psychological abuse has been overlooked in the literature (O'Leary, 1999) despite women often rating this form of abuse as more damaging to their mental health than physical violence (Follingstad, Rutledge, Berg, Hause, & Polek, 1990). Several studies have found that psychological abuse uniquely impacts survivors' well-being (Dutton, Goodman, & Bennett, 1999; Sackett & Saunders, 1999; Marshall, 1999; Mechanic et al., 2008; cf. Campbell et al., 1997). For instance, investigating the impact of multiple forms of IPV (physical violence, sexual coercion, psychological abuse, and stalking) on depression among a sample of 413 recently-battered women from community-based programs, Mechanic and colleagues (2008) found that psychological abuse significantly predicted depression, over and above women's experiences of physical abuse, sexual abuse, and sustained injuries. When reversing the order of the predictors, physical and sexual abuse did not contribute to the prediction of depression, after accounting for psychological abuse.

In another study, Pico-Alfonso and colleagues (2006) compared depressive symptomatology among two groups of abused women (those experiencing both physical and psychological abuse, and those only experiencing psychological abuse) to a group of non-abused women. Incidence and severity of depressive symptomatology was significantly higher among abused women than non-abused women, as expected. However, no differences were found among the two groups of abused women, suggesting

that psychological abuse alone may be just as damaging to women's mental health as the co-occurrence of physical and psychological abuse. These findings speak to the importance of examining survivors' experiences of psychological abuse, in addition to physical violence, when attempting to understand their overall well-being.

To date, the majority of research investigating the relationship between IPV and psychological well-being has been cross-sectional. While cross-sectional research suggests that recency and continuity of abuse are particularly salient to changes in survivors' mental health (e.g., Bogat, Levendosky, Theran, von Eye, & Davidson, 2003; Bonomi et al., 2006), we must draw upon longitudinal research to guide our understanding of the long-term impact of abuse on women's lives, their quality of life, and on the development and manifestation of mental health symptomatology. There is a dearth of research investigating the impact of IPV on women's psychological well-being over time and results are somewhat equivocal. In some studies examining depression, as violence decreases over time, depression also decreases (e.g., Anderson, Saunders, Yoshihama, Bybee, & Sullivan, 2003; Campbell, J. & Soeken, 1999; Campbell, R., Sullivan, & Davidson 1995), while in others, depression remains steady, despite a drop in abuse (e.g., von Eye & Bogat, 2006).

To investigate this relationship, J. Campbell and Soeken (1999) interviewed a community sample of 141 physically battered women three times over 3.5 years, retaining 98 women for the final interview. Women who experienced abuse at all three time points had significantly higher depression scores at time three than women for whom the abuse stopped after the first or second interview. However, at time three, depression levels for women only exposed to abuse at times one or two rose to their

original level, signifying mild and moderate depression, despite the absence of recent abuse.

Similarly, R. Campbell and colleagues (1995) examined changes in depression at three time points (upon shelter exit, 10 weeks thereafter, and again 6 months later) among a sample of 139 women exiting a domestic violence shelter. For all women, depression significantly declined from shelter exit (when 83% of women were at least mildly depressed) to the 10-week follow-up (58%), and then remained steady through the 6-month follow-up (58%). Women for whom physical abuse continued at 10-week and 6-month follow-ups had significantly higher rates of depression, compared to women who were no longer experiencing violence, suggesting that depression is most acute at times of violence, and may lessen in intensity or completely subside when abuse stops. However, still a substantial percentage of women not physically abused at 10-week and 6-month follow-ups reported *at least* mild depressive symptomatology (50% and 49%, respectively). For some women still experiencing depressive symptomatology, in the absence of physical violence, it is possible that psychological abuse (not measured in this study) may have continued to exert an impact on women's well-being over time.

One study specifically examined how cessation of all abuse (physical, sexual, and psychological), versus some forms of abuse, impacts women's trajectories of depression over 2 years among a sample of 448 women who had either had police or court intervention (Kernic, Holt, Stoner, Wolf, & Rivara, 2003). The largest decline in depression over time was seen among women with a history of physical, sexual, and psychological abuse for whom all abuse stopped. Those women, for whom some abuse

continued, particularly psychological abuse, experienced less of a decline in depression over time.

Unlike the aforementioned studies, von Eye and Bogat (2006) found that, among a sample of parenting women, as violence decreased over time, depression did not. The authors concluded that earlier experiences of violence may in fact have long-lasting mental health implications, and that attention is needed to examine factors in addition to physical abuse that may impact the etiology of depression among survivors over time. When examining long-term depression trends among a sample of 94 sheltered women separated from their abusive partners, Anderson and colleagues (2003) also explored the impact of women's secondary stress levels upon shelter exit. They found that depression declined over time for women experiencing lower levels of violence and secondary stress (e.g., family responsibilities, income loss) at shelter-exit. However, among women experiencing high violence and stress at shelter-exit, depression remained stable over time or increased slightly.

Longitudinal investigations of the impact of abuse on survivors' quality of life are even more limited, despite quality of life having important long-term implications for survivors' safety (Bybee & Sullivan, 2002, 2005). In a nationally-based prospective study, Zlotnick, Johnson, and Kohn (2006) interviewed a representative sample of married and cohabiting women twice over 5 years. They found that experience of physical violence at Time 1 significantly predicted women's quality of life at Time 2, five years later; however, this analysis did not account for physical violence that had occurred after the initial time point, precluding our understanding of how ongoing or new abuse may impact women's broader life satisfaction. In another earlier study, using the

same community-based sample of women with abusive partners as the current study, Beeble and colleagues (2009) examined the collective impact of physical and psychological abuse on women's quality of life over two years. They found that initial levels of abuse were not predictive of quality of life over time; rather, change in psychological abuse relative to women's initial interview was predictive of change in quality of life. At times when women's psychological abuse was higher, their quality of life was lower, suggesting that abuse may have a more immediate impact on women's well-being.

These findings, taken together, suggest that while the abatement of abuse may largely alleviate the devastating, immediate mental health consequences experienced by survivors, residual impacts of abuse on mental health and well-being may remain over time for some women. It is important to recognize that cessation of one form of abuse does not necessarily mean all forms of abuse have stopped, and that some lasting mental health consequences may be the result of more subtle forms of abuse (e.g., psychological abuse). As recommended by von Eye and Bogat (2006), and employed by Anderson and colleagues (2003), it is also important to consider additional factors and stressors that may further explain, or perhaps, either alleviate or exacerbate women's psychological distress, as these other factors may be key elements in understanding the abuse-distress relationship.

Resource Constraints in the Lives of Women with Abusive Partners

One important factor to consider that may impact or partially explain the abuse-distress relationship for survivors is their access to community resources and supports. Research has found that assailants use a variety of strategies which may directly or

indirectly limit women's access to external resources, opportunities, and supports (Dobash & Dobash, 1998; Raphael, 1999; Riger & Staggs, 2004; Swanberg & Logan, 2005; Tjaden & Thoennes, 2000). Perpetrators employ a variety of tactics to dominate and control their partners, including physical threats, ridicule, jealousy, threatening to end their relationships, restricting women's activities and access to resources, and damaging women's property (Follingstad et al., 1990; Stark, 2007). These tactics of psychological abuse and coercive control create and exploit vulnerabilities among women, facilitate attachment and emotional dependency on their abusers, and wear down women's resistance to assailants' demands (Dutton & Goodman, 2005).

According to Dutton and Goodman (2005), women's ability to resist coercion is facilitated by, and in part, reliant upon access to tangible (e.g., economic resources, housing, transportation), social (e.g., social support), and personal resources (e.g., determination). The inverse relationship between abuse and access to resources has been supported both cross-sectionally and longitudinally (Bosch & Schumm, 2004; Bybee & Sullivan, 2002, 2005; Goodman, Dutton, Vankos, & Weinfurt, 2005; Sullivan & Bybee, 1999). For instance, among a sample of women recruited from a domestic violence shelter, Sullivan and colleagues found that access to community-based resources (e.g., housing, education, employment, health care, child care, social support, transportation) protected women from experiencing future abuse. In another longitudinal study of 406 African American help-seeking survivors, Goodman and colleagues (2005) found that a lack of material resources, specifically employment and independent residency, predicted revictimization; however, after accounting for social support and women's resistance strategies, material resources were no longer significant predictors of reabuse.

Given the protective nature of resources and supports in women's lives, depleting or restricting women's access to resources and opportunities allows assailants to maintain control, leaving their partners with few alternatives but to comply with their demands. The manipulative and controlling actions used by assailants have far-reaching, serious implications for survivors' immediate and future livelihood. Abusers often sabotage women's access to educational or employment opportunities either directly (e.g., preventing women from attending work or school) or indirectly (e.g., preventing women from being able to work because of injuries sustained from the abuse), and deprive women of access to additional economic resources, such as their own personal or family income (Adams, Sullivan, Bybee, & Greeson, 2008; Leone, Johnson, Cohan, & Lloyd, 2004; Ptacek, 1997; Raphael, 1996; Swanberg & Logan, 2005). Assailants may also directly isolate survivors from their friends and family (Goodkind, Gillum, Bybee, & Sullivan, 2003; Murphy & Cascardi, 1999), fostering further emotional dependency and leaving women without requsite support networks to cope with the devastating impacts of IPV.

While the direct actions of assailants are devastating enough to survivors, the implications of abuse extend much further, exacerbating the difficulty women experience in accessing resources they need to escape from abuse and to restore their physical and emotional well-being. For instance, restricting survivors' access to economic resources precludes women from meeting their financial obligations, often causing additional adversities. Insufficient access to food, unmet nutritional needs, restricted access to health care (Weinbaum et al., 2001), and loss of stable housing (Menard, 2001) are significant barriers to self-sufficiency for survivors of IPV. Additionally, as women attempt to leave

their abusive relationships the difficulties they face are often insurmountable. For example, the lack of affordable housing options available to survivors (Menard, 2001) may lead to homelessness (Browne, & Bassuk, 1997), or may force women to return to their abusive partners (Davies, Lyon, & Monti-Catania, 1998). Therefore, as a result of the abuse they experience, survivors may be restricted in their abilities to reach out to friends and family or professionals for help, find adequate housing for themselves and their children, obtain requisite medical and mental health services, and/or engage in educational or employment opportunities to enhance their skills (Dutton & Goodman, 2005; Lipsky & Caetano, 2007; Menard, 2001; Plichta & Falik, 2001).

Access to resources has been identified as an important correlate for individuals' overall well-being (Diener & Fujita, 1995). As such, loss of or difficulty obtaining requisite resources has been found to be associated with negative mental health sequelae and poor overall quality of life across a variety of populations (Casey et al., 2004; Hobfoll, Johnson, Ennis, & Jackson, 2003; Schumm, Hobfoll, & Keogh, 2004; Wells, Hobfoll, & Lavin, 1999). For instance, in a study investigating threatened or actual material resource loss (e.g., food, money, transportation, children's essentials) among inner-city women over nine months, Hobfoll and colleagues (2003) found that women who reported increased material loss over time had significantly higher depression scores at study follow-up than did women with stable levels of resources over time.

Resource constraints are a significant source of additional stress and compromised well-being for survivors of IPV (Bybee & Sullivan, 2002). To understand the potential connection between IPV, resource constraints, and deleterious mental health outcomes, I draw upon conservation of resources theory (COR; Hobfoll, 1988, 1989; Hobfoll & Lilly,

1993). According to COR, individuals strive to acquire, strengthen, and protect the resources they have in their lives, which enhances individuals' well-being. Resources are defined broadly as characteristics, conditions, or objects of value (Hobfoll, 1989) which are mobilized during times of stress to alleviate the negative impact of a stressor (Johnson, Palmieri, Jackson, & Hobfoll, 2007). Resources are vital to an individual's ability to cope with stress; therefore, when threatened or actual resource loss occurs, serious negative implications follow for the individual's psychological well-being. Hobfoll (1989) contends that environmental circumstances are often the cause of actual or threatened resource depletion. In addition, the unequal distribution of resources among individuals in society further exacerbates vulnerability for loss among those who have the fewest of resources (Dohrenwend, 1978). Loss or lack of resources sets in motion what Hobfoll refers to as 'loss spirals,' whereby individuals who lack resources or experience resource depletion then suffer distress, which in turn further exacerbates loss (Johnson et al., 2007).

Women with abusive partners suffer significant resource loss as a result of the demands imposed by their partners. Therefore, in the context of IPV, COR theory suggests that the negative mental health sequelae and poor quality of life of survivors may be due, in part, to the difficulty they have obtaining requisite resources, as a result of the abuse they have experienced. Any loss or hardship in obtaining necessary resources may be the direct result of the assailant wearing down women's resistance strategies (Dutton & Goodman, 2005), leaving women without the requisite resources to cope with the abuse they experience, and in turn causing women significant distress. According to

COR theory, the negative mental health implications for survivors would then cause further resource loss, starting a downward spiral (Johnson et al., 2007).

A paucity of research exists examining survivors' access to resources as an explanatory factor for their compromised mental health and well-being. In a recent study, Ford-Gilboe et al. (2009) tested whether the relationship between severity of abuse and mental health was mediated by access to personal (women's knowledge, skills, beliefs, and behaviors), social (emotional and tangible support, and social conflict), and economic (financial strain) resources and constraints cross-sectionally among a community-based sample of 309 abused women. Severity of IPV was only found to significantly relate to a reduction in economic resources, which mediated the relationship between abuse and mental health. An important limitation of this study was the wide range in time since women had left their abusive partners (3 - 40 months) at the time the study was conducted, given the hypothesized relationship between abuse and its impact on women's access to resources. Longitudinal research is needed to explore this relationship, emphasizing additional ecological factors that extend beyond the economic strain experienced by survivors.

The Current Study

The current study investigated whether difficulty obtaining resources served as a mechanism which partially explained, or mediated, the relationship between experience of physical and psychological abuse and depression and quality of life among a sample of recently abused women over time. The purpose of the current study was to expand our understanding of the processes through which IPV impacts women's mental health and well-being, by investigating variables that extend beyond the individual level of analysis

to consider ecologically-based contextual factors. Identification of women's difficulty obtaining resources as an explanatory factor of their mental health and well-being has important implications for future outreach, intervention, and service delivery.

A significant strength of this study, over prior research, is its ability to examine these relationships longitudinally, while separating the between-women effects (i.e., how women's experiences differ from one another across time) from the within-woman effects (i.e., how individual women's trajectories change over time, relative to their own past experiences). Simultaneously modeling within- and between-person effects allows for the examination of variables that may predict individuals' trajectories of change over time (Singer & Willet, 2003). In addition, this study attended to the broader well-being of survivors of IPV by examining quality of life as a consequence of abuse, in addition to depression. Quality of life is a construct warranting further investigation as researchers and interventionists strive to improve the lives of women with abusive partners.

As depicted in Figure 1, this study investigated whether the experiences of physical and psychological abuse threatened survivors' abilities to obtain requisite resources, and whether this, in turn, may have negatively impacted their psychological well-being. Specifically, the following over-arching research question was tested: *Does women's reported difficulty obtaining community resources partially mediate, or explain, the relationship between intimate partner violence and psychological well-being (depression and quality of life) over time?* As seen in Figure 1, this model allowed for the simultaneous examination of between-women and within-woman effects. The hypotheses that follow are divided so that the expected between-women and within-woman effects are distinguishable.

A) Between-Women Differences Predicting Change over Time

H1: Higher levels of baseline physical and psychological abuse will be associated with women's greater initial difficulty obtaining resources.

H2: Higher levels of initial difficulty obtaining resources will be associated with an increased trajectory in depression and decreased trajectory in quality of life over time.

H3: Higher levels of baseline physical and psychological abuse will be associated with an increased trajectory in depression and decreased trajectory in quality of life over time.

H4: The relationship between baseline levels of physical and psychological abuse and change in psychological well-being (depression and quality of life) over time will be partially mediated by women's initial difficulty obtaining resources.

B) Within-Woman Trajectories of Change over Time

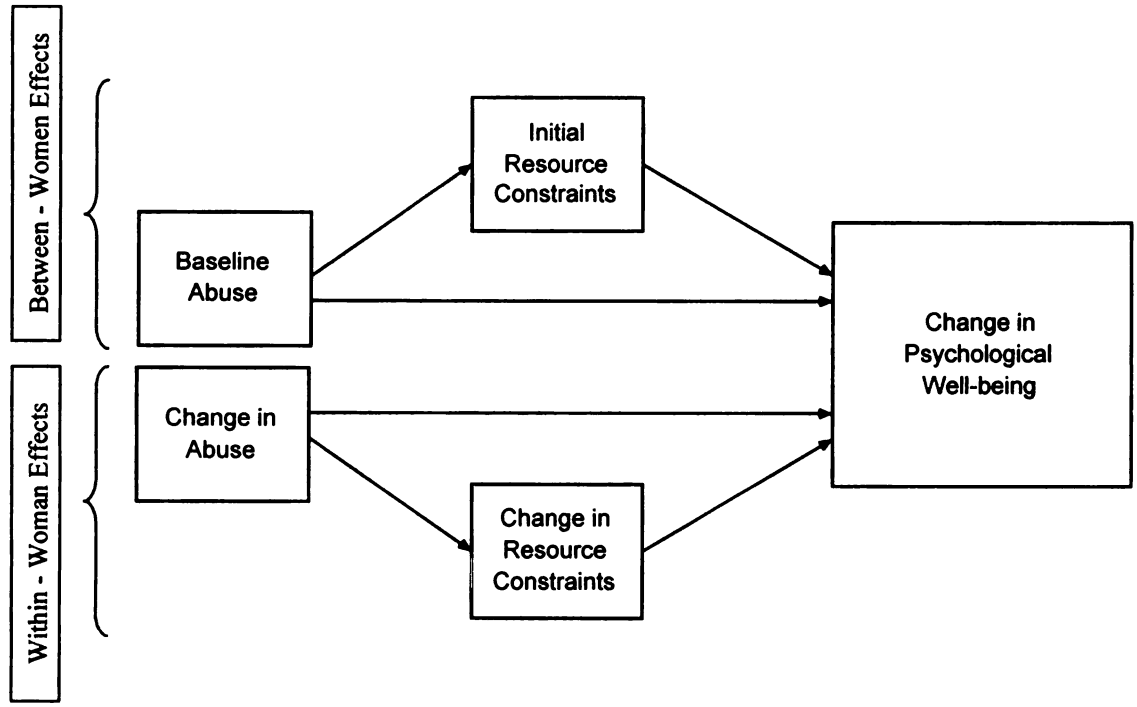
H5: Within-woman increases in physical and psychological abuse will be associated with increased difficulty obtaining resources over time.

H6: Within-woman increases in difficulty obtaining resources will be accompanied by increases in depression and decreases in quality of life over time.

H7: Within-woman increases in physical and psychological abuse will be accompanied by increases in depression and decreases in quality of life over time.

H8: The relationship between changes in physical and psychological abuse and psychological well-being (depression and quality of life) over time will be partially mediated by changes in difficulty obtaining resources over time.

Figure 1. A conceptual model depicting the mediating role of resource constraints on the relationship between intimate partner violence and psychological well-being over time.



Method

The current study utilized data from a larger longitudinal investigation of the lives of 160 battered women and their children over two years who were residing in a mid-sized Midwestern city. In this larger study an experimental design was employed to test the effectiveness of an intensive community-based advocacy intervention lasting four months. Families were randomly assigned to either receive advocacy services or a 'service as usual' condition. Women and their children, regardless of their placement in the experimental advocacy or control condition, were interviewed six times over two years for the larger study. However, because women's resource constraints were not examined during their first two interviews, the current study was limited to examining the experiences women reported during their last four interviews from the larger study.

Participants

The current study investigated the subsample of 138 of the 160 female survivors of IPV who participated in the first interview which inquired about the difficulties women experience obtaining community-based resources (8 months after their initial entry into the research study). All women who participated in the current study met several eligibility criteria set for the larger study. First, all women had experienced physical violence that was perpetrated by an intimate partner or ex-partner within the four months prior to their study involvement. Second, women had to agree to be randomly assigned to either the experimental or control condition and had to plan to stay in the surrounding area for the four months following their first, baseline interview. Finally, women had to have at least one child living with them between the ages of 5 and 12 who was also interested in participating in the larger study.

Procedure

Participants were recruited from one of three sources that serve women who had experienced recent violence by a current or former intimate partner, including: (a) a community-based agency providing short-term services and supports to survivors following a recent police response to a violent encounter (n = 59; 43%), (b) two community-based domestic violence programs providing residential and nonresidential services to women and their children (n = 40; 29%), or (c) the county prosecutor's personal protection order office (n = 39; 28%). Two research team members worked with the aforementioned agencies to recruit women into the study.

After discussing the study with research staff and agreeing to participate, women provided written informed consent. Baseline interviews were conducted with each woman within 2 to 3 weeks following recruitment. For several reasons, women recruited from residential shelter programs were not interviewed until they had exited the shelter. First, it was important to avoid interviewing families while they may have been in crisis. Second, the intervention was designed to help women and their children acquire requisite resources and supports in their 'naturally-occurring' environments to ensure that the resources would be sustainable over time, or able to be obtained independently, should the need arise again for women in the future. Next, it would have been difficult for advocates to work in the shelter setting, providing support to some women while withholding it from others. Finally, waiting until women exited the shelter minimized the risk of experimental contamination, had women residing in the shelter receiving advocacy services shared information and resources with other women who were in the control condition. All of the women recruited from residential programs had exited the

shelters within one week of being recruited, and had their baseline interviews within the subsequent two to three weeks.

Immediately following their baseline interviews, families were randomly assigned to either the experimental advocacy intervention (n = 59; 43%) or the control condition (n = 79; 57%), whereby families received 'services as usual' within the community. Interviewers were blind to which group families would be assigned. Within two weeks, families assigned to the experimental condition were provided a trained paraprofessional advocate who began assisting them in obtaining resources that women had identified would be helpful to their families.

The advocacy intervention. The advocacy intervention used a family-centered model which focuses on the strengths, competencies, and broader unmet needs of families (Dunst, Johanson, Trivette, & Hamby, 1991). According to Dunst and colleagues, this model of intervention is built upon a consumer-oriented foundation, whereby all service provision and resource allocation is solely based upon the needs identified by the families. Advocates in this context are viewed as paraprofessionals who serve as family agents to identify and procure requisite resources, while also assisting families to increase their capacity to build broader networks of support and resources for the future. Advocates worked with families on a number of areas such as legal assistance, housing, health care, child care, child support, education, employment, obtaining a restraining order, etc. Each advocate spent between 6 to 8 hours each week working with and on behalf of the family for a four month period.

Interviews and interviewer training. As part of the larger study, participants were interviewed six times over two years; as indicated, the baseline interview took place

shortly after recruitment, and the second interview occurred four months later, post-intervention; however, the first and second interviews were excluded from the current study as they did not ask about resource constraints. All subsequent interviews occurred 8, 12, 18, and 24 months after the baseline interview. The current study only utilized levels of abuse at *baseline* and data from the 8, 12, 18, and 24-month follow-up interviews, which are referred to as Time 1, 2, 3, and 4, respectively, hereafter.

All interviews were administered face-to-face, audio-taped, and conducted in a space determined to be safe, comfortable, convenient, and private for the women and their children. In most cases, interviews took place within the women's homes. Interviews across all four time points ranged from 30 minutes to 4.75 hours (M = 104.67 minutes; SD = 34.75). All women received $20 for their baseline interview, $60 for the post-intervention interview (both of which were not included in the current study), $70 for their 8 month follow-up (Time 1) interview, $80 for their 12 month follow-up (Time 2) interview, $90 for their 18 month (Time 3) follow-up interview, and $100 for their 24 month (Time 4) follow-up interview, as remuneration.

Interviews were conducted by female undergraduate students attending a large Midwestern university who received college credit for their work on this project. Students underwent extensive training over an 8-week period, learning about the theoretical and applied tenets of conducting community-based research, particularly when working with families affected by IPV. Training provided interviewers with the skills needed (e.g., developing rapport, empathetic response) to effectively handle a variety of issues that they could have encountered during their interviews. Mock interviews were conducted between students, until response coding reached at least 95% agreement.

Supervisors closely monitored student interviewers in 3-hour weekly student meetings, and by listening to each audio-taped interview. Interviews were also randomly assigned to the pool of student interviewers to be checked for consistency in coding over time.

Retention strategies. Relative to the full sample from the larger study, retention rates at Times 1, 2, 3, and 4 were 86%, 88%, 88%, and 86%, respectively. Women who missed one or more interviews were not found to differ by demographic characteristics, or by level of abuse experienced.

Several strategies were employed over the course of this study to maximize participant retention over time. Specifically, a three-phase protocol was used: (a) *Phase I* - setting the stage for future contact, (b) *Phase II* - utilizing participant-oriented strategies to locate participants, and (c) *Phase III* - reaching out to social and community-oriented networks to locate participants (Sullivan, Rumptz, Campbell, Eby, & Davidson, 1996).

Phase I occurred at the time of the baseline interview, and involved several strategies to lay the groundwork for later success in contacting participants. First, emphasis was placed on building trust with participants by extensively informing women about the purpose of the study, and the mechanisms in place to ensure their confidentiality. During phase I interviewers collected detailed information about the most effective strategies to use to contact them (e.g., the best days and times to call, unsafe days and times to call, alternative contacts). Interviewees provided names, addresses, and phone numbers of several people (e.g., family members, friends, neighbors, employers) or government agencies providing individual or family assistance (e.g., local social service office) who would likely know how to contact them for subsequent interviews, should the research team have difficulties. For each alternative contact provided, women

signed a Release of Information Form that allowed these individuals to provide information about women's whereabouts to the research team. Additionally, women were provided with an information card containing study contact information, the date and time of their next interview, the amount women would be paid for their next interview, and a request to follow up with project staff if they were to move.

Phase II involved utilizing participant-oriented strategies to contact women. Often, the strategies employed in this phase differed depending upon women's preferences and safety needs. However, generally this phase began with attempting to telephone women, or to visit their residences when women did not have phones. Unsuccessful attempts to contact women with the aforementioned strategies were followed up with a mailed letter to their last known address, or a phone call or letter to their employer. When all *Phase II* efforts were unsuccessful, *Phase III* strategies were implemented. *Phase III* involved utilizing phone calls, in-person visits, and/or letters to the alternative contacts (both personal contacts and governmental agencies) provided by the women. To ensure participants' safety and confidentiality, no reference was made to the nature of the research study, nor the reason for participant involvement when contacting the alternative sources provided by the women.

Participant Demographics

At Time 1, women ranged from 22 to 49 years of age ($M = 32.74$; $SD = 6.02$). Women were somewhat racially diverse, with slightly fewer than half identifying as non-Hispanic White ($n = 64$; 46%), more than one third as African American ($n = 49$; 36%), and the remaining women as multiracial ($n = 11$; 8%), Hispanic/Latina ($n = 10$; 7%), Native American ($n = 2$; 1%), or Sudanese ($n = 1$; < 1%). One woman did not disclose

her racial/ethnic identity (< 1%). Women reported having between zero and eight of their children residing with them in their homes when their Time 1 interview took place (M = 2.72; SD = 1.32).

Women's educational levels varied tremendously at Time 1. Nearly 19% (n = 26) had not yet completed high school, 30% (n = 42) had completed high school or trade school, 38% (n = 52) had attended college, and the remaining 13% (n = 18) had earned their associates or bachelors degrees. Nearly 12% (n = 16) of all women reported that they were attending school at the time of their interview to further their education.

More than half of the women (n = 85; 62%) were employed when their Time 1 interview took place. Women's reported monthly family income ranged from $563 to $4,400, with a mean income of $1,884 ($SD$ = $879). Women reported that their family income supported between two and ten people (M = 4.04; SD = 1.40). Nearly three-quarters of the women in this sample (n = 100; 73%) received some form of governmental assistance (e.g., welfare, food stamps, SSI/SSD).

Measures

Control variables. Several variables were statistically controlled for in this study, including the experimental condition to which women were assigned, women's involvement with their assailant(s), women's level of education, employment status, adjusted monthly income, and race. Due to the nature of the advocacy intervention, it was necessary to control for condition, as some women in the advocacy group post-intervention may have been more knowledgeable or equipped in obtaining requisite resources than women in the control group. In addition, women's involvement with their assailants varied over the course of the study; some women continued their relationships

over time while for others, their involvement subsided completely or fluctuated over time. Therefore, variation in women's involvement with their assailants was also controlled. A dichotomous indicator of involvement with the assailant was derived using items, such as "What is your relationship now?" and "Did you end your relationship in the last 4 months or before that?"

In addition, it was important to control for several demographic characteristics (i.e., education, employment status, income, and race) which often relate to the variables under study, particularly women's well-being and resource constraints. Women's level of education was assessed using three dummy codes: (a) less than high school, (b) high school or trade school, and (c) some college and above, which served as the reference category to which the other groups were compared. Employment status was represented with a dichotomous indicator of employment (part or full-time) versus no employment. Women's average monthly income was adjusted to account for the number of individuals this income supported, and finally, race was represented by a dichotomous variable comparing non-Hispanic Whites to all remaining racial groups.

Psychological abuse. Psychological abuse was assessed using the short version of the Index of Psychological Abuse scale (IPA), developed by Sullivan, Tan, Basta, Rumptz, and Davidson (1992). This scale contains 24 items that measure the extent to which assailants have emotionally or psychologically abused their partners. The original 33-item version was modified by the original authors and shortened to 24 items following psychometric evaluation. Women reported the frequency of psychological abuse they experienced by their partners or ex-partners in the four months prior to their baseline interview and in between each interview. Sample items included, "How often has he

accused you of having or wanting other sexual relationships?" "How often has he tried to humiliate you?" and "How often has he broken or destroyed something important to you?" Responses were based on a 4-point Likert-type scale (1 = *Never* to 4 = *Often*). All items were averaged to produce scale scores. Cronbach's alpha across all time points ranged from .89 to .95.

Physical abuse. Physical partner violence was measured using a 24-item, modified version of the Conflict Tactics Scale (CTS; Straus, 1979). The CTS is among the most widely used measures to assess IPV and has been shown to be valid and reliable across multiple samples (e.g., Lucente, Fals-Stewart, Richards, & Goscha, 2001). Women were asked to report the frequency with which various types of physical abuse had been perpetrated against them by their partners or ex-partners in the four months prior to their baseline interview and in between each interview. Women reported how frequently each of the forms of physical abuse occurred on a 7-point Likert-type scale, with scores ranging from 1 (*never)* to 7 (*more than four times a week*). Women were asked questions such as, "How often in the last four months has he pushed or shoved you?" "How often in the last four months has he thrown something at you?" and "How often in the last four months has he choked or strangled you?" Women's responses were averaged to compute scale scores. Cronbach's alpha across all time points ranged from .86 to .95.

Depression. Depression was measured using the Center for Epidemiological Studies-Depression Scale (CES-D; Radloff, 1977), a 20-item self-report measure used to detect psychological distress in the general population. Women were asked to report the extent to which they had experienced a range of depressive symptoms during the week prior to each of their interviews. Sample items include, "I felt like everything I did was an

effort," "I felt hopeful about the future," and "I had crying spells." The occurrence of symptomatology was measured on a 4-point Likert-type scale, with 1 representing *Rarely or Never* and 4 representing *Most or All the Time*. Several items were reverse-scored and then all items were averaged to compute a scale score. Cronbach's alpha across all time points ranged from .91 to .93.

Quality of life. Overall well-being was measured using a nine-item scale adapted from the Perceived Quality of Life scale originally developed by Andrews and Whitney (1976). This scale is intended to subjectively measure global life quality and well-being. Women were asked to report how they were feeling overall during the time period prior to each interview on questions such as, "How do you feel about what you are accomplishing in your life?" "How do you feel about the way you spend your spare time?" and "In general, how do you feel about yourself?" Women responded to each item with their reported level of satisfaction, on a 7-point Likert-type scale (1 = *Terrible* to 7 = *Extremely Pleased*). Women's responses were averaged to produce scale scores. Cronbach's alpha across all time points ranged from .89 to .92.

Resource constraints. Women's perceived difficulties in acquiring requisite resources to address their needs was measured using the Difficulty Obtaining Resources scale developed by Sullivan and colleagues and used in prior work with women with abusive partners (Bybee & Sullivan, 2002, 2005; Sullivan & Bybee, 1999). This 13-item measure assesses women's difficulties acquiring resources across multiple domains (e.g., housing, employment, education, child care, counseling, transportation, medical care), and the perceived difficulties women would expect to encounter if they had not attempted to obtain resources in a given domain since their prior interview. Sample items include,

"How much of a problem has dealing with child care or babysitting been for you in the last 4 months?" "How much of a problem was getting health care for your child (ren)?" and "How much of a problem was it to get a job?" Women responded on a 4-point Likert-type scale, ranging from 1 *(not a problem at all)* to 4 *(very much a problem)*. Cronbach's alpha ranged from .74 to .77 across all time points.

Data Analysis

Two-level multilevel models were run using HLM software (Raudenbush, Bryk, & Congdon, 2005) to examine the longitudinal relationships among physical and psychological abuse, resource constraints, and each of two outcome variables, quality of life and depression. Repeated measurements (i.e., time) were modeled at level one, and were nested within participants, modeled at level two.

Multilevel modeling (MLM) offers advantages over other approaches to longitudinal data analysis (e.g., repeated measures ANOVA), as it allows for differential time intervals between measurement points, as in the current study, and offers flexibility in handling missing cases due to variability in participant retention over time (Singer & Willlet, 2003; Snidjers, 1996). MLM is capable of using any available data across all time points at level one to model change patterns (Luke, 2004); albeit data at level two must be complete (Heck & Thomas, 2000). Therefore prior to running analyses, race was imputed for one woman using the expectation-maximization algorithm in SPSS, which is an iterative approach used to produce maximum likelihood estimates for missing data based on available data (Allison, 2002).

MLM was used to examine both between-women effects (i.e., how women may differ from one another) and within-woman effects (i.e., how women may change over

time relative to their own past experiences). Specifically the following effects were examined in this study: (a) between-women associations of baseline abuse and Time 1 resource constraints and Time 1 depression and quality of life scores, (b) between-women effects of baseline abuse and Time 1 resource constraints on changes in women's depression and quality of life over time, and (c) within-woman effects of change in abuse and resource constraints on changes in depression and quality of life over time.

To assess within-woman effects, Singer and Willet (2003) recommend centering time-varying covariates, producing deviation scores to reflect the extent of change women report, relative to a meaningful constant, such as the score from the earliest time point available for each measure. Deviation scores were computed by subtracting each woman's baseline physical and psychological abuse scores from her scores at each of the subsequent time points. Deviation scores reflecting the extent of change in women's difficulty obtaining resources were computed by subtracting women's Time 1 interview scores from their scores at each of the three subsequent time points. The earliest possible time point for which each measure was available served as an appropriate benchmark from which to compare subsequent change, because these time points were closest to when women experienced the most severe physical violence.

Full maximum likelihood estimation (MLE) was used for all analyses to estimate model parameters to allow for statistical comparisons between sequentially nested models. MLE permits the use of the chi-square difference test to determine if the addition of each predictor variable significantly improves the variance accounted for in the outcome variables. All statistical tests used robust standard errors to minimize the influence of extreme scores on results.

Initially, for all models, intercept (Time 1) and slope terms (trajectories of change over time) for quality of life and depression were estimated as random effects, allowed to vary from woman to woman. However, there was no significant (or trend level) variation from woman to woman in the slope of depression over time, and therefore in all subsequent models predicting depression the slope of time was fixed. Due to the nature of the sample recruitment criteria (having experienced physical violence prior to their study involvement) and many women's initial intentions to discontinue their involvement with their assailant(s), the effects of abuse and resource constraints were assumed to be similar across women and were fixed (i.e., not allowed to vary over time).

Four sequentially nested models were run for each outcome variable. First, unconditional models, including only intercept and slope terms, were run to assess variation in the dependent variables, QOL and depression over time, while controlling for experimental condition at level two. In the second model, all control variables were added, with level of education, employment status, and women's adjusted monthly income modeled at level one (modeled as time-varying covariates), and race modeled at level two. Next, physical and psychological abuse and women's involvement with their assailants (as a control variable at level one) were added to the overall models. Finally, women's difficulty obtaining resources was added to each of the final models.

Following this, tests for mediation were conducted. A mediator, as defined by Baron and Kenny (1986), is an additional variable through which an independent variable impacts a dependent variable. To test for mediation, the product of coefficients method recommended by MacKinnon, Lockwood, Hoffman, West, and Sheets (2002) was used. Using this method, two regression equations were run, one which regressed the mediator

on the independent variable, and the latter which regressed the dependent variable on the mediator and the independent variable. A Sobel test (Sobel, 1982) was then conducted using the unstandardized coefficients and standard errors from these regression analyses to determine if the mediated or indirect effects were statistically significant. Full mediation was characterized by the absence of a direct association between the independent and dependent variables, after accounting for the mediator; partial mediation was characterized by a significant association between the independent and dependent variables, after accounting for the mediator; and an indirect effect was characterized by the absence of a direct association between the independent and dependent variables, prior to the inclusion of the mediator in the model (Holmbeck, 1997).

Results

In comparison to women's average scores at baseline, experiences of physical and psychological abuse were lower at each follow-up time point. Similarly, perceptions of difficulty obtaining community-based resources were also lower at all time points, when compared to scores at Time 1. Women's average depression scores were also slightly lower at all three time points following Time 1, and women's quality of life scores were slightly higher at each follow-up time point. The means and standard deviations for all independent variables, dependent variables, and the hypothesized mediator, difficulty obtaining resources, are presented in Table 1, and descriptive statistics and frequencies for time-varying control variables are presented in Table 2. Results of the four sequentially nested models are presented separately for depression (in Tables 3 and 4) and quality of life (in Tables 5 and 6). Specifically, model fixed effects are presented in Tables 3 and 5, and random effects are in Tables 4 and 6.

Table 1

Study 1 Variable Means and Standard Deviations across All Time Points

Model Variables	Time 1 (N = 138)		Time 2 (n = 135)		Time 3 (n = 132)		Time 4 (n = 127)	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Psychological abuse [a]	2.47	0.59	1.63	0.65	1.69	0.63	1.56	0.55
Physical abuse [a]	1.73	0.61	1.12	0.35	1.15	0.43	1.09	0.20
Difficulty obtaining resources	2.03	0.51	1.97	0.58	2.00	0.55	1.95	0.55
Depression	2.04	0.59	2.03	0.67	2.00	0.63	1.94	0.62
Quality of life	4.95	1.03	5.00	1.13	4.98	1.13	5.02	1.05
Deviated psychological abuse [b]	0.00	0.00	-0.84	0.73	-0.78	0.70	-0.91	0.75
Deviated physical abuse [b]	0.00	0.00	-0.62	0.67	-0.57	0.61	-0.65	0.61
Deviated difficulty obtaining resources [b]	0.00	0.00	-0.06	0.44	-0.04	0.45	-0.07	0.44

[a] Time 1 means and standard deviations for psychological and physical abuse scores represent baseline values.

[b] Deviation scores reflect within-woman variation relative to baseline for physical and psychological abuse, and relative to Time 1 for difficulty obtaining resources. Mean deviation scores reflect the average change in each variable from the time point from which each was deviated.

Table 2

Study 1 Descriptive Statistics and Frequencies for Control Variables across All Time Points

Model Variables	Time 1 (N = 138)		Time 2 (n = 135)		Time 3 (n = 132)		Time 4 (n = 127)	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Adjusted monthly income	509.31	293.74	524.19	329.72	500.87	327.06	558.85	406.87
	n	%	*n*	%	*n*	%	*n*	%
Employment [a]								
Part- or full-time	104	75.36	95	70.37	94	71.21	91	71.65
No employment	34	24.64	40	29.63	38	28.79	36	28.35
Education [a]								
Less than high school	26	18.84	23	17.04	23	17.42	21	16.54
High school/trade school	42	30.44	42	31.11	39	29.55	40	31.50
Some college and above	70	50.73	70	51.85	70	53.03	66	51.97
Involvement with Assailant [a]								
Yes	31	22.46	33	24.44	29	21.97	30	23.62
No	106	76.81	102	75.56	103	78.03	94	74.02

[a] Some percentages may not sum to 100% due to missing data or rounding error.

Predicting Depression

The unconditional model. An initial model was run containing intercept and slope terms, both of which were estimated as random effects. There was no significant variation from woman to woman in the slope of depression over time; therefore, the slope term was fixed (in this model and in all subsequent models) which did not significantly change model fit ($LR\,\chi^2$ (2) = .01, *ns*). On average, across all women, no linear change in depression was detected over time (γ = -.003, *ns*), while controlling for the effect of the experimental condition on baseline depression (γ = .078, *ns*) and change in depression over time (γ = -.005, *ns*). Therefore, a quadratic term was added to the model to assess for non-linear change in depression, and this effect was also non-significant.

Control variables model. Adding women's race at level two and adjusted monthly income, employment status, and level of education at level one marginally improved model fit over the unconditional model ($LR\,\chi^2$ (6) = 11.83, p = .07). When controlling for all other predictors, race was unrelated to Time 1 depression (γ = .062, *ns*) or to change in depression over time (γ = -.004, *ns*) in this model and in all subsequent models. Within-woman variation in income (γ = .000, *ns*), education (less than high school = γ = .163, *ns*; high school or trade school = γ = .025, *ns*), and employment status (γ = -.060, *ns*) was unrelated to changes in women's depression over time in this model and in all models hereafter.

Abuse model. The addition of abuse and women's involvement with their assailants significantly improved model fit over the control variables model ($LR\,\chi^2$ (7) = 30.62, $p < .001$). When controlling for experimental condition and women's demographics, neither baseline physical (γ = .164, p = .07) nor psychological abuse (γ =

.055, *ns*) significantly predicted Time 1 depression; however, the effect of physical abuse approached statistical significance. Baseline physical (γ = .000, *ns*) and psychological abuse (γ = .005, *ns*) were also unrelated to change in depression over time. Within-woman change in physical abuse was unrelated to change in depression over time (γ = .060, *ns*). However, change in psychological abuse was positively related to change in depression ($p < .01$); on average, a 1-unit increase in psychological abuse, relative to baseline, was associated with a .129-unit increase in depression. Variation in women's involvement with their assailants was unrelated to change in depression over time in this model and in the subsequent model (γ = -.008, *ns*).

Difficulty obtaining resources model. The addition of difficulty obtaining resources significantly improved model fit, over the abuse model, with $LR\,\chi^2(3) = 62.04$, $p < .001$. While controlling for all aforementioned predictors, between-women effects of variability in Time 1 difficulty obtaining resources was positively associated with Time 1 depression ($p < .001$), but was unrelated to change in depression over time (γ = -.002, *ns*). At Time 1, a 1-unit increase in perceived difficulty was associated with a .543-unit increase in depression. Within-woman variation in difficulty obtaining resources predicted change in depression over time ($p < .001$); on average, a 1-unit increase in perceptions of difficulty obtaining resources, relative to Time 1, was associated with a .338-unit increase in depression.

Testing difficulty obtaining resources as a mediator. Time 1 perceptions of difficulty obtaining resources was not found to mediate the relationship between physical abuse at baseline and depression at Time 1 (γ = .055, *ns*); however, a trend-level indirect effect was detected between baseline psychological abuse and Time 1 depression through

Time 1 difficulty obtaining resources (indirect $\gamma = .070, p = .09$). Time 1 difficulty obtaining resources did not mediate the relationship between baseline levels of physical ($\gamma = -.000$, *ns*) or psychological abuse ($\gamma = -.000$, *ns*) and change in depression over time. While within-woman variation in difficulty obtaining resources did not mediate the relationship between changes in physical abuse and depression over time ($\gamma = .002$, *ns*), the time-varying effects of difficulty obtaining resources fully mediated the relationship between changes in psychological abuse and depression over time ($\gamma = .048, p < .01$). That is, the prior direct significant relationship between within-woman variation in psychological abuse and change in depression over time became non-significant after the addition of the time-varying effect of difficulty obtaining resources to the model.

Predicting Quality of Life

The unconditional model. An unconditional model containing random intercept and slope terms was run. The random effect of the slope for time, assessing variation from woman to woman in change in quality of life over time, was marginally significant ($p = .08$); therefore, this random effect was retained in all subsequent models. However, on average, across all women, no significant linear change in quality of life was detected over time ($\gamma = .005$, *ns*), when controlling for the effects of experimental condition on Time 1 quality of life ($\gamma = -.024$, *ns*) and on change in quality of life over time ($\gamma = -.006$, *ns*), which were not significant in this model or any model hereafter. A quadratic term was added to the model to assess for non-linearity in quality of life over time; this effect was not significant and therefore not included in subsequent models.

Table 3

Study 1 Fixed Effects across All Sequentially Nested Models Predicting Depression

Fixed Effects	Unconditional		Controls		Abuse		Difficulty Obtaining Resources	
	γ	*SE*	γ	*SE*	γ	*SE*	γ	*SE*
Between-women effects on Time 1 depression								
Average (intercept)	2.006***	.065	1.990***	.106	2.070***	.109	2.051***	.097
Condition	.078	.098	.070	.097	.073	.095	.025	.084
Race			.062	.099	.048	.103	.051	.091
Baseline psychological abuse					.055	.096	-.007	.087
Baseline physical abuse					.164 ^{t}	.089	.105	.076
Time 1 difficulty obtaining resources							.543***	.077
Between-women effects on the linear slope of depression								
Average (linear slope over time)	-.003	.003	-.002	.004	.006	.005	.003	.004
Condition	-.005	.005	-.004	.005	-.004	.005	-.003	.005
Race			-.004	.005	-.004	.005	-.002	.005
Baseline psychological abuse					.005	.005	.004	.005
Baseline physical abuse					.000	.006	.000	.005
Time 1 difficulty obtaining resources							-.002	.005
Within-woman effects on change in depression over time								
Employment status			-.060	.058	-.072	.057	-.074	.057
Adjusted monthly income			.000	.000	.000	.000	.000	.000
Education: Less than high school			.163	.106	.098	.105	.176 ^{t}	.097
Education: High school or trade school			.025	.075	.011	.077	.078	.076
Involvement with assailant					-.008	.067	-.022	.060
Psychological abuse					.129**	.044	.076 ^{t}	.045
Physical abuse					.060	.070	.069	.067
Difficulty obtaining resources							.338***	.064

Note. N = 532 observations at Level 1; N = 138 participants at Level 2; ^{t} $p < .10$, ** $p < .01$, *** $p < .001$.

Table 4

Study 1 Random Effects and Model Comparisons across All Sequentially Nested Models Predicting Depression

	Unconditional	Controls	Abuse	Difficulty Obtaining Resources
Random Effects	Variance	Variance	Variance	Variance
Intercept (baseline)	.249 ***	.249 ***	.225 ***	.161 ***
Level 1 residual variance	.142 --	.139 --	.134 --	.126 --
Model Comparisons				
LR Chi-square difference test relative to prior model	--	11.834 ^{t}	30.619 ***	62.037 ***

Note. N = 532 observations at Level 1; N = 138 participants at Level 2; ^{t} $p < .10$, *** $p < .001$.

Control variables model. The addition of women's race at level two and adjusted monthly income, employment status, and level of education at level one did not significantly improve model fit over the unconditional model, when predicting quality of life ($LR\ \chi^2$ (6) = 9.26, *ns*). When controlling for all other predictors, race was not related to women's quality of life at baseline (γ = -.039, *ns*) nor to change in quality of life over time (γ = .001, *ns*) in this model or in all subsequent models. Within-woman changes in employment (γ = .164, p = .09), education (less than high school = γ = .166, *ns;* high school or trade school = γ = .116, *ns*) and adjusted monthly income (γ = .000, *ns*) were unrelated to changes in women's quality of life in this model, although the effect of change in women's employment status approached statistical significance levels.

Abuse model. The addition of abuse and women's involvement with their assailants significantly improved model fit, over the control variables model ($LR\ \chi^2$ (7) = 57.64, $p < .001$). When controlling for condition and all aforementioned demographic variables, baseline levels of physical abuse were unrelated to Time 1 quality of life (γ = -.190, *ns*), and the effect of baseline psychological abuse on Time 1 quality of life approached statistical significance (γ = -.310, p = .06). Between-women effects in baseline physical abuse predicted change in quality of life over time ($p < .05$); a 1-unit higher physical abuse score was associated with a .027-unit lower quality of life score. The effect of baseline psychological abuse on change in quality of life was not significant (γ = .006, *ns*). Within-woman change in psychological abuse was associated with change in quality of life over time ($p < .05$); on average, a 1-unit increase in psychological abuse, relative to baseline, was related to a .193-unit decline in quality of life. Change in physical abuse was unrelated to change in quality of life over time (γ = -.099, *ns*).

Within-woman change in involvement with the assailant was unrelated to change in quality of life over time in this model (γ = -.113, *ns*) and in the following model.

Difficulty obtaining resources model. The addition of difficulty obtaining resources significantly improved model fit, over the abuse model, with $LR\ \chi^2$ (3) = 109.12, $p < .001$. When controlling for all the aforementioned predictors, women's reported Time 1 difficulty obtaining resources was significantly associated with Time 1 quality of life ($p < .001$), but was unrelated to change in quality of life over time (γ = .005, *ns*). At Time 1, on average, a 1-unit higher difficulty obtaining resource score was associated with a 1.125-unit lower quality of life score. Within-woman variability in difficulty obtaining resources was significantly associated with change in quality of life; on average, a 1-unit increase in difficulty obtaining resources, relative to Time 1, was associated with a .716-unit decrease in women's quality of life ($p < .001$).

Testing difficulty obtaining resources as a mediator. Time 1 difficulty obtaining resources did not mediate the relationship between baseline physical abuse and Time 1 quality of life (γ = -.114, *ns*); however, there was a trend level indirect effect detected between baseline psychological abuse and Time 1 quality of life through Time 1 difficulty obtaining resources (indirect γ = -.145, p = .09). Time 1 resource constraints did not mediate the relationship between baseline physical (γ = .001, *ns*) or psychological abuse (γ = .001, *ns*) and change in quality of life over time. Although the time-varying effects of difficulty obtaining resources did not mediate the relationship between change in physical abuse and quality of life over time (γ = -.004, *ns*), within-woman variation in perceived difficulty obtaining resources fully mediated the relationship between time-varying psychological abuse and change in quality of life over time (γ = -.103, $p < .001$).

Table 5

Study 1 Fixed Effects across All Sequentially Nested Models Predicting Quality of Life

Fixed Effects	Unconditional		Controls		Abuse		Difficulty Obtaining Resources	
	γ	*SE*	γ	*SE*	γ	*SE*	γ	*SE*
Between-women effects on Time 1 quality of life								
Average (intercept)	4.987***	.114	4.815***	.177	4.735***	.174	4.764***	.140
Condition	-.024	.174	-.014	.170	.014	.166	.115	.139
Race			-.039	.169	-.075	.170	-.078	.145
Baseline psychological abuse					-.310 ^{t}	.161	-.184	.147
Baseline physical abuse					-.190	.172	-.067	.139
Time 1 difficulty obtaining resources							-1.125***	.113
Between-women effects on the linear slope of quality of life								
Average (linear slope over time)	.005	.005	.005	.008	-.010	.008	-.004	.008
Condition	-.006	.009	-.006	.009	-.008	.009	-.011	.009
Race			.001	.009	.007	.008	.002	.008
Baseline psychological abuse					.006	.011	.008	.010
Baseline physical abuse					-.027*	.013	-.026*	.012
Time 1 difficulty obtaining resources							.005	.009
Within-woman effects on change in quality of life								
Employment status			.164 ^{t}	.097	.160 ^{t}	.092	.177*	.079
Adjusted monthly income			.000	.000	.000	.000	-.000	.000
Education: Less than high school			.166	.186	.326 ^{t}	.170	.150	.144
Education: High school or trade school			.116	.122	.158	.108	.033	.094
Involvement with assailant					-.113	.126	-.117	.114
Psychological abuse					-.193*	.077	-.093	.076
Physical abuse					-.099	.133	-.107	.125
Difficulty obtaining resources							-.716***	.111

Note. N = 532 observations at Level 1; N = 138 participants at Level 2; $^{t}p < .10$, * $p < .05$, *** $p < .001$.

Table 6

Study 1 Random Effects and Model Comparisons across All Sequentially Nested Models Predicting Quality of Life

	Unconditional	Controls	Abuse	Difficulty Obtaining Resources
Random Effects	Variance	Variance	Variance	Variance
Intercept (baseline)	.814 ***	.769 ***	.697 ***	.447 ***
Time slope (linear)	.000 t	.000	.000 *	.000 *
Level 1 residual variance	.324 --	.327 --	.299 --	.261 --
Model Comparisons				
LR Chi-square difference test relative to prior model	--	9.263	57.639 ***	109.120 ***

Note. $N = 532$ observations at Level 1; $N = 138$ participants at Level 2; $^{t}p < .10$, $*p < .05$, $***p < .001$.

Discussion

This study examined the relationship between IPV, resource constraints, and women's psychological well-being over time. In an effort to better understand the processes through which abuse impacts women's psychological well-being, resource constraints was examined as a partial explanatory factor of survivors' compromised mental health and quality of life. The results provide evidence to support prior research concerning the negative relationship between IPV and psychological well-being, and expand upon the existing literature by broadening our understanding of one of the many mechanisms through which abuse contributes to the development of pernicious psychological outcomes.

When examining the long-term effects of abuse on well-being, results revealed that survivors' experiences of physical and psychological abuse at baseline were unrelated to changes in depression over time. Abuse appears to have relatively short-term effects on women's trajectories of depression. Generally, when abuse subsides, depressive symptomatology also subsides, a finding congruent with several prior studies examining women's depression longitudinally (Anderson et al., 2003; Campbell, J. & Soeken, 1999; Campbell, R. et al., 1995). Interestingly, however, earlier experiences of physical abuse seem to exert a long-term impact on women's quality of life. It is possible that another intervening variable may be at play here. For instance, severe physical abuse that women endure may give rise to significant long-term injuries, which in turn may affect women's quality of life over time, as injuries may preclude women from living the kind of life they had hoped for and engaging in the type of activities they value and enjoy.

In addition to exploring the long-term effects of baseline physical and psychological abuse on well-being, time-varying effects were also examined. Ongoing physical and psychological abuse were not found to uniquely predict women's quality of life or depression, as hypothesized. Rather, when both physical and psychological abuse were included as predictors, only psychological abuse continued to exert an impact on women's psychological well-being over the course of the study. At times when psychological abuse was high, depression was also high, and quality of life was low. The lack of significant influence of physical abuse on women's psychological well-being may reflect limited variability in physical abuse over the course of the study. Recent abuse was a condition of study involvement; therefore, women's experiences of physical and psychological abuse were consistently high at baseline, and then after baseline, physical abuse largely declined. Psychological abuse, however, remained more frequent and more variable over the course of the study. It is also possible that psychological abuse may have been far more damaging to women's psychological well-being than physical violence (Follingstad et al., 1990), as some studies suggest that psychological abuse is a stronger predictor of well-being (Mechanic et al., 2008; Pico-Alfonso et al., 2006). This speaks to the importance of examining the multi-dimensional nature of abuse when attempting to understand survivors' psychological well-being.

To unravel the complexity of post-abuse sequelae, it is paramount that researchers attend to the processes and mechanisms which underlie the abuse-distress relationship. The difficulty survivors reported obtaining community-based resources was an important explanatory mechanism to consider. Notably, women's initial resource constraints did not mediate the relationship between baseline levels of physical or psychological abuse and

change in psychological well-being over time. However, this study offers preliminary evidence to suggest that women's earlier experiences of psychological abuse may contribute to their subsequent difficulties obtaining resources; albeit the effect of baseline psychological abuse on women's resource constraints eight months later did not reach conventional levels of significance. It is likely that earlier effects of psychological abuse may diminish in intensity as time passes, suggesting that smaller time intervals between measurement points are needed in future studies. It also appears as if women's resource constraints have rather immediate effects on their mental health and quality of life and that once these constraints are lifted, women return to their prior level of psychological well-being.

To add to our understanding of how these relationships play out over time, this study also investigated the time-varying effects of abuse, resource constraints, and women's psychological well-being. At times when psychological abuse was high, survivors' reported difficulties obtaining resources was also high, lending support for the extant literature which contends that assailants deplete women's access to resources using a variety of abusive strategies (Adams et al., 2008; Goodkind et al., 2003; Leone et al., 2004; Ptacek, 1997; Raphael, 1996; Swanberg & Logan, 2005). Further, ongoing difficulties acquiring community-based resources were associated with negative psychological sequelae over time as found in prior research (Bybee & Sullivan, 2002; Schumm et al., 2004), and as expected, the relationship between ongoing psychological abuse and change in quality of life and depression was fully explained by ongoing resource constraints.

The primary motivation of assailants' abusive actions is to dominate and control their partners' thoughts, feelings, and behaviors. Tactics of psychological abuse (threats of physical abuse, ridicule, isolation, intimidation, among many others; Follingstad et al., 1990; Stark, 2007) appear to be the primary mechanisms of control employed by assailants to restrict women's activities and limit their access to community-based resources. As Dutton and Goodman (2005) contend, assailants use tactics of psychological abuse and coercive control to create and exploit vulnerabilities in women, and wear down survivors' abilities to resist their demands by depleting their tangible, social, and personal resources. Survivors' access to resources and community supports that would facilitate their independence and protect them from reabuse (Bybee & Sullivan, 2002, 2005) likely threaten assailants' sense of control and counter their goals of dominating their partners' thoughts, feelings, and behaviors. Assailants, therefore, appear to utilize psychological abuse, which women often report as most damaging (Follingstad et al., 1990), to maintain power over their partners by limiting their access to resources.

In accordance with COR theory (Hobfoll, 1988, 1989; Hobfoll & Lilly, 1993), taken together, these findings suggest that survivors experience actual or threatened resource loss as a result of the psychological abuse they endure, and these resource constraints limit survivors' abilities to cope with or escape the abuse, which in turn brings about significant distress. Without the adequate resources to mobilize during times of stress, individuals' psychological well-being may be compromised, and as suggested by COR theory the distress individuals experience may exacerbate future resource loss (Johnson et al., 2007).

It is noteworthy that only psychological abuse was related to survivors' reported difficulties obtaining community-based resources. Again, it is possible that limited variability in physical abuse over time may explain the lack of association between physical violence and resource constraints. Alternatively, psychologically abusive control tactics used by assailants may be a more powerful tool than physical violence in limiting survivors' access to community-based resources. Whether it is primarily psychological abuse or a host of abusive strategies collectively that restrict survivors' access to resources, this study brings to light the serious far-reaching implications of abuse and demonstrates the need for advocates, researchers, and practitioners to identify strategies to reconnect survivors with the resources necessary to restore and promote their psychological well-being.

Though the findings from this study enhance our understanding of the role resource constraints play in the lives of survivors of IPV, several limitations must be considered. First, the nature of the sample used in the current study limits generalizability to all women with abusive partners. Second, the sample was of limited size, likely affecting power to detect significant effects on the slopes of depression and quality of life over time, which are typically small (Snijders & Boskar, 1999). Future research efforts should replicate this study using a larger and more diverse sample of women, while also retaining the current study strengths by using a longitudinal design and recruiting women from diverse settings.

Third, the analytic approach utilized was limited in its ability to infer causality among the time-varying covariates under study. More specifically, within each time point it was not possible to determine the temporal ordering of events; therefore, it is unclear if

abuse caused the difficulties survivors reported in acquiring resources, and if these difficulties led to increased depressive symptomatology and reduced quality of life. Despite this limitation, this study did demonstrate how these variables changed together over time, that is, how change in one variable was accompanied by change in another.

Finally, this study did not account for additional covariates that may have had an impact on survivors' abilities to acquire community-based resources and on their levels of distress over the course of the study. For instance, it is possible that exposure to other traumatic events, outside one's interpersonal relationship, one's sense of self-efficacy, or even preexisting mental health conditions, may have impacted one's ability to procure requisite resources, and may have also affected reports of depressive symptomatology throughout the study. The difficulties women reported obtaining resources may also reflect exosystem influences (Bronfenbrenner, 1979), as communities may have limited resources available for survivors to draw upon. Future research should expand upon the current study by exploring these additional variables as predictors of survivors' psychological well-being.

Despite these limitations, this study offers several important implications for future research and practice. Future research is needed to improve upon our understanding of the relationship between abuse and the difficulties survivors have acquiring resources. For instance, more attention could be directed to examining the direct actions and tactics of psychological abuse employed by assailants (e.g., sabotage efforts used to limit women's access to employment and educational opportunities, strategies that isolate women from their social support networks) that are most damaging to survivors' abilities to procure resources. Understanding the exact barriers women are

faced with as they attempt to acquire resources will greatly inform future intervention efforts.

In addition, because physical abuse became so infrequent after baseline, this study should be replicated with another sample of women with abusive partners over time to determine if physical abuse may in fact also explain the difficulties women report acquiring resources. In addition to examining physical abuse, additional research must also account for the injuries women suffer as a result of the abuse they experience, as injuries may also limit women's abilities to acquire resources.

Further, because it appears as if psychological abuse may continue to exert an impact on survivors' access to resources over time, this study should be replicated using shorter time intervals between measurement points that allow for a more sensitive assessment of the effects under study. Replication efforts of this nature should also increase the number of measurement points utilized to allow for a lagged design in which the independent variable precedes the mediator, which precedes the dependent variable(s). Finally, more attention should be directed to examining additional ecological factors that may help to explain the process by which abuse impacts survivors' psychological well-being over time. For instance, abuse may lead to survivors' economic dependency on their assailants or even to poverty; therefore, this is one potential mechanism, among many, that should be investigated to further our understanding of the pathways through which abuse affects survivors' psychological well-being.

Violence against women advocates, researchers, and providers are dedicated to helping women overcome the physical, psychological, and material hardships caused by abusive partners. It appears from this study that women's psychological well-being is

closely tied to their material well-being by way of resources. Thus, to help restore survivors' mental health and overall quality of life, collective efforts on the part of community-based providers, advocacy organizations, and clinicians are needed to improve women's access and availability to community-based resources. Additionally, outreach efforts are needed to increase survivors' awareness of resources and supports available within their communities. Outreach efforts must extend beyond those organizations and agencies already providing services to survivors to ensure that those women who have not sought help are also aware of available resources. For instance, large-scale media campaigns may be used to inform community members of available resources. Additionally, information should be made available at community health providers, local religious organizations, and other community venues frequently utilized or visited by survivors.

Service providers must also work together to ensure that care is holistic, enabling survivors to acquire *all* the resources (e.g., housing, employment, medical care, mental health care, child care, transportation) necessary to rebuild their lives and become free from their abusive relationships. Fragmented care will only prolong survivors' distress and may even force women to return to their assailants to fulfill their most basic needs. For instance, helping women find housing is insufficient assistance if they do not have the financial means necessary to sustain this place of residence. Providers must work with survivors to comprehensively assess their needs, identify sustainable resources to meet these needs, and see them through until they have acquired all the resources necessary to reestablish their lives, independent of their abusive partners. In addition, while initiating and providing care, practitioners must be cognizant and sensitive to the difficulties

survivors may be experiencing immediately following their abusive relationship. Survivors must be provided adequate time, counseling services, and the resources necessary to overcome the deleterious mental health consequences of abuse.

This study highlights the importance of reconnecting survivors with requisite resources that may have been lost as a result of their abusive relationships, in an effort to restore their psychological well-being. While this study unveiled one of many processes underlying the relationship between abuse and survivors' psychological distress, far more empirical attention is needed to identify additional ecologically-based explanatory mechanisms that may aid in the development of community-based interventions to assist survivors in overcoming the negative psychological impacts of abuse. Research of this nature is paramount to ensure the most appropriate and applicable intervention approaches are utilized to facilitate survivors' recovery from the devastating effects of abuse.

Chapter 3

STUDY 2: AN EXAMINATION OF THE IMPACT OF NEIGHBORHOOD FACTORS ON THE WELL-BEING OF SURVIVORS OF INTIMATE PARTNER VIOLENCE OVER TIME

Overview of the Literature

Millions of women are subjected to violence at the hands of their intimate partners each year (Tjaden & Thoennes, 2000). Survivors of intimate partner violence (IPV) often experience psychological abuse, and actual or threatened physical or sexual violence (Saltzman, Fanslow, McMahon, & Shelley, 2002) which may significantly compromise their overall physical health and psychological well-being (Campbell, 2002; Golding, 1999). Researchers attending to the precipitating factors or effects of IPV have largely emphasized individual or interpersonal characteristics, in lieu of more contextually-based ecological factors (Bogat et al., 2005; Miles-Doan, 1998; Raghavan, Mennerich, Sexton, & James, 2006).

The ecological framework underlying the current study emphasizes the importance of understanding individuals' functioning and development within the context of their surrounding environments (Bronfenbrenner, 1977, 1979). According to Bronfenbrenner's theoretical model, individuals are nested within several larger social systems (e.g., within families, neighborhoods, communities, and broader societies), each of which exerts influence over individuals' lives. Embedding survivors' experiences of abuse within the broader context within which they live may aid and advance our understanding of the effects that commonly follow IPV, including serious negative psychological sequelae (e.g., Golding, 1999). These broader ecological factors are

significant to our understanding of survivors' experiences as they may directly contribute to individuals' psychological distress or may inhibit individuals' abilities to overcome significant distress (e.g., Nicolaidis, Curry, McFarland, & Gerrity, 2004; Nurius et al., 2003).

To date, limited research has examined survivors' broader contextual environments as contributing factors to their compromised mental health and well-being. Using a longitudinal design, the current study examined whether perceived neighborhood disorder and related fear of victimization, due to the surrounding environment, contributed to survivors' negative psychological sequelae, in addition to the abuse they had experienced.

Intimate Partner Violence and Psychological Well-Being

An extensive amount of research exists linking IPV to deleterious mental health outcomes, such as depression, anxiety, post-traumatic stress disorder (PTSD), and suicidal ideation (Cascardi, O'Leary, & Schlee, 1999; Dutton, Kaltman, Goodman, Weinfurt, & Vankos, 2005; Golding, 1999; Helfrich, Fujiura, & Rutkowsli-Kmitta, 2008; Leiner, Compton, Houry, & Kaslow, 2008; Pico-Alfonso et al., 2006). Research consistently finds that prevalence rates of mental health disorders among survivors are substantially higher than those of non-abused women (Coker, Smith, Bethea, King, & McKeown, 2000; Houry, Kemball, Rhodes, & Kaslow, 2006; Theran, Sullivan, Bogat, & Stewart, 2006). Additionally, while much less frequently studied, IPV has also been found to have significant negative implications for women's overall quality of life (Adeodato, Carvalho, de Siqueira, & de Matos e Souza, 2005; Leung, Leung, Ng, & Ho, 2005).

Generally, the more severe and frequent the abuse, the more significant the impact on women's well-being (Campbell, Kub, Belknap, & Templin, 1997; Dienemann et al., 2000; Dutton et al., 2005; Golding, 1999; Houry et al., 2006; Pico-Alfonso et al., 2006). Within abusive relationships, assailants use multiple forms of violence (e.g., physical, psychological), each of which may contribute to women's compromised well-being (Dutton, Goodman, & Bennett, 1999; Marshall, 1999; Mechanic, Weaver, & Resick, 2008; Sackett & Saunders, 1999). Cumulative exposure to multiple forms of violence, however, appears to be most damaging to women's overall mental health (Houry et al., 2006; Ludermir, Schraiber, D'Oliveira, Franca-Junior, & Jansen, 2008). For instance, Houry and colleagues (2006) compared women who had experienced physical, sexual, and emotional abuse concurrently, with those who had either experienced no abuse, 1 form of abuse, or 2 forms of abuse. Concurrent exposure to all forms of IPV was associated with the greatest odds of manifesting symptoms of depression, PTSD, and suicidal ideation.

The majority of research investigating the psychological well-being of survivors of IPV has been cross-sectional. This cross-sectional work suggests that recency and continuity of abuse are particularly harmful for survivors' mental health (Bogat, Levendosky, Theran, von Eye, & Davidson, 2003; Bonomi et al., 2006). However, findings from longitudinal research are somewhat more equivocal. In some studies, as violence decreases over time, well-being improves for most women (Campbell, R., Sullivan, & Davidson 1995; Kernic, Holt, Stoner, Wolf, & Rivara, 2003), while in others the negative psychological implications of abuse remain steady over time (von Eye &

Bogat, 2006), or initially decline and later return, despite an overall drop in abuse (Campbell, J. & Soeken, 1999).

One important consideration, often overlooked in existing longitudinal studies, is the extent to which women experience additional stressors over the abuse, and how these factors may help explain survivors' psychological well-being. In addition to the level of abuse women experienced, Anderson, Saunders, Yoshihama, Bybee, and Sullivan (2003) examined women's secondary stress levels (e.g., family responsibilities, loss of income) on two-year depression trends among a sample of sheltered women who were separated from their abusive partners. In this study, depression declined over time for women who experienced low levels of violence and secondary stress when exiting the shelter; however, for women who experienced high levels of violence and secondary stress at shelter-exit, depression remained stable over time, or for some women, even increased.

Additional stressors may play important roles in the lives of women with abusive partners, as these factors may cumulatively contribute to the development or continuation of psychological distress. Empirical attention to the multitude of ecologically-based stressors women experience may be essential to our understanding of how the relationship between abuse and mental health develops and changes over time.

Intimate Partner Violence within Disadvantaged Neighborhoods

IPV is a widespread social problem impacting women of all ages, and across all racial, ethnic, and socioeconomic strata (Menard, 2001). However, several studies have found that prevalence rates of IPV are higher in resource-deprived impoverished neighborhoods, and among families falling within low socioeconomic stratum (Benson, Fox, DeMaris, & Van Wyk, 2003; Breiding, Black, & Ryan, 2008; Cunradi, Caetano,

Clark, & Schafer, 2000; Miles-Doan, 1998; Thompson et al., 2006). It remains unclear whether economic deprivation or neighborhood deterioration is directly responsible for higher rates of IPV, if women's likelihood to report IPV may differ by their broader position within society (Benson et al., 2003; McCue, 2007), or if the most commonly researched form of abuse in studies of IPV (physical violence) is more frequently or severely used by batterers against low-income versus middle- to upper-class women (e.g., Holtzworth-Munroe, Smutzler, & Bates, 1997).

Although IPV is certainly not exclusive to impoverished families, the elevated prevalence rates among low-income women give rise to significant concern, given the additional sources of stress individuals in disadvantaged neighborhoods are plagued with in their day-to-day lives. Disadvantaged neighborhoods are characterized by extreme rates of poverty, crime, unemployment, substance abuse, residential instability, dilapidated structural conditions, and a lack of economic and social resources (Boardman, Finch, Ellison, Williams, & Jackson, 2001; Hill & Angel, 2005; Krivo & Peterson, 1996; Latkin & Curry, 2003; Raghavan et al., 2006; Steptoe & Feldman, 2001; Zule et al., 2008). Many of the aforementioned indicators of neighborhood disadvantage are significantly associated with negative psychological sequelae and low overall quality of life among residents (Boardman et al., 2001; Hill & Angel, 2005; Matheson et al., 2006; Mulvey, 2002; Ross, 2000; Silver, Mulvey, & Swanson, 2002; Steptoe & Feldman, 2001; see Truong & Ma, 2006 for a review).

Neighborhood Disorder and Psychological Well-Being

Within disadvantaged neighborhoods, multiple mechanisms are at work to impact individuals' psychological health and well-being. One such mechanism is the way in

which individuals perceive their environments (Christie-Mizell, Steelman, & Stewart, 2003; Curry, Latkin, & Davey-Rothwell, 2008; Haney, 2007; Ross, 2000; Ross & Mirowsky, 1999), and how these perceptions are manifested psychologically. Perceptions may be shaped in multiple ways, and influenced by the complexity of the processes inherent in the context in which individuals are embedded. For instance, inadequate social and economic capital within deprived communities weakens the governing structures and social norms pivotal to maintaining social order, civility, and residential safety (Cutrona et al., 2005). This breakdown of social control is manifested through various social ills and indicators of societal unrest which are visible to residents and influence their perceptions about their environments (Ross & Mirowsky, 1999; Ross, Reynolds, & Geis, 2000). These collective visual indicators or social cues are termed neighborhood disorder, and are thought to signify to residents a breakdown of social order (Ross, 2000; Ross & Mirowsky, 1999; Skogan, 1990; Skogan & Maxfield, 1981) and the potential for threat or danger (Hill & Angel, 2005; Xu, Fiedler, & Flaming, 2005).

Neighborhood disorder encompasses both social and physical incivilities (Skogan, 1990; Skogan & Maxfield, 1981). Generally, social disorder refers to behavioral indicators of community deterioration (Skogan, 1990), such as public drinking or intoxication, fighting, loitering, gang-related activity, panhandling, drug use and sales, neighbor-to-neighbor conflict, prostitution, and harassment (Ross & Mirowsky, 1999; Skogan, 1990; Zule et al., 2008). Physical disorder refers to signs of degradation within communities, including abandoned structures, deteriorated homes, vandalism, graffiti, abandoned cars, vacant lots, and uncontained litter (Franklin, Franklin & Fearn, 2008;

Haney, 2007; Ross & Mirowsky, 1999). While conceptually distinct, researchers find that social and physical incivilities generally underlie the same construct and can be measured uni-dimensionally (Franklin et al., 2008; Ross & Mirowsky, 1999).

Neighborhood disorder is a significant factor to be considered when attempting to understand the psychological distress of residents in disadvantaged areas. However, the impact of neighborhood disorder on residential well-being, particularly among adults, has been understudied, only gaining empirical attention in recent years (Cutrona, Russell, Hessling, Brown & Murry, 2000; Cutrona et al., 2005). These studies, while mostly cross-sectional, have found strong support for an inverse relationship between perceptions of neighborhood disorder and individuals' overall quality of life and psychological well-being while controlling for individual-level factors, such as socioeconomic status (Gary, Stark, & LaVeist, 2007; Haney, 2007; Hill, Ross, & Angel, 2005; Ross, 2000; Ross et al., 2000; Steptoe & Feldman, 2001; Xu et al., 2005).

Only a very limited amount of research has investigated the relationship between perceived neighborhood disorder and psychological well-being over time, and studies have generally been limited to two time points (e.g., Christie-Mizell et al., 2003; Curry et al., 2008; Latkin & Curry, 2003). However, the aforementioned cross-sectional findings are substantiated in these studies. For instance, when investigating the relationship between perceived neighborhood disorder and depression over nine months among 818 adults involved in a health-based educational intervention, Latkin and Curry (2003) found that, after controlling for baseline depression scores, perceived neighborhood disorder at baseline predicted depression nine months later.

Research finds that perceptions of neighborhood disorder may be even more influential than objective neighborhood factors (e.g., location, group level indicators of disadvantage) in understanding residents' psychological well-being (Christie-Mizell et al., 2003; Curry et al., 2008; Hadley-Ives, Stiffman, Elze, Johnson, & Dore, 2000; Ross, 2000; Ross et al., 2000). For instance, Curry and colleagues (2008) examined the longitudinal impact of community violence (using objective crime data obtained from police records and geocoded at the block level) among inner-city residents on the development of depression. They found no direct relationship between community violence and depression; rather, an indirect effect of community violence on depression was revealed through perceived neighborhood disorder.

In another study investigating neighborhood location, perceived levels of disorder, and depression among a sample of 2,204 parenting women, Christie-Mizell and colleagues (2003) found that while objective location does impact perceptions of disorder, only perceived disorder was predictive of depression, even after controlling for socioeconomic status, race, health, and family structure (e.g., relationship status, number of children). Similarly, Ross and colleagues (Ross, 2000; Ross et al., 2000) examined the relationship among objective and subjective neighborhood factors, and mental health among a probability sample of 2,482 Illinois residents. They found that the addition of perceived neighborhood disorder to the prediction of depression and overall psychological distress, while controlling for individual-level factors (e.g., age, gender, race, socioeconomic status), rendered objective neighborhood characteristics (based on census data) insignificant, despite a significant effect in an earlier model.

While objective indicators of neighborhood disadvantage are certainly not inconsequential to individuals' psychological well-being, residents' subjective assessments of their neighborhoods seem to be more salient to understanding their mental health and quality of life. This may be because objective accounts of neighborhood characteristics are often based upon neighborhood block-level data obtained from the U.S. census, observational data coded at the neighborhood-level by external raters, or aggregated residential experiences or perceptions across a pre-specified geographical region, each of which happen to mask unique individual experiences. Implicit in these types of data are the assumptions that: (a) residential experiences are only influenced by the characteristics within the arbitrarily-delineated geographical boundaries of one's neighborhood (Dupere & Perkins, 2007), and (b) experiences within, and perceptions of one's neighborhood are universal across all residents. Researchers find that individuals' perceptions not only vary within neighborhoods (Taylor, 2001), but in some instances are unrelated to or only moderately correlated with objective indicators of neighborhood disadvantage and disorder (Perkins, Wandersman, Rich, & Taylor, 1993; Wen, Hawkley, & Cacioppo, 2006; c.f., Sampson & Raudenbush, 2004; Schieman & Pearlin, 2006). Given the limitations of objective measures, it is important that research attends to residents' subjective assessments of their environments, as they "...go directly to the heart of how people visualize their own circumstances" (Christie-Mizell et al., 2003, p.405).

Residents' perceptions of their broader environments are essential to understanding the link between neighborhood disadvantage and mental health. These perceptions are thought to be linked with mental health outcomes, through one's

emotional response to his or her environment. Conceptually, perceived neighborhood disorder is thought to signify to residents a breakdown in social order (Ross, 2000; Skogan, 1990), which in turn leaves individuals feeling threatened or fearful about their environments (Hill & Angel, 2005; Xu et al., 2005). A substantial amount of evidence links neighborhood disorder with perceived risk and fear of both crime and victimization, particularly among women (Kanan & Pruitt, 2002; LaGrange, Ferraro, & Supancic, 1992; Perkins & Taylor, 1996; Ross et al., 2000; Ross & Mirowsky, 2001; Schafer, Huebner, & Bynum, 2006; Wyant, 2008; Xu et al., 2005).

Three dominant theoretical models have been proposed to explain citizens' fear of crime: (a) the vulnerability model, (b) the disorder/incivilities model, and (c) the social integration model (see Franklin et al., 2008 and Wyant, 2008). The vulnerability model is based upon the theoretical tenet that individuals' perceptions of personal vulnerability (including physical vulnerability to assault, as well as social vulnerability via a lack of material, social, and economic resources) may lead to fear of crime. The disorder and incivilities model purports that manifestations of neighborhood disorder (physical and/or social incivilities) give rise to feelings of fear and increased risk for victimization. Finally, the social integration model posits that fear of crime is inhibited when residents are socially integrated within their neighborhoods and feel a sense of belonging and attachment to their communities. Franklin and colleagues (2008) tested each of these theoretical models among a sample of 2,599 residents across 21 cities and found perceived physical and social disorder (the disorder/incivilities model) to be the most powerful determinants of citizen fear.

Fear of crime and victimization, and overall perceptions of safety, have important implications for citizens' psychological well-being, as each have been found to relate to a range of mental health disorders (e.g., anxiety, depression) and poor overall quality of life (Green, Gilbertson, & Grimsley, 2002; Hill & Herman-Stahl, 2002; Kruger, Reischl, & Gee, 2007; Stafford, Chandola, & Marmot, 2007; Xu et al., 2005; Zule et al., 2008). Examining the impact of actual crime, neighborhood disorder, and fear of crime on quality of life, Xu and colleagues (2005) found the only significant direct effects were between citizens' quality of life, and both perceived neighborhood disorder and fear of crime. While not directly tested in this study, fear of crime may potentially serve as one of several factors likely mediating the relationship between neighborhood disorder and residents' compromised mental health and quality of life.

The ecological context is an important determinant in understanding residents' mental health and well-being. Prior cross-sectional and limited longitudinal research suggest that perceptions of neighborhood disorder, and related fear of crime and victimization, may be two factors contributing to the compromised mental health and well-being of individuals within low-income disadvantaged neighborhoods.

Cumulative Adversity: Women's Experiences of Intimate Partner Violence and Neighborhood Disorder

Low-income women with abusive partners may face additional adversity when exposed to neighborhood disorder, given that IPV already places survivors at substantial risk for negative psychological sequelae. Neither of these life stressors are generally discrete incidents; rather, each represents a significant and chronic pathway of stress which wears down individuals' resistance and resources over time (Wheaton, 1999).

Therefore, concurrent or cumulative exposure to both IPV and neighborhood disadvantage may significantly undermine survivors' psychological health and overall well-being.

Stress theorists emphasize the importance of understanding overall well-being within the broader context of individuals' environments, considering individual-level factors simultaneously with the influence of broader social systems (Lin & Ensel, 1989; Pearlin, 1989). Given that both IPV and neighborhood disorder have important implications for individuals' well-being, it is important to assess these effects simultaneously, and examine how these factors may cumulatively affect survivors' psychological health.

Within the cumulative adversity theoretical framework, individuals' well-being is perceived as the byproduct of unfavorable persistent and/or additive circumstances evolving over time (Hatch, 2005). When multiple stressors are at play, some may exert influence on others, or may change the magnitude of the effect of others (Sandler, Braver, & Gensheimer, 2000). The accumulation of multiple stressors may have additive or multiplicative effects on individuals' well-being, as the buildup of many stressors may give rise to significantly greater consequences than those of the individual stressors themselves (Mirowsky & Ross, 2003; Turner & Lloyd, 1995).

Within the lives of survivors of IPV, the additional stress brought on by perceived neighborhood disorder and feelings of fear may cause significant further impairment in psychological functioning, or may inhibit women's abilities to overcome the distress they experience as a result of IPV. To date, limited empirical attention has been directed to understanding the impact of women's experiences of IPV and the effects of their

neighborhoods on their overall psychological well-being, and even this work has overlooked the impact of perceptions of neighborhood disorder.

Studies having bridged the gap between neighborhood effects and survivors' well-being have largely emphasized women's exposure to community violence, over perceptions of disorder. For instance, Bogat and colleagues (2005) investigated the relationships among IPV, objective indicators of community violence (specifically aggravated assault and disorderly conduct offenses occurring at the census block level), and women's mental health (anxiety, depression, and PTSD) among a community-based sample of 94 women. Overall, women with no past-year history of IPV reported no adverse mental health sequelae, regardless of the occurrence or frequency of past-year community violence in their neighborhood(s). The co-occurrence of IPV and community violence, however, was associated with anxiety, depression, and PTSD-related symptomatology. The absence of a community-level effect on survivors' mental health likely reflects the way in which community violence was assessed. Aggregation of census data to represent community-level experiences of residents does not directly reflect individuals' exposure to, nor perceived severity of, violence occurring in their neighborhood(s).

Another cross-sectional study conducted by Clark and colleagues (2008) examined community violence exposure among a sample of 386 women in an urban community health center. After controlling for the impact of individual-level factors and experiences of IPV, Clark and colleagues found that exposure to community violence significantly predicted women's depression and anxiety. Finally, among a community-based sample of 90 low-income African American women, Brown, Hill, and Lambert

(2005) examined the additive and multiplicative impact of community violence exposure and IPV on the development of trauma-related symptoms cross-sectionally. They found that community violence exposure significantly predicted trauma symptomatology, after controlling for IPV. The authors then reversed the order of the predictors to assess the impact of IPV, over the effect of community violence exposure, and based on these findings concluded that both community and partner violence uniquely (thus, additively) contribute to the development of trauma-related symptomatology, after controlling for the other.

These findings, taken together, suggest that exposure to neighborhood violence, as reported by residents, has important implications for individuals' overall well-being, in addition to personal victimization by an intimate partner. While community violence exposure does not directly indicate perceptions of neighborhood disorder, researchers have found a positive relationship between community crime and neighborhood disorder (O'Shea, 2006; Skogan, 1990; Xu et al., 2005). Further investigation of salient ecologically-based contextual factors within studies of IPV is warranted, as these factors are likely to advance our understanding of how the effect of one's contextual environment may be implicated in the development of negative psychological sequelae commonly experienced by survivors of IPV.

The Current Study

The current study investigated the concurrent and cumulative effects of IPV victimization and neighborhood disorder on survivors' psychological well-being over time. In addition, to understand the process through which women's perceptions of their neighborhood contexts may impact their psychological well-being, fear of victimization

was explored as a mediating factor. This study extends previous research in a number of ways. First, little is known about how the neighborhood context, as a source of additional stress, may impact survivors' broader well-being, after accounting for women's experiences of abuse. This is particularly important to investigate among survivors with limited economic resources who often reside in neighborhoods perceived to be high in disorder. Identifying neighborhood-level effects, based upon women's perceptions, has important implications for future intervention strategies focused on enhancing women's broader resource and support networks (e.g., linking women with additional community-based resources, enhancing women's safety planning efforts, building cohesion across neighborhoods), and is salient to our overall understanding of how best to assist survivors in overcoming the deleterious mental health consequences they may experience.

In addition, this study examined the process through which neighborhood disorder impacts survivors' overall psychological well-being. While evidence exists suggesting a link between perceptions of neighborhood disorder and fear of crime, and between fear of crime and mental health, no study to date has examined fear of crime as a partial mediating factor among a sample of women with abusive partners. Finally, one of the most significant contributions of this study is the ability to delineate how these variables may relate to each other over time.

The conceptual model underlying the current study is presented in Figure 2. Specifically, two research questions were investigated: (a) *Does perceived neighborhood disorder impact women's psychological well-being (depression and quality of life), over and above their experiences of intimate partner violence?*, and (b) *Does neighborhood fear of victimization partially mediate, or explain, the relationship between perceived*

neighborhood disorder and women's psychological well-being (depression and quality of life)? This study investigated both differences between women (between-women effects) as well as how women's individual experiences changed over time, relative to their own past experiences (within-woman effects). The hypotheses below distinguish the between-women and within-woman effects that were tested.

A) Between-Women Differences Predicting Change over Time

H1: Higher levels of baseline physical and psychological abuse will be associated with an increased trajectory in depression and decreased trajectory in quality of life over time.

H2: Higher levels of baseline perceptions of neighborhood disorder will be associated with an increased trajectory in depression and decreased trajectory in quality of life over time, over and above the impact of abuse at baseline.

H3: Higher levels of baseline perceptions of neighborhood disorder will be associated with higher levels of baseline fear of victimization, over and above the impact of abuse.

H4: Higher levels of baseline fear of victimization will be associated with an increased trajectory in depression and decreased trajectory in quality of life over time, over and above the impact of abuse at baseline.

H5: The relationship between baseline perceptions of neighborhood disorder and changes in psychological well-being (depression and quality of life) over time will be partially mediated by baseline levels of neighborhood fear of victimization, over and above the impact of baseline abuse.

B) Within-Woman Trajectories of Change over Time

H6: Within-woman increases in physical and psychological abuse will be accompanied by increases in depression and decreases in quality of life over time.

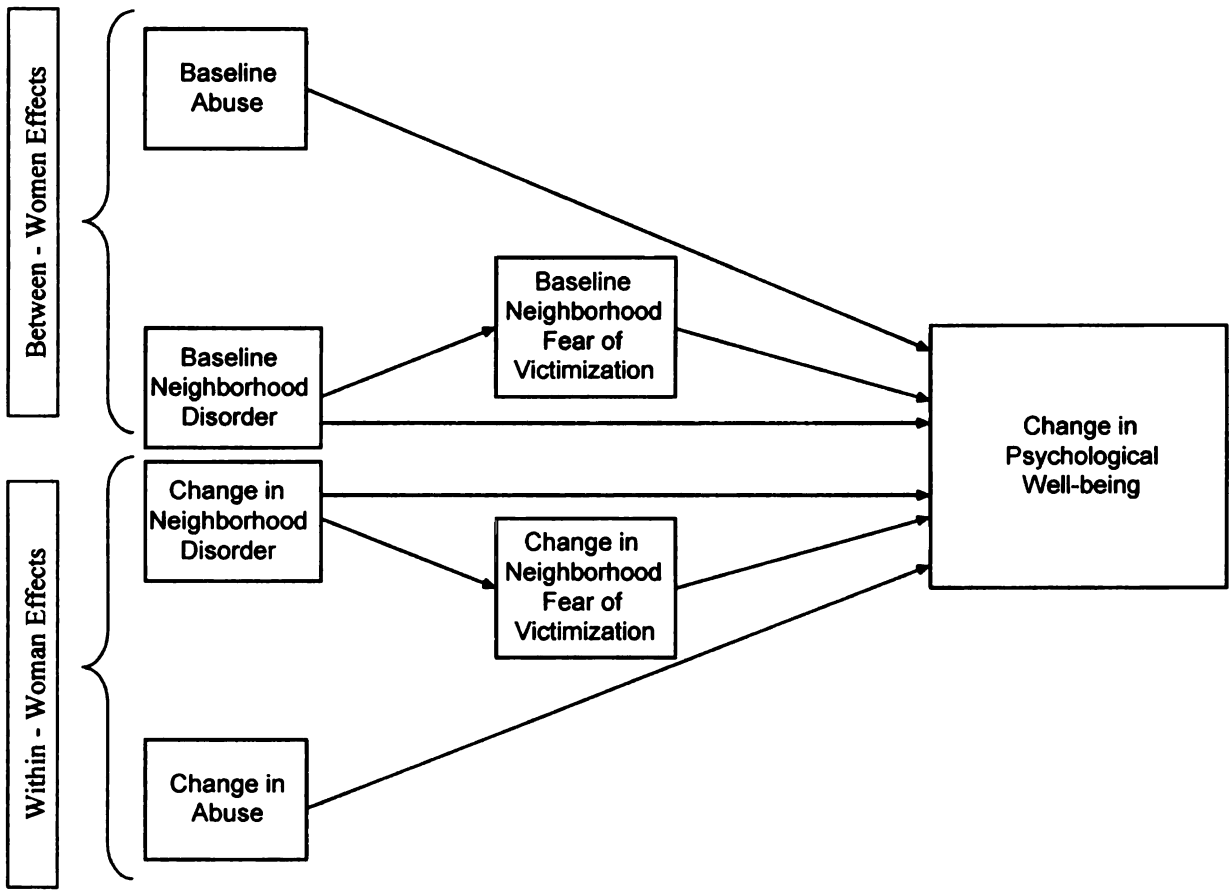
H7: Within-woman increases in perceived neighborhood disorder will be accompanied by increases in depression and decreases in quality of life over time, over and above the impact of abuse.

H8: Within-woman increases in perceived neighborhood disorder will be accompanied by increases in neighborhood fear of victimization over time, over and above the impact of abuse.

H9: Within-woman increases in neighborhood fear of victimization will be accompanied by increases in depression and decreases in quality of life over time, over and above the impact of abuse.

H10: The relationship between changes in perceived neighborhood disorder and psychological well-being (depression and quality of life) over time will be partially mediated by changes in neighborhood fear of victimization, over and above the impact of abuse over time.

Figure 2. A conceptual model depicting the impact of neighborhood disorder and the mediating role of neighborhood fear of victimization on the psychological well-being of survivors of intimate partner violence over time.



Method

Participants

The current study investigated the lives of 160 female survivors of IPV over time, all of whom participated in a larger research study designed to test the efficacy of an experimental family-based advocacy intervention for women and their children (see Study 1 for a detailed description of the advocacy intervention). Several criteria were used to determine women's eligibility for this study. All women had to have been physically victimized by a current or ex-intimate partner in the four months preceding their involvement in the study; had to agree to be interviewed six times over two years and to be randomly assigned to an experimental advocacy intervention group, or a control condition, where women received 'services as usual;' and finally, had to have at least one child between the ages of 5 and 12 living with them who was also interested in participating in the larger study.

Procedure

Survivors were recruited from several sites: (a) a community-based agency providing short-term supportive services to survivors following police intervention (n = 67; 42%), (b) two community-based programs that provide both residential and nonresidential services to families experiencing IPV (n = 51; 32%), and (c) the county prosecutor's office through which women obtain personal protection orders (n = 42; 26%). All women provided written informed consent to participate prior to their first (i.e., baseline) interview, which was conducted within two to three weeks after recruitment. Interviews with women in residential shelter programs were not conducted until all

families transitioned out of the shelter to avoid interviewing individuals while in crisis; however, all women had exited the shelter within one week post-recruitment.

Following their baseline interviews, women were randomly assigned to the experimental (n = 67; 42%) or control condition (n = 93; 58%). Subsequent interviews were conducted 4, 8, 12, 18, and 24 months after the baseline interview. Women were paid $20 for their baseline interview, and $60, $70, $80, $90, and $100 respectively, for each follow-up interview thereafter. Interviewee retention rates were 84% or higher for all five follow-up time points (84%, 86%, 88%, 88%, and 86%; see Sullivan, Rumptz, Campbell, Eby, & Davidson, 1996 for a detailed description of the retention strategies employed in this study), and women who missed one or more interviews were not found to differ by demographic characteristics, or by exposure to abuse. Interviews across all six time points ranged from 30 minutes to 6.5 hours (M = 115.70 minutes; SD = 43.55). All interviews were conducted by female undergraduate students who underwent an intensive 8-week training program. Interviews were administered face-to-face, audio-taped, and conducted in a private, safe, and convenient space to ensure women's confidentiality and comfort.

Participant Demographics

Women's average age at the time of their baseline interviews ranged from 21 to 49 years (M = 32.10; SD = 6.09). Nearly half the sample identified as non-Hispanic White (n = 72; 45%), slightly over one third as African American (n = 59; 37%), and the remaining women as multiracial (n = 14; 9%), Hispanic/Latina (n = 11; 7%), Native American (n = 2; 1%), or Sudanese (n = 1; < 1%). One woman did not report her racial/ethnic identity (< 1%).

Primarily this sample was comprised of low-income women. Monthly family income ranged from $232 to $6,800 at baseline ($M$ = $1,632; SD = $889). However, after adjusting women's monthly income to account for the number of family members this income supported (range = 2 to 10 individuals; M = 4.07; SD = 1.39), monthly income dropped between $58 and $1,638, with M = $425, and SD = $241. The majority of women in this sample (n = 106; 66%) received some form of government assistance (e.g., food assistance, welfare, SSI) at the time of their baseline interview.

Only about half the women were employed at baseline (n = 87; 54%), with 59 of these women having full-time positions. Education levels varied substantially across this sample; 12% (n = 19) of women had an associates or bachelors degree, 39% (n = 63) had attended some college, 28% (n = 45) had completed high school or trade school, and the remaining 21% (n = 33) had not yet completed high school.

The majority of women were legally separated or divorced from their assailants (n = 65; 41%), or were never married to them, but had ended their relationships (n = 62; 39%) by the time of their baseline interview. The remaining women were continuing their marriage (n = 11; 7%), romantic partnership (n = 17; 11%), or platonic relationship (n = 5; 3%) with their assailants at baseline. The majority of women (n = 132; 83%), however, involved or not with their assailants, were no longer planning on continuing a relationship with them after their baseline interview.

Measures

Control variables. Several variables were statistically controlled for in the current analysis. First, because some women were exposed to additional resources and supports through their involvement in the advocacy intervention, it was necessary to control for

experimental condition. Additionally, women's involvement with their assailant(s) varied across the study and therefore was controlled. A dichotomous indicator of women's involvement with their assailant(s) at each time point was derived using several items assessing women's relationship involvement in the time preceding each interview (e.g., "What is your relationship now?" "Did you end your relationship in the last 4 months or before that?").

It is especially important when examining contextual environments in relation to individuals' psychological well-being to control for individual-level characteristics such as socioeconomic status and race, each of which may exert its own influence on the relationship between these two variables (Truong & Ma, 2006). Therefore, in the current analysis the following variables were statistically controlled: women's level of education, employment status, adjusted monthly income, and race. Women's level of education was represented by three dummy categories: (a) less than high school, (b) high school or trade school, and (c) some college and above (which served as the reference group to which other groups were compared). Employment status was represented by a dichotomous indicator of no employment versus part- or full-time employment. Adjusted monthly income was derived by dividing women's reported monthly income by the number of individuals supported by this income. Race was included as a dichotomous indicator, comparing non-Hispanic Whites to the remaining racial groups.

Psychological abuse. The 24-item Index of Psychological Abuse (IPA; Sullivan, Tan, Basta, Rumptz, & Davidson, 1992) was used to assess the extent to which women reported experiencing emotional or psychological abuse from their partners or ex-partners in the time preceding each interview (e.g., "How often has he told you about other sexual

relationships he wanted or was having in order to hurt you?" "How often has he threatened to hurt your family or friends?" and "How often has he threatened to end the relationship if you didn't do what he wanted?"). Women's responses were based on a 4-point Likert-type scale, with 1 = *Never* and 4 = *Often*. All items were averaged to produce scale scores, and Cronbach's alpha for this scale ranged from .88 to .95 across all time points.

Physical abuse. Physical abuse was measured using a modified version of the Conflict Tactics Scale (CTS; Straus, 1979; Sullivan & Bybee, 1999). The CTS was previously modified by Sullivan and Bybee by partitioning composite items into several single items to assess the frequency of a variety of abusive tactics which may or may not co-occur. Further, additional items were added to reflect other forms of abuse commonly identified within the literature (e.g., sexual assault). This 24-item scale assessed the frequency with which a variety of physically abusive tactics were used against participants by their partners or ex-partners during the months preceding each interview (e.g., "How often in the last 4 months has he slapped you with an open hand?" "How often in the last 4 months has he kicked you?" and "How often in the last 4 months has he smothered you?"). Participants responded to these items on a 7-point Likert-type scale (1 = *Never* to 7 = *More than 4 times a week*), and all items were averaged to produce scale scores. Cronbach's alpha, across all time points, ranged from .88 to .95.

Depression. The 20-item Center for Epidemiological Studies-Depression Scale (CES-D; Radloff, 1977) was used to detect current depressive symptoms and overall distress among the study participants. Women were asked to report the frequency they experienced a range of depressive symptoms during the week prior to each interview. For

instance, women responded to items such as "I felt that everything I did was an effort," "I was bothered by things that usually don't bother me," and "I felt that I could not shake off the blues even with the help from my family or friends" on a 4-point Likert-type scale (1 = *Rarely or never* to 4 = *Most or all of the time*). All items were averaged to create scale scores. Cronbach's alpha ranged from .90 to .93 across all time points.

Quality of life. Subjective global quality of life and well-being was assessed using nine items derived from the Perceived Quality of Life Scale (Andrews & Whitney, 1976). Women reported their overall feelings across several domains of their lives since their preceding interview (e.g., "How do you feel about what you are accomplishing in your life?" "How do you feel about the way you spend your spare time?" and "How do you feel about the responsibilities you have for members of your family?"). Women's overall level of satisfaction was recorded using a 7-point Likert-type scale, ranging from *Terrible* (1) to *Extremely Pleased* (7). All items were averaged to produce scale scores. Cronbach's alpha ranged from .85 to .92 across all time points.

Ecological context. Ecological factors, including perceptions of neighborhood disorder and related fear of victimization due to one's neighborhood context, were measured using two subscales from the Neighborhood Stability and Safety measure created by Coulton, Korbin, and Su (1996). The various domains incorporated into this measure (e.g., Disorder, Victimization, Facility Availability, Facility Quality) were derived from prior ethnographic work by the authors (Korbin & Coulton, 1994). Psychometric evaluation by Coulton and colleagues revealed that the subscales were distinct, demonstrated strong reliability (e.g., Disorder subscale α = .95 and Victimization

subscale $\alpha = .94$) and validity, and were found to discriminate between high and low risk neighborhoods.

Perceived neighborhood disorder was measured using 15 items which inquired about women's perceptions of the conditions surrounding their homes. The original subscale containing 14 items was supplemented with one additional item to assess the frequency of racial slurs or attacks within women's neighborhoods. Items from the original subscale inquired about the frequency with which various neighborhood conditions exist, such as "litter or trash on the sidewalks and streets," "graffiti on buildings and walls," and "gang activity." Women responded on a 10-point scale, which ranged from 1 (*Rarely)* to 10 (*Frequently).* Mean scores across all items were computed for each woman. Cronbach's alpha for this subscale ranged from .92 to .95 across all time points.

The *fear of victimization* subscale measured the extent to which residents are worried about becoming victims of crime and violence within their neighborhoods. The original 14-item subscale was supplemented with an additional item to assess women's concerns about being harassed by persons of other racial or ethnic groups within their neighborhoods. Items from the original subscale ask women to report how worried they are about things, such as "being mugged or beaten up in your neighborhood," "being sexually assaulted or raped in your neighborhood," and "walking alone after dark in your neighborhood." Women were asked to respond to each item on a 10-point scale; responses ranged from 1 (*Not worried at all)* to 10 (*Very worried).* All responses were averaged to create scale scores. Cronbach's alpha for this subscale ranged from .92 to .94 across all time points.

Data Analysis

Multilevel modeling (MLM) was employed using HLM software (Raudenbush, Bryk, & Congdon, 2005) to examine the relationship among experiences of IPV, women's neighborhood contexts, and their psychological well-being over time. MLM allows for flexibility in handling missing data due to differential participant attrition over time, as it uses any available data to model patterns of change (Luke, 2004).

Two-level hierarchical models were run to examine the effects of IPV, perceived neighborhood disorder, fear of victimization, and each of two outcome variables, including survivors' quality of life and depression. Within these models, time or repeated measurements are nested within participants. That is, at level one, MLM allows us to explore how each individual woman may change over the course of the study, relative to her own past experiences (within-person effects), while at level two, MLM allows us to examine how these changes may differ across study participants (between-person effects) (Bryk & Raudenbush, 1987; Singer & Willett, 2003). Baseline intercept levels and time slopes for each outcome variable were estimated as random effects, therefore allowed to vary from woman to woman, while the effects of abuse and neighborhood context were estimated as fixed, as they were assumed to be similar across women.

HLM allows for the examination of three separate effects: (a) the cross-sectional between-women associations between baseline abuse and neighborhood-related variables and baseline depression and quality of life scores, (b) the between-women effects of baseline abuse and neighborhood-related factors on changes in women's depression and quality of life over time, and (c) the within-woman effects of change in abuse and neighborhood-related factors on change in depression and quality of life over time. To

model the within-woman effects, Singer and Willett (2003) recommend centering time-varying covariates around a meaningful constant. Due to the larger study eligibility criteria, it was meaningful to compare women's trajectories of change relative to their scores at baseline, when all women were exposed to physical violence in the four months preceding their initial interview. Centering these time-varying covariates around women's baseline scores allowed for a comparison of women's change to their position at the beginning of the study. Centering involved subtracting women's baseline scores from their subsequent interview scores for physical abuse, psychological abuse, perceived neighborhood disorder, and fear of victimization. This produced deviation scores which reflected the extent of change women reported at each interview, relative to their scores at the time of their first interview.

The expectation-maximization algorithm (EM) was used in SPSS to impute missing values on the perceived neighborhood disorder and fear of victimization scales for two women at baseline to ensure that deviation scores could be computed for each of their subsequent interviews. In addition, while HLM can handle missing data at level one, all cases must be complete at level two (Heck & Thomas, 2000); therefore, race was also imputed for one woman using EM. EM is an iterative process used to produce maximum likelihood estimates (i.e., values that maximize the probability of capturing what would have been observed) based on available data to replace missing data (Allison, 2002).

Five sequentially nested models were run separately for each outcome variable. To allow for statistical comparisons across these models, full maximum likelihood estimation (MLE) was used. MLE allowed for comparisons across models using the chi-square difference test to determine if the addition of predictor variables significantly

improved model fit. All statistical tests used robust standard errors to limit the influence of extreme scores among variables with moderate levels of skew.

Unconditional models which included only intercept and slope terms were run first to assess change in each of the dependent variables over time, while controlling for the level two effect of the experimental condition. Next, several control variables, including education, employment, and women's adjusted monthly income at level one (modeled as time-varying covariates), as well as race at level two were added to the models. Third, physical and psychological abuse were added to each of the models, in addition to women's involvement with their assailant(s) which was modeled at level one, as a control variable allowed to vary over time. Next, perceived neighborhood disorder was added as a predictor to the each of the models, and fear of victimization was added to the final models.

Tests for mediation were run using the product of coefficients method endorsed by MacKinnon, Lockwood, Hoffman, West, and Sheets (2002). According to Baron and Kenny (1986) a mediator is a variable through which an independent variable exerts influence over a dependent variable. To formally test for mediation, two regression equations were run, the first of which regressed the mediator (neighborhood fear of victimization) on the independent variable (perceived neighborhood disorder), while controlling for physical and psychological abuse and all additional aforementioned control variables. The second model regressed the dependent variable (quality of life and depression, each run separately) on the mediator (neighborhood fear of victimization) and the independent variable (perceived neighborhood disorder). Using the unstandardized regression coefficients and standard errors from these models, Sobel tests (Sobel, 1982)

were then conducted to determine if the mediated or indirect effects were significant, using a conventional level of statistical significance ($p \leq .05$).

When the Sobel tests were significant, the following criteria were used to decipher full mediation from partial mediation and indirect effects. Full mediation was characterized by the absence of a direct association previously present between the independent and dependent variables, after the addition of the mediator to the model, while partial mediation was characterized by a significant relationship that remains between the independent and dependent variables, after the addition of the mediator to the model. Finally, indirect effects were characterized by an absence of a direct relationship between the independent and dependent variables, before accounting for the mediator in the model (Holmbeck, 1997).

Results

Comparative to women's average scores at baseline, experiences of physical and psychological abuse were lower at each subsequent time point, as were perceptions of neighborhood disorder and neighborhood-related fear of victimization. Women's average depression scores were also lower at all follow-up interviews, in comparison to the average score at baseline, and quality of life scores were higher at all time points. The means and standard deviations for all variables (excluding control variables) across all six time points are presented in Table 7. Descriptive statistics and frequencies for time-varying control variables are presented in Table 8. The results of the five sequentially nested multilevel level models follow and are presented separately for depression (in Tables 9 and 10) and quality of life (in Tables 11 and 12). Specifically the fixed model effects are presented in Tables 9 and 11, and random effects are in Tables 10 and 12.

Table 7
Study 2 Variable Means and Standard Deviations across All Time Points

Model Variables	Time 1 (N = 160)		Time 2 (n = 137)		Time 3 (n = 138)		Time 4 (n = 140)		Time 5 (n = 141)		Time 6 (n = 137)	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Psychological abuse	2.48	0.60	1.81	0.65	1.77	0.68	1.63	0.65	1.69	0.62	1.57	0.57
Physical abuse	1.78	0.66	1.16	0.31	1.20	0.54	1.12	0.35	1.16	0.42	1.10	0.24
Neighborhood disorder	2.94	2.02	2.68	2.11	2.66	1.89	2.67	1.92	2.47	1.86	2.70	2.06
Fear of victimization	3.73	2.14	3.40	2.22	3.44	2.26	3.19	2.05	3.08	1.99	3.18	2.10
Depression	2.39	0.59	2.14	0.65	2.04	0.59	2.02	0.66	2.00	0.64	1.94	0.62
Quality of life	4.32	1.06	4.93	0.99	4.95	1.03	5.00	1.12	4.98	1.15	5.00	1.09
Deviated psychological abuse[a]	0.00	0.00	-0.66	0.70	-0.70	0.71	-0.83	0.72	-0.78	0.70	-0.90	0.75
Deviated physical abuse[a]	0.00	0.00	-0.55	0.57	-0.54	0.67	-0.61	0.66	-0.58	0.61	-0.65	0.64
Deviated neighborhood disorder[a]	0.00	0.00	-0.22	2.11	-0.28	1.90	-0.26	2.04	-0.48	2.06	-0.26	2.07
Deviated fear of victimization[a]	0.00	0.00	-0.40	2.07	-0.31	2.11	-0.57	2.14	-0.66	2.12	-0.56	2.22

[a] Deviation scores reflect within-woman variation relative to baseline. Mean deviation scores reflect the average change from baseline across all women.

Table 8

Study 2 Descriptive Statistics and Frequencies for Control Variables across All Time Points

Model Variables	Time 1 (N = 160)		Time 2 (n = 137)		Time 3 (n = 138)		Time 4 (n = 140)		Time 5 (n = 141)		Time 6 (n = 137)	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Adjusted monthly income	425.49	240.99	519.52	405.27	509.31	293.74	533.29	334.97	514.61	330.26	566.47	399.23
	n	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%
Employment [a]												
Part- or full-time	115	71.88	102	74.45	104	75.36	100	71.43	102	72.34	99	72.26
No employment	45	28.13	33	24.09	34	24.64	40	28.57	39	27.66	38	27.74
Education [a]												
Less than high school	33	20.63	27	19.71	26	18.84	24	17.14	24	17.02	23	16.79
High school/trade school	45	28.13	38	27.74	42	30.44	44	31.43	42	29.79	43	31.39
Some college and above	82	51.25	70	51.10	70	50.73	72	51.43	75	53.19	71	51.83
Involvement with assailant [a]												
Yes	160	100.00	34	24.82	31	22.46	35	25.00	31	21.99	33	24.09
No	0	0.00	101	73.72	106	76.81	105	75.00	110	78.01	101	73.72

[a] Some percentages may not sum to 100% due to missing data or rounding error.

Predicting Depression

The unconditional model. Results revealed a significant linear decline in depression over time (γ = -.014, $p < .001$), while controlling for experimental condition, which was not a significant predictor of baseline depression (γ = .072, *ns*) or change in depression (γ = -.004, *ns*) in this model or any model hereafter. The correlation between the intercept (baseline levels) and slope (change over time) terms for depression was not significant (tau r = -.037, *ns*).

Control variables model. The addition of women's race at level two and adjusted monthly income, employment status, and level of education at level one only marginally improved model fit over the unconditional model, when predicting depression (i.e., the differences between models did not reach conventional significance levels), with $LR\ \chi^2$ (6) = 11.90, p = .06. Race was unrelated to women's depression at baseline (γ = .096, *ns*) and to changes in depression over time (γ = -.004, *ns*) in this model and all models hereafter. Similarly, within-woman changes in employment status (γ = -.006, *ns*), education (less than high school = γ = .103, *ns*; high school or trade school = γ = .007, *ns*), and adjusted monthly income (γ = -.000, *ns*) were unrelated to changes in women's depression in this model and in all subsequent models.

Abuse model. After controlling for the aforementioned demographics, the addition of physical and psychological abuse, and women's involvement with the assailant significantly improved model fit, with $LR\ \chi^2$ (7) = 89.55, $p < .001$. Between-women effects of baseline physical and psychological abuse significantly predicted baseline depression; however, were unrelated to change in depression over time (γ = .000, *ns,* and γ = -.002, *ns*, respectively). At baseline, a 1-unit increase in physical and psychological

abuse was associated with a .193 ($p < .01$) and .221-unit ($p < .01$) increase in depression, respectively. Within-woman changes in physical and psychological abuse were also associated with changes in women's depression over time. On average, a 1-unit increase in physical and psychological abuse, relative to baseline, was associated with a .125 ($p < .05$) and .157-unit ($p < .001$) increase in depression, respectively. Within-woman variability in involvement with the assailant was unrelated to change in depression over time ($\gamma = .038$, *ns*) in this model and all models hereafter.

Perceived neighborhood disorder model. The addition of perceived neighborhood disorder to the abuse model significantly improved model fit, with $LR\,\chi^2(3) = 12.65, p < .01$. While controlling for abuse and all aforementioned demographics, between-women variability in baseline perceptions of neighborhood disorder was significantly related to women's baseline depression, but was unrelated to change in depression over time ($\gamma = -.001$, *ns*). Specifically, a 1-unit increase in perceived neighborhood disorder at baseline was associated with a .066-unit increase in women's depression at baseline ($p < .01$). Within-woman variability in perceptions of neighborhood disorder was unrelated to change in depression over time ($\gamma = .020$, *ns*).

Neighborhood fear of victimization model. The addition of neighborhood fear of victimization did not significantly improve model fit, over the perceived neighborhood disorder model, $LR\,\chi^2(3) = 5.73$, *ns.* Baseline fear of victimization was not predictive of baseline depression ($\gamma = .028$, *ns*) nor of changes in depression over time ($\gamma = .001$, *ns*); however, within-woman effects of fear of victimization was significantly associated with changes in depression over time. A 1-unit increase in fear of victimization was associated with a .028-unit increase in depression ($p = .05$).

Table 9

Study 2 Fixed Effects across All Sequentially Nested Models Predicting Depression

Fixed Effects	Unconditional		Controls		Abuse		Neighborhood Disorder		Fear of Victimization	
	γ	*SE*	γ	*SE*	γ	*SE*	γ	*SE*	γ	*SE*
Between-women effects on baseline depression										
Average (intercept)	2.246***	.056	2.169***	.091	2.208***	.099	2.235***	.100	2.244***	.099
Condition	.072	.087	.074	.086	.060	.082	.055	.080	.051	.080
Race			.096	.086	.107	.081	.064	.082	.058	.081
Baseline psychological abuse					.221**	.082	.190*	.082	.197*	.083
Baseline physical abuse					.193**	.069	.189**	.068	.179*	.070
Baseline neighborhood disorder							.066**	.020	.048*	.023
Baseline fear of victimization									.028	.022
Between-women effects on the linear slope of depression										
Average (linear slope over time)	-.014***	.002	-.011**	.003	-.003	.003	-.004	.003	-.004	.003
Condition	-.004	.004	-.004	.004	-.004	.004	-.004	.004	-.004	.004
Race			-.004	.004	-.003	.004	-.003	.004	-.002	.004
Baseline psychological abuse					-.002	.004	-.002	.004	-.002	.004
Baseline physical abuse					.000	.004	.001	.004	.001	.004
Baseline neighborhood disorder							-.001	.001	-.001	.001
Baseline fear of victimization									.001	.001
Within-woman effects on change in depression over time, relative to baseline										
Employment status			-.006	.051	-.014	.049	-.004	.050	-.002	.050
Adjusted monthly income			-.000	.000	-.000	.000	-.000	.000	-.000	.000
Education: Less than high school			.103	.091	.136	.089	.122	.086	.113	.085
Education: High school or trade school			.007	.055	.059	.054	.051	.054	.037	.054
Involvement with assailant					.038	.049	.035	.049	.035	.049
Psychological abuse					.157***	.040	.152***	.040	.150***	.039
Physical abuse					.125*	.058	.126*	.057	.121*	.056
Neighborhood disorder							.020	.013	.002	.017
Fear of victimization									.028*	.015

Note. $N = 853$ observations at Level 1; $N = 160$ participants at Level 2; * $p \leq .05$, ** $p < .01$, *** $p < .001$.

Table 10

Study 2 Random Effects and Model Comparisons across All Sequentially Nested Models Predicting Depression

	Unconditional	Controls	Abuse	Neighborhood Disorder	Fear of Victimization
Random Effects	Variance	Variance	Variance	Variance	Variance
Intercept (baseline)	.204 ***	.196 ***	.160 ***	.147 ***	.144 ***
Time slope (linear)	.000 ***	.000 ***	.000 ***	.000 ***	.000 ***
Level 1 residual variance	.163 --	.162 --	.148 --	.148 --	.148 --
Model Comparisons					
LR Chi-square difference test relative to prior model	--	11.900 ^{t}	89.551 ***	12.651 **	5.734

Note. N = 853 observations at Level 1; N = 160 participants at Level 2; ^{t} $p < .10$, ** $p < .01$, *** $p < .001$.

Testing neighborhood fear of victimization as a mediator. Between-women variability in baseline fear of victimization was not found to mediate either the relationship between baseline neighborhood disorder and depression ($\gamma = .018$, *ns*), or the relationship between baseline neighborhood disorder and change in depression over time ($\gamma = .001$, *ns*). However, within-woman changes in fear of victimization did explain the effects of perceived neighborhood disorder on changes in women's depression over time. Specifically, there was a significant indirect effect of change in neighborhood disorder on depression through change in fear of victimization (indirect $\gamma = .017$, $p = .05$).

Predicting Quality of Life

The unconditional model. A significant linear increase in quality of life was detected over time ($\gamma = .021$, $p < .001$), while controlling for condition, which was not a significant predictor of baseline quality of life ($\gamma = -.127$, *ns*) or change in quality of life ($\gamma = .003$, *ns*) in this model, or any model hereafter. The tau correlation (tau $r = -.010$, *ns*) between baseline levels (intercept) and the slope term signifying change over time for quality of life was not significant.

Control variables model. The addition of several control variables (race at level two and employment, income, and education at level one) significantly improved model fit, $LR\,\chi^2(6) = 27.58$, $p < .001$, over the unconditional model. Race was unrelated to baseline levels of quality of life ($\gamma = -.202$, *ns*) or to change in quality of life over time ($\gamma = .005$, *ns*). Change in women's level of education (less than high school = $\gamma = .052$, *ns*; high school or trade school = $\gamma = .112$, *ns*) was unrelated to change in women's quality of life over time in this model and all subsequent models. Within-woman variation in employment status was marginally related to changes in women's quality of life ($\gamma =$

.148, $p = .08$) and change in adjusted monthly income was significantly associated with women's perceived quality of life over time; specifically, a 1-unit increase in income was associated with a .0003-unit increase in women's quality of life ($p < .05$).

Abuse model. Controlling for all the aforementioned variables, the addition of physical and psychological abuse, and women's involvement with their assailants, significantly improved model fit over the control variable model, with $LR\,\chi^2(7) = 171.05$, $p < .001$. At baseline, psychological abuse significantly predicted women's quality of life; however, physical abuse did not ($\gamma = -.105$, *ns*). Specifically a 1-unit higher psychological abuse score was associated with a .454 unit-lower quality of life score ($p < .01$). Baseline levels of physical ($\gamma = -.015$, $p = .07$) and psychological abuse ($\gamma = -.000$, *ns*) did not predict change in quality of life over time; however, the effect of physical abuse approached statistical significance. Within-woman change in psychological abuse was related to changes in quality of life; however, change in physical abuse was not ($\gamma = -.113$, *ns*). A 1-unit change in psychological abuse, relative to baseline, was associated with a -.401-unit change in quality of life ($p < .001$). The time-varying effect of women's involvement with their assailants was also predictive of change in quality of life over time; at times when women were involved with their assailants, on average, women's quality of life was .219 units lower than when women were not involved ($p < .01$).

Perceived neighborhood disorder model. The addition of perceived neighborhood disorder did not significantly improve upon the prediction of women's quality of life, over the abuse model, with $LR\,\chi^2(3) = 6.22$, *ns*. At baseline, the effect of neighborhood disorder on quality of life only approached statistical significance ($\gamma = -.058$, $p = .08$), and baseline perceptions of neighborhood disorder were unrelated to changes in quality

of life over time (γ = -.000, *ns*). However, within-woman variability in neighborhood disorder was significantly associated with changes in women's quality of life over time. On average, a 1-unit higher neighborhood disorder score was associated with a .037-unit lower quality of life score ($p < .05$).

Neighborhood fear of victimization model. The addition of neighborhood-related fear of victimization significantly improved model fit, over the perceived neighborhood disorder model, while controlling for all demographic variables, physical and psychological abuse, and perceived neighborhood disorder ($LR\ \chi^2\ (3) = 9.64, p < .05$). Although baseline fear of victimization was unrelated to baseline quality of life (γ = .014, *ns*) or to change in quality of life over time (γ = .001, *ns*), within-woman change in fear of victimization was related to changes in quality of life over time. Specifically, a 1-unit higher score on the fear of victimization scale, relative to baseline, was associated with a .050-unit lower score on quality of life ($p < .05$).

Testing neighborhood fear of victimization as a mediator. Baseline fear of victimization did not mediate the relationship between baseline perceptions of neighborhood disorder and baseline quality of life (γ = .009, *ns*) or between baseline perceptions of neighborhood disorder and change in quality of life over time (γ = .001, *ns*). However, within-woman changes in fear of victimization was found to fully mediate, or explain, the effects of perceived neighborhood disorder on changes in women's quality of life over time (γ = -.031, $p < .05$). That is, the prior direct relationship between changes in perceived neighborhood disorder and change in quality of life over time became non-significant after accounting for within-woman variability in fear of victimization.

Table 11

Study 2 Fixed Effects across All Sequentially Nested Models Predicting Quality of Life

Fixed Effects	Unconditional		Controls		Abuse		Neighborhood Disorder		Fear of Victimization	
	γ	*SE*	γ	*SE*	γ	*SE*	γ	*SE*	γ	*SE*
Between-women effects on baseline quality of life										
Average (intercept)	4.645***	.098	4.608***	.153	4.665***	.152	4.637***	.156	4.629***	.156
Condition	-.127	.153	-.116	.152	-.109	.144	-.106	.143	-.111	.145
Race			-.202	.149	-.264 ^{t}	.142	-.226	.143	-.225	.143
Baseline psychological abuse					-.454**	.138	-.422**	.140	-.419**	.140
Baseline physical abuse					-.105	.132	-.100	.132	-.106	.132
Baseline neighborhood disorder							-.058 ^{t}	.033	-.067	.041
Baseline fear of victimization									.014	.040
Between-women effects on the linear slope of quality of life										
Average (linear slope over time)	.021***	.004	.017**	.006	-.004	.005	-.004	.005	-.004	.005
Condition	.003	.007	.003	.007	.003	.007	.004	.007	.003	.007
Race			.005	.006	.008	.006	.007	.006	.006	.006
Baseline psychological abuse					-.000	.006	-.000	.006	.001	.006
Baseline physical abuse					-.015 ^{t}	.009	-.016 ^{t}	.009	-.017*	.008
Baseline neighborhood disorder							-.000	.002	-.001	.002
Baseline fear of victimization									.001	.002
Within-woman effects on change in quality of life over time, relative to baseline										
Employment status			.148 ^{t}	.084	.142 ^{t}	.083	.133	.083	.135 ^{t}	.082
Adjusted monthly income			.000*	.000	.000 ^{t}	.000	.000	.000	.000 ^{t}	.000
Education: Less than high school			.052	.150	.022	.142	.031	.140	.035	.141
Education: High school or trade school			.112	.104	.036	.096	.049	.095	.057	.094
Involvement with assailant					-.219**	.080	-.212**	.079	-.206**	.078
Psychological abuse					-.401***	.052	-.392***	.052	-.387***	.050
Physical abuse					-.113	.097	-.115	.096	-.115	.092
Neighborhood disorder							-.037*	.019	-.008	.022
Fear of victimization									-.050*	.019

Note. N = 853 observations at Level 1; N = 160 participants at Level 2; ^{t} $p < .10$, * $p \leq .05$, ** $p < .01$, *** $p < .001$.

Table 12

Study 2 Random Effects and Model Comparisons across All Sequentially Nested Models Predicting Quality of Life

	Unconditional	Controls	Abuse	Neighborhood Disorder	Fear of Victimization
Random Effects	Variance	Variance	Variance	Variance	Variance
Intercept (baseline)	.688 ***	.664 ***	.579 ***	.579 ***	.580 ***
Time slope (linear)	.001 ***	.001 ***	.001 ***	.001 ***	.001 ***
Level 1 residual variance	.395 --	.393 --	.319 --	.315 --	.312 --
Model Comparisons					
LR Chi-square difference test relative to prior model	--	27.584 ***	171.048 ***	6.222	9.642 *

Note. $N = 853$ observations at Level 1; $N = 160$ participants at Level 2; * $p \leq .05$, *** $p < .001$.

Discussion

Guided by an ecological perspective, this longitudinal study sought to enhance our understanding of how the psychological well-being of survivors of IPV may be affected by their experiences of abuse as well as their neighborhood environments. This study expands upon the extant literature examining community violence exposure among survivors of IPV by considering the long-term effect of subjective perceptions of neighborhood disorder while also attempting to unveil the mechanism that underlies the relationship between these perceptions and survivors' overall mental health and well-being. This study also furthers our understanding of how exposure to abuse and societal ills may not only affect survivors' mental health, but also their general life satisfaction.

The findings from this study provide further evidence for the link between abuse and negative psychological sequelae identified in previous research (Adeodato et al., 2005; Cascardi et al., 1999; Golding, 1999; Helfrich et al., 2008; Leung et al., 2005), and generally support findings from prior longitudinal studies as well, suggesting that the negative mental health implications of abuse are most severe at times when abuse is high and are generally short-lived once the abuse ends (Anderson et al., 2003; Campbell et al., 1995; Kernic et al., 2003). In support of this contention, women's baseline experiences of physical and psychological abuse were unrelated to changes in depression over time, which is likely due to the fact that after baseline (when women's abuse was highest) abuse dropped off, as many women ended their relationships. Notably, however, the relationship between baseline physical abuse and change in quality of life over time approached statistical significance, suggesting that for some women, physical abuse may continue to impact their life satisfaction over time. This may be especially true for

women who have suffered significant injuries as a result of the violence they endured, as prior research has found a significant association between injuries and women's reported quality of life (Sutherland, Bybee, & Sullivan, 2002).

In further support of the aforementioned literature, ongoing abuse continued to exert an impact on women's psychological well-being over the course of the study. At times when physical and psychological abuse were high, depression was also high. However, findings from prior research examining the collective impact of both physical and psychological abuse are somewhat inconclusive regarding whether each form of abuse independently contributes to survivors' depressive symptomatology. In some studies, when both physical and psychological abuse are assessed, psychological abuse appears to be so strongly related to depression that the effect of physical abuse is often rendered insignificant (Mechanic et al., 2008; Pico-Alfonso et al., 2006); while in other research, physical abuse is found to be the primary contributing factor to women's depression (Campbell et al., 1997; Sackett & Saunders, 1999).

Far less is known about the impact of abuse on women's quality of life over time. Interestingly, after accounting for the significant time-varying effect of psychological abuse on quality of life, change in physical abuse was not significantly associated with change in quality of life over time. Overall life satisfaction seems to primarily depend upon the extent to which one is exposed to psychological abuse, over and above physical violence. This is not particularly surprising that psychological abuse appears to be a stronger predictor of women's overall life satisfaction. Quality of life was assessed by items concerning general enjoyment with one's life, contentment with how one spends one's spare time, feelings of independence and freedom, feelings of personal safety,

feelings about accomplishments in life, etc. These are several of the very aspects of women's lives targeted by assailants' isolating and controlling tactics of psychological abuse (Marshall, 1999), and many women find psychological abuse to be more damaging than physical abuse (Follingstad, Rutledge, Berg, Hause, & Polek, 1990).

The cumulative effects of chronic stress brought on by physical and psychological abuse and deleterious environmental contexts are salient to our understanding of survivors' psychological well-being. Prior research has been limited to examining only community violence exposure among survivors of IPV (Bogat et al., 2005; Brown et al., 2005; Clark et al., 2008), overlooking women's subjective perceptions of their environments. Therefore, in addition to abuse, the effects of perceived neighborhood disorder and neighborhood-related fear of victimization were examined to determine if they further explained aspects of survivors' psychological well-being. Baseline perceptions of neighborhood disorder and feelings of fear of victimization were not related to survivors' quality of life or depression over time, as was expected. It is likely that perceptions of neighborhood disorder, and the emotions that follow, are most influential in the short-term, and it is quite likely that these perceptions and feelings from an earlier time point, perhaps when women may have been residing in another location, would not have long-term implications for their well-being.

Perceptions of neighborhood disorder and related feelings of fear of victimization over the course of the study did enhance our understanding of how survivors' psychological well-being changes over time. Changes in neighborhood disorder were found to both directly and indirectly relate to survivors' psychological well-being. At times when perceived neighborhood disorder was high, women's quality of life was low,

and the relationship between survivors' perceptions of the social and physical incivilities within their neighborhoods and their overall life satisfaction was fully explained by survivors' fear of victimization. As these findings suggest, general life satisfaction may be affected by deteriorated structural conditions and community members' disorderly behavior that preclude residents from engaging in activities they enjoy outside their homes because of fear. Additionally, these feelings of fear regarding one's neighborhood are likely to have direct impacts on other aspects of life satisfaction as well, such as limiting one's ability to carry out family responsibilities, and diminishing one's feelings of personal safety, freedom, and independence.

Notably, depression was not directly predicted by perceptions of neighborhood disorder, despite support for this association in prior research (Christie-Mizell et al., 2003; Latkin & Curry, 2003; Ross, 2000; Ross et al., 2000). It is possible that the experience of abuse unique to this sample was so detrimental to women's mental health that exposure to physical and social incivilities was not significant enough a stressor to manifest additional depressive symptomatology. Interestingly, however, perceived neighborhood disorder was found to indirectly relate to depression through feelings of fear. Therefore, after accounting for abuse, in order for survivors' subjective accounts of their neighborhood environments to have an effect on their mental health, particularly depression, they had to be fearful of their surroundings.

The relationship between survivors' perceptions and feelings about their neighborhoods and their psychological well-being is supported by previous research conducted with several non-abused samples (Gary et al., 2007; Haney, 2007; Hill et al., 2005; Xu et al., 2005; Zule et al., 2008). More importantly, however, these findings

advance our understanding of how perceptions of neighborhood disorder and feelings of fear may affect women who are already experiencing a significant chronic life stressor (e.g., IPV). Even above and beyond the devastating effects of abuse, the experiences of 'neighborhood' for women with abusive partners appear to be consistent with that of individuals from prior studies, signifying that individuals' environmental contexts may be a substantial source of distress. The theoretically-driven disorder/incivilities model (Franklin et al., 2008) supported in several prior studies (LaGrange et al, 1992; Ross et al., 2000; Ross & Mirowsky, 2001; Schafer et al., 2006; Xu et al., 2005) also holds true for women who have suffered the devastating impacts of IPV. This model purports that indicators of social and physical incivilities give rise to feelings of fear and increased risk for victimization among residents, and these feelings of fear and risk of victimization appear to be the mechanism through which survivors' perceptions of their neighborhoods impact their overall mental health and well-being. Findings from prior research have supported the link between feelings of fear of crime and general perceptions of safety, and residents' mental health and overall quality of life (Green et al, 2002; Hill & Herman-Stahl, 2002; Kruger et al., 2007; Xu et al., 2005; Zule et al., 2008); however, to date, this is the only known study to have examined this meditational pathway over time, and with survivors of IPV.

The findings presented must be considered in light of several limitations. First, this sample was comprised of primarily low-income mothers who self-identified as survivors of IPV. Therefore, it is unclear how these results would generalize to other samples of women with abusive partners. For instance, it is possible that women with children may have different experiences than those without, especially if their assailants

play a parenting role in the lives of their children. The continued involvement of an assailant in a woman's life may have significant long-term implications for her well-being. Additional research is needed to attend to issues of generalizability using more diverse samples. However, despite this limitation, this sample was rather unique, in that women were recruited from multiple sources, which diversified the sample beyond other studies of IPV which commonly rely solely on women recruited from domestic violence shelters.

Second, though these findings contribute to our understanding of the effects of survivors' environmental contexts on their well-being, this study should be replicated using a larger sample. Generally, effects on slopes are typically small (Snijders & Boskar, 1999); therefore, a small sample limits statistical power to find significant predictors of change in psychological well-being over time. Replication with a larger sample would increase power to detect significant effects that may have been missed in the current study.

Third, there was no clear definition of 'neighborhood' provided to survivors. This, however, can be perceived as both a limitation and strength of this study. While some women may have responded to interview items by reflecting on the immediate area surrounding their home or apartment, others may have more broadly conceived their neighborhood as their residential block, or even a section of the city in which they reside. Therefore, there is likely a lack of consistency in the geographical area on which women reported. Research, however, has found that individuals' perceptions of their neighborhoods are shaped not only by their immediate environment, but also by the

neighborhoods surrounding their own (Wyant, 2008); given this, it was best not to limit one's conceptualization of neighborhood.

A final limitation concerns the inability to disentangle temporal ordering among events within each time point. That is, within the four- or six-month time period prior to each interview it was not possible to determine if neighborhood disorder preceded fear of victimization or if fear of victimization preceded women's reported assessments of depression and quality of life. The same holds true for the effects of abuse on psychological well-being. The use of longitudinal data did, however, allow for the assessment of how the study variables changed together across time, which enhanced our understanding of the co-occurrence of events among this sample.

Despite these limitations, this study offers several important implications for future research, intervention, and practice. Given that this study was not able to tease apart the temporal ordering of events within each time point, additional research is needed to examine the relationship between these variables over time using a lagged design, in which survivors' perceptions of neighborhood disorder are assessed prior to feelings of fear, and fear in turn, is assessed prior to both depression and quality of life. Additionally, because the time interval between women's perceptions of neighborhood disorder and feelings of fear that may follow is relatively short, interviews should be spaced more closely together.

Given the importance of survivors' perceptions of their contextual environments, far more research is needed to understand how other aspects of individuals' neighborhoods, assessed subjectively, may be implicated in the development of negative psychological sequelae so that intervention efforts may be targeted to these areas. For

instance, it is clear from the current study that signs of neighborhood disorder may directly or indirectly affect survivors' psychological well-being; however, it would be beneficial to understand how these indicators of disorder, coupled with women's reports of witnessing community violence, or even personal victimization outside one's intimate relationship may impact well-being. In addition, it is important to examine possible protective mechanisms that may moderate the relationship between survivors' perceptions of neighborhood disorder and their psychological well-being. For instance, it is quite possible that residents residing in neighborhoods with strong community ties do not have negative mental health implications, despite high instances of disorder within their neighborhoods.

Community-based interventions should be designed to work with survivors and their children to ensure they have safe, affordable housing and access to requisite medical and mental health services to facilitate their physical and emotional recovery from the devastating impacts of abuse. Interventions aimed at enhancing social support may also have positive implications for women's psychological well-being. The negative psychological sequelae resulting from the isolation and degradation women endure as a result of the tactics of psychological abuse employed by their partners may be partially combated by efforts aimed at reconnecting women with positive social support networks. Interventionists could work directly with survivors to reestablish bonds with preexisting networks and work to develop additional supportive communities of women who can share their stories with others who have had similar experiences.

Intervention efforts should also be directed toward reducing the social and physical incivilities within low-income neighborhoods, as they too are associated with

diminished quality of life and increased depressive symptomatology. One potential strategy is to work directly with neighborhood residents to build collective efficacy. Collective efficacy and capacity to diminish incivilities may enhance residents' sense of community and recognition of a shared concern for community safety and stability (Schafer et al., 2006). Together with a shared mission, residents may work together to organize collective community clean-up projects to reduce the signs of neighborhood deterioration; develop or enhance Neighborhood Watch programs to increase surveillance and deter social and physical incivilities; and develop neighborhood or community associations to advocate for increased police patrol and other resources that may aid in restoring residents' feelings of safety and security. More directly, local government and law enforcement officials must prioritize efforts to control incivilities, perhaps by modifying their general operating procedures to promote the safety and well-being of their community members.

Finally, service providers and practitioners must be cognizant of the cumulative effects of stress in the lives of survivors of IPV and should attend to the difficulties this stress causes survivors who are attempting to rebuild their lives. First and foremost, when women engage with community-based providers immediately following an abusive relationship (particularly domestic violence shelter programs which often offer time-limited assistance), it is likely that they are still dealing with depressive symptomatology and therefore may have difficulties meeting the expectations or demands of program or shelter staff (e.g., identifying and procuring requisite resources to rebuild their lives within a limited amount of time). The effects of having had resided in a disadvantaged neighborhood as well as other stressors may only exacerbate negative mental health

sequelae, further limiting women's abilities to immediately deal with their most pressing needs. Therefore, providers and practitioners must ensure that survivors are provided adequate time, counseling services, and general support to overcome the devastating mental health impacts of abuse and other additive stressors, before being expected to actively engage in the processes/activities required to meet their expectations.

This study demonstrates the importance of context when attempting to understand the complexity of survivors' experiences and the negative psychological sequelae they endure. Future research must attend to circumstances beyond the abuse survivors experience to identify additional ecological factors that may contribute to their compromised well-being. Placing emphasis on the effects of abuse, while also attending to additional contextual barriers to survivors' well-being, may greatly improve upon our ability to provide survivors with the care, support, and resources they need to overcome the adversities they have faced.

Chapter 4

CONCLUSION

Prior researchers have long contended that survivors' experiences of physical and psychological abuse are associated with devastating psychological sequelae (see Golding, 1999 for a review). The findings from this dissertation support and extend the existing literature in a number of ways. First and foremost, the majority of prior research examining the mental health implications of abuse has been cross-sectional. Examining survivors' psychological well-being over time allows us to determine optimal points of intervention to assist women in overcoming the deleterious effects of abuse. Across these two studies, depression appears to be a rather immediate consequence of abuse, signifying the importance of providing survivors with counseling services, working to establish and/or restore their support networks, and offering other salient resources to promote their psychological well-being shortly following their abusive relationships.

It is noteworthy, however, that the effect of within-woman changes in physical abuse on change in depression over time, across these two studies, was somewhat inconsistent. In study 1, *Understanding the Impact of Resource Constraints on the Mental Health and Well-Being of Survivors of Intimate Partner Violence Over Time,* changes in physical abuse, relative to baseline, were found to be unrelated to changes in depression over time; albeit, within-woman changes in physical abuse in study 2, *An Examination of the Impact of Neighborhood Factors on the Well-Being of Survivors of Intimate Partner Violence Over Time,* predicted change in depression over time. This inconsistency can be attributed to the methodological differences between the studies. Specifically, due to the

nature of my research questions, study 1 was restricted to examining fewer time points, using a smaller sample. Therefore, it is likely that the findings from study 2 are more robust; however, additional research focused on examining the unique and collective impacts of physical and psychological abuse over time is warranted.

Second, this dissertation expands upon the previous literature by defining and measuring psychological health more broadly than the presence or absence of mental illness. That is, in addition to examining depressive symptomatology, which is said to be one of the most common mental health consequences of abuse (Campbell, 2002; Golding, 1999), this dissertation is one of few longitudinal studies drawing our attention to broader aspects of well-being by examining survivors' quality of life. Quality of life has significant long-term implications for survivors' safety (Bybee & Sullivan, 2002, 2005); therefore, our efforts must not only focus on helping survivors overcome significant psychological distress, but also on assisting women to restore their sense of satisfaction with their lives. When examining survivors' quality of life across these two studies, the necessity to provide long-term intervention to women who have experienced severe physical abuse within their relationships became clear. Physical abuse appears to have long-standing implications for survivors' quality of life, albeit depressive symptomatology subsides once the abuse ends. Consequently, long-term interventions aimed at restoring survivors' overall life satisfaction must supplement more acute care provided to assist women in overcoming the immediate, deleterious impacts of abuse. Comprehensively addressing the short- and long-term needs of survivors will likely facilitate their recovery from abuse and assist them in rebuilding their lives.

Third, and among the most significant of contributions of this dissertation, is the attention afforded to ecological factors that further explain survivors' psychological well-being. Understanding the many pathways by which abuse affects survivors' mental health and quality of life is paramount to our ability to develop interventions to alleviate the significant distress experienced by women as a result of the abuse they endured. Further, attending to contextually-based factors that expose survivors to cumulative stress provides supplementary points of intervention, thereby offering additional opportunities to link survivors to needed resources.

More specifically, study 1 illustrated that survivors' resource constraints are fully responsible for the significant mental health consequences they experience, following psychological abuse. Resource constraints represent a significant pathway by which abuse impacts survivors' psychological well-being, and this pathway illustrates multiple opportunities for intervention. For instance, community-wide efforts must be directed to increase awareness of available resources that exist within communities, and to improve survivors' access to these resources. Together, these strategies could help survivors break free from their abusive relationships, and prevent or alleviate the distress that is otherwise inevitable following abuse. Community providers must also work collaboratively to ensure that care is coordinated and addresses *all* the needs survivors present with to increase the likelihood that service provision is successful. It is essential that providers see survivors through the process of procuring resources until their lives have become stable, and the resources they need are independently sustainable over time. This comprehensive approach to care requires patience, flexibility, and dedication on the part

of providers to ensure that survivors' unique needs are addressed and the likelihood of their future success is maximized.

Survivors' neighborhood contexts, examined in study 2, also proved to be an important factor to consider when attempting to understand women's psychological well-being. The cumulative stress survivors experience as a result of abuse and deleterious neighborhood conditions only exacerbates negative psychological sequelae. In addition to providing survivors with the resources and supports they need to effectively deal with the abuse they have experienced, we must begin to help disadvantaged communities build their capacity to address the social and physical incivilities that are responsible for the compromised well-being of their residents.

Community leaders, providers, and advocates must take action to organize residents to combat the signs of disorder and decay responsible for bringing about feelings of fear and distress. Efforts and incentives to motivate and empower residents must be provided to help build capacity and foster resident cohesion. Residents may then collectively address neighborhood disorder by employing several strategies, such as initiating community-wide clean up initiatives, instituting Neighborhood Watch programs, developing neighborhood associations, and implementing zero-tolerance policies for disorderly activities. Leaders and activists may also advocate on behalf of disadvantaged communities to ensure that community officials remain aware of the conditions that exist and the resources that are needed to overcome the threats to community members' safety. In addition to the direct benefit of addressing the source of environmental stress for survivors of IPV, building collective efficacy within women's neighborhoods may also have indirect benefits for their psychological well-being. That is,

even when survivors have not self-identified as such, the efforts put forth to address deleterious neighborhood conditions may indirectly help women with abusive partners to connect with neighbors and other community-based support systems.

Our understanding of survivors' experiences and the negative psychological sequelae they present with is significantly enhanced when we consider additional ecologically-based contextual factors. Future researchers must broaden their scope to gain a comprehensive understanding of the complexity of survivors' circumstances. That is, in addition to abuse, contextual or situational factors must be at the forefront of our investigations so that interventions may be developed to comprehensively address survivors' needs. Research of this nature is critical for determining how best to invest our increasingly scarce intervention dollars. In addition, we must continue to expand upon our understanding of survivors' psychological well-being by investigating ecological factors that promote women's quality of life, in addition to examining those variables that primarily lead to pernicious psychological outcomes. Together, with these goals in mind, future research and practice will continue to expand our current capacity to assist survivors in restoring their happiness, independence, and most importantly, their physical and psychological well-being.

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