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The Relationship Between Adverse Childhood Experiences with Men's Lifetime Use of Physical Intimate Partner Violence

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THE RELATIONSHIP BETWEEN ADVERSE CHILDHOOD EXPERIENCES WITH MEN'S LIFETIME USE OF PHYSICAL INTIMATE PARTNER VIOLENCE

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by

Katherine J. Sias

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To: Dean Tomás R. Guilarte
Robert Stempel College of Public Health and Social Work

This dissertation, written by Katherine J. Sias, and entitled The Relationship Between Adverse Childhood Experiences with Men's Lifetime Use of Physical Intimate Partner Violence, having been approved in respect to style and intellectual content, is referred to you for judgment.

We have read this dissertation and recommend that it be approved.

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Date of Defense: July 1, 2021

The dissertation of Katherine J. Sias is approved.

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Florida International University, 2021

DEDICATION

First and foremost, this is dedicated to my parents who found a way to live with my independence and curiosity; they sheltered and nurtured me in so many ways. Without the values that they instilled and the security and opportunities they provided during my childhood, it is unlikely I would have had the skills to have the successes that I enjoyed, professionally and while raising my son, nor the skills or interest to pursue this degree. They provided an environment vastly different from that explored in this study, the impact of childhood abuse and adversity. Secondly, this work is dedicated to my son Chase Sias Long and his dad. They shaped my life in ways that were unfathomable when I met my former husband. Eighty percent of the time I would support choices that I made during my 20's. I am grateful for the years that I had with both of them. The losses due to not having an intact family informed the other 20%. Those losses fueled my sustained interest in this dissertation. In conclusion, it is my goal to decrease the number of other families who continue to fall through those cracks even though the knowledge and tools are available today to support them. This work was an attempt to give voice to the women and men whose experiences and behaviors do not fit into the box of power and control. It is ultimately dedicated to those women (and men) who resonate with the following observations by an unidentified social worker about 20 years ago; a woman of color and a victim of intimate partner violence.

> As I think about the issue of batterers and what the [criminal courts] and related programs should do, I think they need to ask themselves what role they want to play in this issue. Are they interested in rehabilitating [IPV] offenders? Interested in sending a strong message? Interested in

> punishing? And it may be all these and more, but in choosing what kind of approach to embrace, they'll have to prioritize these. This issue is so complex. I struggle with it because I know how devastating it is to be abused by a man and I know it's happening so often to so many women and I know that it needs to stop and I know that the jails are full of men of color and I know that women and families of color are suffering because their men are criminalized for so many things, and I know that men of color feel so disempowered and I know that must play a part in this and I know that no one gives a damn about this part of the equation or about social change to address this issue and that no one cares what happens to the family once the man is removed and that there is so much pain and in these families, everyone is losing, including the children while the 'experts' are preaching their ideologies and live lives that are so removed from the people who are suffering. So I have no answers. But I welcome any suggestions for how to approach thinking about this. It really is overwhelming. Whose voices are we really listening to when those of us who are working on this cause plan our interventions? When it comes to intervention, who should we be talking to? Are we paying attention to what the women know and what they want? Who is the constituency we are trying to serve? (Maguigan, 2003, p. 434)

A goal of this dissertation was to begin parsing these issues and identifying solutions, to the best of my limited abilities. I hope that the present study's results become mundane – quickly.

ACKNOWLEDGMENTS

Many people guided this dissertation in its journey – first and foremost the Chair of my committee, Dr. Ray Thomlison. His dedication to this project and his patience with me when I stumbled until I found a path though the analysis was above and beyond what he signed up for. Truly, I would not be the therapist, advocate, and more importantly have the understanding that this journey has provided without his interest in this topic, both when I applied for the Ph.D. program and the subsequent years it took for me to complete it. If I am able to touch lives in depth, his support provided me with the access to do so. I also dedicate this work to him. The School of Social Work (directed by Dr. Hayden) provided consistent support and acknowledged the importance of work in this area by providing me with a Graduate Assistantship for two years.

Saying thank you to my current and past committee members does not begin to convey my appreciation, but I'm at a loss as to what words would so these will have to suffice. Dr. Nicole Ruggiano and Dr. Miriam Potocky shepherd this work through to my candidacy. They provided insights and tempered my outrage so that I would not be banished from participating in academic conversations. Dr. Mariam Potocky provided direction that shaped the data analysis into this final form, which provided insights that were not available using SEM analysis. She continued to prod me to ensure a quality product was developed. Dr. Stephanie Coxe assisted me in maintaining my focus, provided guidance on analysis structure, and provided thoughtful observations. Dr. Marianne Sanchez was willing to join my committee and provided very helpful feedback during the final leg of my journey. A shout out to Dr. Janice O'Driscol, a nerd and cohort

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It would be very remiss of me if I did not acknowledge that this work would not exist but for the talented and insightful research of women and men from multiple disciplines, which provided the foundation for this dissertation. This research enabled the identification of situational couple aggression, which I prefer to identify as dysregulated aggression, which has adaptive emotional reflexes as a primary feature. The concerns expressed in this dissertation about the re-education program curriculum for men who are adjudicated for their use of physical aggression (i.e. intimate partner aggression) were not intended to diminish the importance of the work done, services provided, and the dedication of shelter-advocates provide to the women experiencing power and control intimate partner aggression. The work done by shelter-advocates for those victims remains critical in today's environment. For, in spite of the freedom's women enjoy, the work of shelter advocates continues to contributed to and support maintaining those freedoms, some of which are currently under assault.

As this document is the culmination of my academic pursuits, it is an appropriate time to recognize teachers who nurtured me: Sister Mary (2nd grade at Queen of Peace), Kathy Whittar (8th and 10th grade, St. Paul), Brother Norbert (Marist Brothers, 9th & 10th

grade) and Paul Writeman (11th and 12th grade, St. Mary). Rabbi Yehuda Leonard Oppenheimer introduced me to the beauty of Torah Study and Judaism, Gwendolyn Endicott (Wanderlost Rainforest in Oregon) introduced me to the goddesses, and Stephen Beck's MSW, LCSW demonstration of the gift of therapy when the therapist is also committed to growing and learning more. I am grateful to two counselors, each of whom had developed material to support behavioral change in individuals who engaged in physical partner aggression: Leslie Kendal (women) and Rick Baska (men). They committed years to working with this population, and their generosity in sharing their approach and experience with me was appreciated and validated my theoretical understanding of the topic. This experience inspired me to the finish line. Last but certainly not least, His Holiness Sri Sri Ravi Shankar who provided me with access to the mindfulness meditations, practices, and knowledge that is my North Star and safety net, beginning in the fall 1993.

ABSTRACT OF THE DISSERTATION

THE RELATIONSHIP BETWEEN ADVERSE CHILDHOOD EXPERIENCES WITH MEN'S USE OF PHYSICAL INTIMATE PARTNER VIOLENCE

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A national study on mental health asked men in a marriage-like relationship about their own use of physical aggression during their lifetime with the women in their life while dating and their current relationship). This study included questions on exposure to adverse childhood experiences (ACE). Access to those items provided a unique opportunity to examine the role of ACE and men's self-reported lifetime use intimate partner violence (IPV). A hierarchical analysis using 15 variables in three categories of ACE (family-of-origin violence, impaired parenting, individual adversities) identified predictors within each category associated with IPV use. When the variables in the family-of-origin category were tested as a stand-alone model it was not associated with IPV use. However, by combining variables in this category with the variables in the impaired parenting category, a significant model was identified. Importantly, this result was inconsistent with power and control IPV theory. Rather, the present study's results supported polyvictimization theory: exposure to multiple forms of ACE can result in more severe symptomology Adding the category individual adversities to the model also

resulted in a significant model. While that addition did not result in a meaningful change in the pseudo R^2, it did add to the research by identifying new forms of ACE that were associated with IPV. Looking at lifetime IPV use supported previous research results' implications that there are two types of IPV: power and control IPV and situational couple IPV. The present study's findings support prior researchers' recommendations to expand the IPV offender education program curriculum for men. This study's results, along with prior research, supports the inclusion of material on emotional escalation, polyvictimization, and the allostatic model in the curriculum.

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CHAPTER I: BACKGROUND

Overview

Each year in the United States, approximately 4.7 million women, ages 18 or older, were physically assaulted by a romantic partner (Black et al., 2011). In 2016, police officers throughout the state of Texas responded to 76,659 calls of intimate partner assault (Texas Department of Family Safety, 2016). The primary opportunity to address men's use of physical aggression against their partner (i.e., intimate partner aggression, IPV) happened after the police had been called to an individual's home, an arrest occurred, and the IPV offender went through the adjudication process (e.g., court, plea bargain) – this continues to be true. It was common for individuals charged with IPV to be required to attend a re-education program as component to successfully complete probation in an attempt to stop an IPV offender's future use of IPV (James & Gilliland, 2012; Texas Department of Criminal Justice, 2012). By 2007, 88% of states had standards or policies for IPV offender programs and 95% of those programs appeared to focus on addressing men's abuse of power and a need to control their partner (Maiuro & Eberle, 2008). In 2006, the state of California's criminal justice system required 25,000 IPV offenders complete one of the state's 450 Duluth offender re-education programs (James & Gilliland, 2012). Yet, no measurable outcomes have been identified for the majority of programs that these men attend (Broidy, Albright, & Denman, 2016; Women's preventative services initiative report, 2016). This was likely due to these programs' emphasis on a single risk factor – power and control tactics – rather than providing information on the multiple risk factors associated with IPV (Maiuro & Eberle, 2008).

A significant amount of research has been conducted looking at the relationship between family-of-origin violence and IPV (Smith-Marek et al., 2015; Stith et al., 2000). IPV offender education program curriculum objectives informed by the Duluth offender module assumed that family-of-origin violence and sexual assault were the only forms of ACE that had a relevant association with IPV (Pence & Paymar, 1993; Walker 1984, 2009). However, multiple risk factors beyond family-of-origin violence have been identified as associated with IPV use (Shorey, Brasfield, Febres, & Stuart, 2011; Stith, Smith, Penn, Ward, & Tritt, 2004) including other forms of adverse childhood experiences (ACE; Capaldi, Knoble, Shortt, & Kim, 2012; Godbout et al., 2019). Few IPV studies have looked at the co-occurrence of family-of-origin violence with other categories of ACE (e.g., impaired parenting, individual adversities). Current neuroscience research now provides insight into possible explanations why there were individuals who reported exposure to similar categories of ACE but did not also engage in IPV use. The present study was designed to explore how ACE was associated with IPV use in order to better understand the potential value of expanding the IPV offender program curriculum to include additional educational material on multiple risk factors.

Understanding why information on the consequences of ACE is not currently included in Duluth informed, IPV offender program's curriculum is a complicated issue. It requires understanding the historical context of how women were expected to behave and the cultural prioritization of men's rights over women's rights. These factors led to shelter-advocates developing the IPV offender re-education program. Shelter-advocates became the recognized experts on the IPV offenders. The funding initiatives of the Violence Against Women's Act provided funding for shelter-advocates to educate

departments that came into contact with IPV victims. These shelter-advocates continue to control the narrative on IPV since the early 1970s. In some states, such as Oregon, shelter-advocates are identified as clinical experts and have controlled the narrative on how to work with IPV offenders since the Duluth offender module's curriculum was introduced 40 years ago, in 1980. Even though research data, cited throughout this dissertation, provides consistent and overwhelming support to enhance and expand the IPV offender program's objectives. Decreases in physical IPV use due to attending an education program as part of the adjudication process appears to require substantial curriculum additions to the Duluth offender module. Research conducted since the Duluth module was developed in 1980 suggested addressing multiple risk factors associated with IPV use. This dissertation presents research to support transitioning IPV offender programs from a focus on re-education to address women's equality (i.e. the offender's patriarchal attitudes) to an emphasis on educating IPV offenders on the multiple, often higher, risk factors. A holistic picture will enable the reader to understand that this change is inevitable. A review of the nuances associated with IPV use beyond the presence of paternal physical aggression in social science and cognitive neuroscience research studies was provided for the reader. This review focused on the implications of ACE's association with IPV use, emotional dysregulation. This dissertation also explored the barriers to expanding IPV offender program's curriculum with the state of Oregon was used as an example.

IPV Offender Re-education Program Curriculum Developers

Identification of Power and Control Intimate Partner Violence. Darwin's 1871 theory of sexual selection emerged in Europe and informed evolutionary

psychology. It posited that women are the 'choosy sex' and, due to intra-sexual competition, men are the 'aggressive sex' (Buss et al., 1990; Clark & Hatfield, 1989). This viewpoint both aligned with and buttressed Western culture's view on men and women's natures during this period. Women were thought to possess a biological disposition toward being conservative, passive, nurturing, and ill-suited to life in the public domain (Bourke, 2012). The valued qualities of women during this period were obedience, deference, and loyalty to her husband in all areas (Sugarman & Frankel, 1996). This view continued to flourish in the United States for the following 100 years with tentacles still reaching into the today's culture. Weisstein (1993) illustrated the boundaries of gender roles when she presented a nationally prominent (male) professor's observation, Bruno Bettelheim while employed by the University of Chicago in 1965: "We must start with the realization that, as much as women want to be good scientists or engineers, they want first and foremost to be womanly companions of men and to be mothers" (p. 195).

In 1964, Harvard University professor Erik Erikson expounded on Darwin's ideas, specifically their application to explain how women's identity was based in 'choosiness': "Much of a young women's identity is already defined in her attractiveness and in the selectivity of her search for the man by whom she wishes to be sought" (Weisstein, 1993, p. 196). Weisstein explained that even 30 years later, studies developed by university researchers remained grounded in the underlying traditional premise that women were "inconsistent, emotionally unstable, lacking in a strong conscience or superego, weaker, 'nurturant' rather than productive, 'intuitive' rather than intelligent, and if they are all 'normal,' suited to the home and the family…" (p. 208). In that

environment, gender identity tended to be black and white, which meant that men were stable, intelligent, productive, and suited to earn a living. The cultural gender biases of the late 1800's remained solidly embedded in the 1960s: A man was believed to possess a larger brain with more developed areas associated with reasoning skills when his brain was compared to a woman's brain (Bourke, 2012). While these gender biases provided men a position of entitlement, it entrapped them as well; men who did not embody cultural norms were identified as weak willed and/or of poor moral character (Bogacz, 1989).

In the early 1970s, gender roles remained firmly intertwined with the policies and procedures of the existing social structures, such as the criminal justice system and legislation at the local, state, and federal levels. Parnas (1967) explored and outlined a Chicago police department's response to IPV. In 1966, this department categorized IPV calls as 'disturbances,' which also included party noise, teen disturbances, etc. It was the dispatcher's responsibility to screen the call. Some dispatchers identified that their role upon receipt of a domestic disturbance calls was to talk the victim out of proceeding with having an officer respond. Even when caller clearly identified a physical assault: "('a neighbor is beating his wife') is often classified by the dispatcher as a domestic disturbance rather than as a battery [i.e. assault]" (p. 927). The disturbance classification sometimes remained after officers had responded, even though it was the department's policy to identify any physical 'contact' between individuals as battery (i.e., assault). Furthermore, police officers extended their travel time by 17% (approximately one minute) for 'family disturbance calls' compared to their response time for unrelated individuals' reported arguments. The officers explained they hoped that the IPV offender

had left the scene by the time they had arrived (Oppenlander, 1982). Many cities had an unofficial guideline referred to as the 'stitch rule': did the victim require stiches, in order to identify the seriousness of an assault (American Bar Association, 1978). A baseline number of stitches was determined by the department to identify whether or not an officer should arrest the woman's husband (Straus, 1976). A police officer's primary role when responding to a domestic disturbance call was as a 'support function' (Parnas, 1967). This response approach reflected how the predominate cultural framed mild-moderate IPV and appeared to have extended to severe IPV based on the responding officers' discretion. Straus (1980) elaborated on this phenomenon:

> Most of the violence…are acts such as pushing, shoving, slapping, and throwing things. These are what Richard Gelles and I have called the 'normal violence' of family life – normal in the sense that they are statistically frequent, and normal in the sense that many people tend to regard such minor violence as an 'undesirable' and understandable or justified part of married life…The limits on the hitting aspect of the marriage license include the fact that there must be 'justification' for hitting. This means that one's partner must be doing something seriously wrong and that the partner [wife] 'won't listen to reason.' (p. 169)

In addition, it appears that society was structured to protect men from a negative characterization by blaming the victim for a man's problematic behaviors. When a man was charged with a crime resulting from physically assaulting his wife, juries tended to hold his wife as responsible for her husband's abuse by assuming that she had failed to comply with the gender role behaviors, for example, keeping the home cleaned and

cooking meals (Baker, 2001). The defense attorney consistently relied on this perception and expected juries to not enforce a law that they did not view as fair or just (Baker, 2001). No doubt these cultural biases were the reason why prosecutors issued only 3% to 7% of the warrants requested by officers for IPV in 1973 (Field & Field, 1973: Parnas, 1973).

Prosecutors were no doubt influenced by judges' attitude and dismissive sentencing for severe IPV. When cases of IPV against a woman did make it to court, the judge often encouraged the victim to take 'responsibility' for the situation rather than pursue criminal charges against her husband (Bartlett, Harris, & Rhode, 2002). Faulk (1974) reported on the adjudication of 23 men who had severely assaulted or murdered their wives. Of these men, five were placed on probation, two of whom had been charged with murder. Nine went to prison. The court determined that the remaining nine men were either responding to mental illness or stress within their relationship. The consequences for these men: one not guilty, one suspended sentence, six sentenced to a mental hospital, and one died before sentencing. The court's (e.g., judge, jurors) perspective was that one needed to *understand the offender's wife* and overall home situation in order to understand his behavior. The court tended to sympathize with a man who had beaten or murdered his wife: The "tragic situation" of those "men who had a previously good personality and were under stress at the time" (p. 182). In particular, the court empathized with two specific types of IPV offenders: 1) the 'dependent passive husband' who attempted to please his querulous, demanding wife, and his inability to do so resulted in an explosion of severe physical IPV and 2) the 'stable and affectionate husband' whose use of physical aggression was identified as the consequence of a mental

health disorder, typically identified as a depressive episode. Overall in the instances when a husband's physical assault was not ignored, the court would recommend family counseling or social work solutions (Dziech & Schudson, 1989). When counselors and social workers provided services to a family, their focus was on enabling the wife to effectively accommodate her husband so that he would not hit her (Bartlett et al., 2002).

Married women had difficulty securing a divorce during this period. Every state in the United States required that one partner be identified as the 'cause' of a failed marriage, with proof submitted to the court; this made it difficult for women to get a divorce on the grounds physical or sexual abuse (Pleck 2004). In practice for a woman to divorce her husband, he had to consent to the divorce. In 1969, California was the first state to adopt 'no fault' divorce, eliminating that requirement, with Oregon an early adopter this policy in 1972 (Armstrong, 1976). Stevenson and Wolfers (2006) analyzed the impact of this law. In 37 states that passed no-contest divorce laws, the rate of severe IPV fell by about one third between 1976 and 1985. This rate of decline significantly surpassed the increase in divorce rates and suggested that no-fault divorce laws resulted in decreased levels of intimate abuse in on-going relationships. These researchers also noted a decline in the suicide rates within states that adopted a unilateral divorce law: primary among women ages 25-65.

The criminal justice system and the state and federal legislatures maintained a *veil of privacy* within the home that restricted civil service agencies from interfering in this environment (Gavison, 1992; Schneider, 2002; Zimring, 1987). In 1977, the Association of Chiefs of Police published a training manual for domestic-disturbance calls which suggested that the hitting of a spouse be treated as a 'private matter,' and that responding

police officers strive to avoid making an arrest (Straus, 1991). However in Oregon, state legislators did not support this policy. In 1977, Oregon was the first state to enact a statute mandating that police follow through with an arrest in *every* assault in which the officer had probable cause to 'believe' an assault had been committed (Hoctor, 1997). The establishment of IPV offender re-education programs provided a consequence that reinforced a police officer's decision to execute an arrest (Pleck, 2004).

Even so, the seeds of change were beginning to sprout, due to the work of shelter-advocates, (Davis, Hagen, & Early, 1994; Meade, 2012; Micco, 2005), fore example, marital rape exemption reform legislation (Augustine, 1990-1991). Rape laws established that once a woman was married and until a court *finalized* the divorce, her husband was exempt from prosecution; he could rape her at will, even when she had a separate residence (Augustine, 1990-1991; Pleck, 2004; Russell, 1990). Woodworth (2016) explained that in 1977, the Oregon State legislature was one of the first to explicitly remove the 'marital privilege' exemption from the rape statute. Subsequently, in 1978, the State of Oregon charged John Rideout for raping his wife while they were living in the same residence. During the six-day trial, the defense portrayed his wife as vindictive, a liar, and promiscuous (providing her sexual history which included an abortion). The prosecution provided medical testimony to her injuries including those associated with the physical assault that preceded her rape and the testimony of a neighbor who heard her screaming and 'thumps.' Even so, the prosecutor shared with the media that he did not think John should go to jail. It appears that the prosecutor was simply doing his job of upholding the law, irrelevant of his opinion of that law. The jurors (8 men, 4 women) were unanimous in their decision to acquit him.

Naturally in this environment, shelter-advocates identified the criminal justice system and social service organizations as complicit when a man assaulted his wife (Miccio, 2005). Shelter-advocates began developing services for 'battered' women. Their clients were often victims regularly, physically assaulted (e.g., beaten) by her husband (Miccio, 2005). These services were desperately needed. A woman who left her husband was normally financially destitute. In 1970, only 38% of women worked outside the home and, on average, those women earned 56% of men's wages (Crampton, Hodge, & Mishra, 1997). To meet IPV victim's needs, additional services were provided by shelters, such as individual safety planning, case management, group therapy, job skills, parenting classes, and budgeting courses (Rasmussen, Hughes, & Murray, 2008). Over time, shelter support services were extended to include legal services, court appearances, personal support, networking, and medical care (Mele, 2009; Rasmussen et al, 2008). Aguirre (1985) sampled residents from 15 shelters throughout Texas in 1980 (n = 1,024), with 66% of residents planning to separate. There were 312 married women who were undecided about whether to return to the relationship after leaving the shelter. Seventy-two percent were working and 18% returned to the marriage. The remaining women were financially reliant on her husband and 84% returned to the marriage. A review of studies on victims' shelter use noted that a victim's access to financial resources other than her partner was the strongest predictor of her leaving the relationship (Anderson & Saunders, 2003). A culture in which women systematically earn less than their male counterparts could be perceived as erecting barriers for women to leave an abusive relationship.

Shelter-advocates battled a patriarchal culture and system as they strove to protect women from being physically assaulted in their home. All of the policy and legal changes

were due to the perseverance, time, and intelligence of shelter-advocates. These women were fighting a system that attempted to diminish their reach and effect by referring to them as menopausal, domineering, and depressed (Miccio, 2005). A similar strategy was used to minimize the effects (e.g., PTSD, depression, anxiety, anger) of incest, rape, or any other form of abuse by describing victims as "reflecting [the] pathology within the women" (i.e., hysterical; Campbell & Salem 1999, p. 190). To protect an IPV victim from the man who assaulted her, shelter-advocates not only initiated the development os shelters, they also implemented systemic changes in mental health services, state and federal legislation, local police departments, and the courts. This likely contributed to shelter-advocates maintaining an independent organizational structure, coalitions at the city and state level. Shelter-advocates extended their participation to the national level, for example the National Organization of Women, to ensure that IPV victims' needs did not become overshadowed by other feminist and social issues.

When reviewing the literature, there are five consistent themes that define power and control IPV: 1) a consistent use of aggression in the relationship, emotional and/or physical; 2) rigid gender roles based on biology; 3) an authoritarian structure where the male partner wields or allocates the power within the relationship; 4) the emotional and physical abuse increases in intensity and frequency over time; and 5) when women are physically aggressive toward their partner it was either for self-protection, which includes preemptive behaviors, or out of desperation. Through working with women utilizing shelter services, shelter-advocates determined that men's use of power and control IPV was solely a function of "the hierarchical and male-dominant nature of society...when men are violent the purpose is to coerce and dominate" (Straus, 2008, p. 253). The typical

power and control behaviors experienced by women were documented by shelter-advocates in the Wheel of Violence published in 1984 (Domestic Abuse Intervention Programs, 1984a; Pence & Paymar, 1993).

Offender (Men's) Re-education Program Module Development. The second wave of feminism emphasized uprooting the prescribed social role that women were allotted. Evans (2003) noted that National Organization of women (NOW) was established in 1966 to ensure that women's experiences of sexual harassment in the workplace would not get lost among the other pressing social issues of this era (e.g., Civil Rights, Vietnam). NOW's leadership initially consisted of professional women who "accepted the division between the public and private spheres and chose to seek equality primarily in the public realm." (p. 19). NOW "did not provoke a massive grassroots feminist movement" (p. 21). During NOW's formative years, the organization focused on supporting the passage of the Equal Rights Amendment, legalizing abortion, and advocating for lesbians' rights (Barakso, 2004). Due to the work of shelter-advocates who partnered with NOW, power and control IPV was elevated and incorporated into NOW's national policy platform in 1976 (Eagly, Eaton, Rose, Riger, & McHugh, 2012; Micco, 2005; Pleck 2004). This was the first instance where IPV was positioned as a national social policy issue. This visibility supported the rising awareness of the unjust experiences of battered women, which the development of the Duluth model in 1980 was based (Domestic Abuse Intervention Programs, n.d.a).

The Duluth model was developed to soften power and control IPV victims' experience with social systems. Worell (2002) and Pence and Paymar (1993) explain that the *Duluth Model* was developed in 1980 as a modular domestic abuse intervention

project. The project's goal was to address the rampant, systematic, and punitive treatment that IPV victims experienced in the 1970s. All modules of the Duluth model, including the IPV offender re-education module, were designed to protect women as they came into contact with or relied upon the criminal justice system (Asmus, Ritmeester, & Pence, 1991-1992) by developing an inter-agency community response model (Pence & Paymar, 1993). The overarching goal of this model was to coordinate activities and establish close communication between the police, prosecutors, judges, shelters, legal advocates, probation officers, and mental health professionals (Worell, 2002). This network consisted of 11 community agencies that worked together to support IPV victims (Domestic Abuse Intervention Programs, n.d.a). Policies and procedures were developed to enable a unified victim support strategy throughout victim service agencies and criminal justice departments. This included developing an IPV offender re-education program designed to protect the victim of a man charged and prosecuted for by the criminal justice system for assaulting the woman that he had been romantically intimate with (Domestic Abuse Intervention Programs, n.d.a).

The IPV Duluth offender module's curriculum was designed to address how men internalized society's patriarchal attitudes. It was based on the premise that men who were physically aggressive with their partner treated all women poorly in multiple domains, which were clearly identified four years later in the Wheel of Violence (Pence & Paymar, 1993). Given this assumption, it was believed that addressing how male IPV offenders viewed women in general would subsequently trickle down to influence how they treated their wife/partner. The curriculum utilizes a group format with two goals: 1) The model embraced social learning theory based on the premise that men were taught by

their fathers and society that men have an inherent 'right' to hit (a.k.a. batter) their wife, as they see fit (Worell, 2002); and 2) "Batterer intervention was initiated as a first step toward changing batterers and [simultaneously] raising cultural awareness of the problem [power and control IPV]" (Healey, Smith, & O'Sullivan, 1998, p. vii).

The format identified in the Duluth offender module's curriculum became the boilerplate for most IPV offender re-education programs within states that established IPV statutes or guidelines, including some that subsequently self-identified as evidence-based (Colorado Domestic Violence Offender Management Board, n.d.; Gover, 2011, Maine Coalition to End Domestic Violence, 2013; Maiuro & Eberle, 2008; Batterer Intervention Committee Advisory Committee, 2015, February 5). The Duluth offender curriculum is a psychosocial educational approach designed to "diminish the power of batterers over their victims and to explore with each abusive man the intent and source of his violence [i.e., patriarchal attitudes] and the possibilities for change through seeking a different kind of relationship with women [through his adoption of equalitarian attitudes]" (Pence & Paymar, 1993, p. 1).

Forty-five states had implemented statutes for IPV offender education programs by 2007 (Maiuro & Eberle, 2008). Providers from the majority of the states (n=30) responded to a survey that asked about the state's IPV offender education statutes to explore the influence of power and control IPV theory (Maiuro & Eberle, 2008). This theory can remain the foundation even when state guidelines supported expanding the IPV offender program curriculum (Colorado Domestic Violence Offender Management Board, n.d.; Gover, 2011). Because the Duluth offender re-education program utilizes cognitive reframing strategies, facilitators and others often incorrectly refer to it as

treatment (Stark, 2006). It is important to note that the Duluth offender re-education module is not 'treatment.' For, treatment is provided to individuals who have been diagnosed with a mental health disorder as identified in the DSM 5 by an individual with a Master's degree or a Ph.D. in clinical psychology. It is not appropriate to refer to the Duluth offender module as psychoeducation because the education is not provided in conjunction with individual therapy nor aligned with therapeutic objectives. The Duluth offender module's scope has not been enchanced over the years. In the offender re-educaion program, it neither included educational material on mental health symptoms associated with exposure to family-of-origin violence nor any other associated consequences from this form of ACE (Maiuro, & Eberle, 2008, Oregon Administrative Rules, 2014; Pence & Paymar, 1993). Shelter-advocates strenuously opposed couple counseling, even when an intact couple *voluntarily* engages in counseling and they report IPV (Dark, 2009), and this is reflected in clinical recommendations for mental health agencies (see DeBoer, Rowe, Frousakis, Dimidjian, & Christensen, 2012).

Offender program facilitators were ascribed as providing 'clinical' expertise (Gover, 2011). However, to be certified as a provider (i.e., facilitator) does not require a college degree, and all of the training can comprise of attending workshops taught by shelter-advocates or their affiliates. For example, in Oregon per the state administrative rules 137-087-0080 3b:

> Facilitator Training. A facilitator shall document completion of eighty (80) hours of training regarding domestic violence specific issues. Forty (40) hours of the training must be provided by a nongovernmental victim advocacy program approved by the local Council or in the absence of a

> Council, the LSA [local supervisory authority] or MSA [mandating supervisory authority]. (Department of Justice, n.d.)

In Oregon, these guidelines were implement based on recommendations from the batterer intervention program advisory Committee (Oregon Department of Justice, 2020). But, there is no training curriculum outline, nor is there a list of approved agencies, within the state of Oregon or nationally, that conduct facilitator training or provide oversight to ensure training quality (Oregon Department of Justice, 2020; C. Huffine, personal communication, April 16, 2020). More concerning, the IPV offender program facilitators are not required to inform participants of the grievance protocol, for example, when the provider refuses to 'graduate' the participant from the program (Domestic Violence Program Training, 2020). In Oregon, each county's probation and parole department has a list of approved IPV offender program providers. Yet, this department provided no oversight nor has the ability to address offenders' grievances (e.g. facilitator's behavior; Client A, personal communication, September 2, 2019). In addition, because the participants are not receiving mental health treatment, their privacy and personally identifiable information are not protected by the Health Insurance Portability and Accountability Act (Horner & Wheeler, 2005). In essence, program participants have no guarantees of confidentiality. For example, the Oregon Administrative Rule (137-087-0030 2c; state level statute), explicitly decrees that providers are required to provide probation officers with information without the participant's consent, that would be considered confidential at a mental health agency under HIPPA (Department of Justice, n.d.). These statutes were developed by shelter advocates and their affiliates (e.g., Gover, 2011, Batterer Intervention Committee Advisory Committee, 2015, February 5).

The Duluth offender re-education program's group facilitation strategy typically requires a woman facilitator who co-facilitates with a man (e.g., OAR 137-087-0065 4; Department of Justice, n.d.). Taking direction from a woman enhances the male offender's ability to identify his own patriarchal attitudes (V. Brail, personal communication, March 14, 2013). Mild to medium confrontation is a feature of the protocol to encourage and teach men how to develop a personal commitment to relinquishing their position of power (Scott, King, McGinn, & Hosseini, 2011). Because a woman must be capable of eliciting fear in a male partner/husband, and the Duluth offender module holds that women are rarely able to accomplish this, her acts of assault do not meet the accepted criteria of IPV (Dobash & Dobash, 1992; Saunders, 1986; V. Brail, personal communication, March 14, 2013). Consequently, when a woman is arrested for IPV, the Duluth informed curriculum emphasizes empowering her to develop a safety plan during the period of her transition out of the relationship; for this program encourages women IPV offenders to dissolve the relationship with her current partner (Pence & Paymar, 1993; Scott, et al., 2011).

Researchers who framed their studies with power and control IPV theory posited that the current intervention system (arrest and adjudication followed by participation in a program that addressed power and control behaviors) was associated with reductions in recidivism: "Program completion reduces the likelihood of re-arrest between 39% and 62% after controlling for social, motivational, and psychopathological factors, as well as violence history [of the male IPV offenders]" (Bennett, Stoops, Call, & Flett, 2007, p. 42, italics added). The various items controlled for were reported as: employment, race, psychological abuse, family-of-origin violence, trauma-symptom severity, primitive

defenses (e.g., inability to trust), trait anger, and alcohol use (Bennett et al., 2007). Not only was this list of control variables consistent with victims and male IPV offender's reports to shelter-advocates (Pence & Paymar, 1993; Walker, 2009), it was consistent with risk factors identified in studies on IPV use (Capaldi et al., 2012; Shorey et al., 2011; Stith, Smith et al., 2004). Gondolf (2007) identified the power and control IPV program as successful based on a four-year multi-site study. Yet, like Bennett et al., this study did not include a control group (i.e. individuals who did not attend a program). Consequently, the program's results included the impact of the arrest and adjudication process. Shelter-advocates posit that recidivism rates are due to the offender's limited participation in the program. Duluth module facilitators felt that the majority of participants (58%) completed the program with unsatisfactory results (Scott et al., 2011). Traditional IPV advocates cited the treatment dropout and recidivism rates of this population as signs that these men were 'choosing' to offend (Gondolf, 2007). However, a study in which 486 participants were assigned to either power and control IPV group or a group that replaced the confrontive practices with motivational enhancement therapy approaches, the latter group experienced an 84% completion rate, yet there was no decrease in the recidivism rates (Scott et al., 2011).

It is crucial to note that when the IPV offender re-education program was isolated from the arrest and adjudication process, the behavioral changes (i.e., decreases in IPV use) were attributed to the arrest and adjudication process, with none to very limited incremental benefits arising from attending an IPV offender re-education program (Babcock, Green, & Robbie, 2004; Stover, Meadows, & Kaufman, 2009; Scott et al., 2011). In addition, studies exploring IPV using the four constructs associated with the

social learning model reported that during childhood, imitation from having witnessed parental IPV was not associated with IPV use in the participant's current relationship; rather, it was corporal punishment by they participant's mother that had the greatest assocation with IPV use (Wareham, Boots, & Chavez, 2009). In a community study that explored the social learning model, immitation (i.e., witnessed parental IPV) was not associated with IPV use in the young adult's current relationship, however immitation predicted past partner IPV use (Cochran, Maskaly, Jones, & Sellers, 2017), and the same result was identifed with a large community study of teen/young adults (Liu, Mumford, & Taylor, 2018).

The Present Study

This dissertation builds on the existing IPV scholarship by exploring ACE using items in three areas of an individual's childhood (family-of-origin violence, impaired parenting, individual adversities) to investigate the association between ACE and IPV use using a dataset from a national community study in a secondary analysis. Looking at *lifetime* IPV use supports a longer perspective. Most IPV studies recruited participants from offender education programs, which limited the scope to participants' current relationship – in effect, IPV use within the past 12 months. The dataset that this study draws from provided a unique opportunity because it was designed to provide researchers with the ability to explore correlates to mental health disorders which included questions about IPV use and a plethora of ACE items. This enabled including items that are not typically combined in the same study (e.g., family-of-origin violence and impaired parenting) as well as ACE experiences that are not associated with one's family (e.g., girlfriend was pregnant). In addition, embedding questions on IPV within a study on

mental health might decrease the likelihood of reporting biases because how a study was presented to the participant can influence their response (see Dixon & Graham-Kevan, 2011). For example, studies framed as research on crime can result in lower than expected IPV use rates because participants do not identify their behavior (e.g., pushing, shoving or slapping) with a partner as a crime (Mihalic, & Elliott, 1997). It is also possible that a mental health study mitigated misrepresentation, for during one IPV study, some men misrepresented their values by lying about their beliefs (Milner & Gold, 1986) which could conceivably extend to denying IPV use.

CHAPTER II: LITERATURE REVIEW

Theoretical Framework

Power and Control IPV Theory. Most state and national policies as well public research funding opportunities utilize the power and control IPV theory (Corvo, 2014; (National Coalition Against Domestic Violence, 2006). This theory emphasizes the influence of nurture by fathers on male children's development (Pence & Paymar, 1993; Walker 1984, 2009). Power and control IPV theory has remained relatively unchanged since 1980 with the inception of the IPV offender re-education program, a module of the Duluth model (Bates, Graham-Kevan, Bolam, & Thornton, 2017; Cannon, Hamel, Buttell, & Ferreira, 2016; Domestic Abuse Intervention Programs, n.d.a; Eagly et al., 2012).

***Family-of-origin Physical Aggression*.** In the 1970s, the cultural backdrop and shelter-advocates' experiences lead virtually all academics who initiated the research on power and control IPV (Straus, 1973) to frame it through a social learning lens (Straus, 2008). Akers (1973, 1998) identified four components to social learning theory: definitions, differential association, imitation, and differential reinforcement. In power and control IPV theory, the application of social learning theory was refined to emphasize imitation as the primary mechanism to explore intergenerational family-of-origin physical aggression (family-of-origin violence), specifically, a boy having witnessed IPV initiated by his father and/or experienced parental physical abuse by his father. Imitation is the process in which the person emulates the behavior of respected, admired, and frequently observed role models, such a parent. Imitation was the basis of intergenerational transmission theory, which emphasizes chronic victimization

(experiencing multiple episodes of one type of victimization; Delsol & Margolin, 2004). In power and control IPV theory, intergenerational transmission theory focused on a father's use of physical aggression toward either his wife or children, used as a disciplinary action (Wareham et al., 2009). Intergenerational transmission theory is used to explain the multiple types of aggressive actions a man exhibits towards his partner.

Shelter-advocates maintained that an association existed between men who reported witnessing parental IPV and their own subsequent IPV use. This association was validated by research results. For, 55%-70% of men who reported IPV use also reported witnessed parental IPV and/or parental physical abuse, compared to 20%-28% of nonviolent men (see Delsol & Margolin, 2004). An association was identified between witnessed parental IPV and the individual's own IPV use (Fazel, Smith, Chang & Geddes, 2018; Kimber, Adham, Gill, McTavish, & MacMillan, 2018). For example, youth (12 years old and older) who endorsed witnessed parental IPV were four times more likely to report IPV use themselves (Liu et al., 2018). Pence and Paymar (1993) observed that "the history of a man who batters is often a history of abuse …alcoholism, racial and class oppression, and the denial of love and nurturing as a child" (p. 4). While possible risk factors were identified as common among male IPV offenders, shelter-advocates proclaimed and, during this period, researchers reported that these associations with IPV use were spurious. For example, when a study framed by power and control IPV theory had results that suggested other risk factors, such as alcohol use which frequently co-occurred with IPV use, they were dismissed (Gelles, Cavanaugh, & Loseke, 2005; Kantor & Straus, 1990).

Conflicting Research. During the past forty years, research results have emerged that conflict with power and control IPV theory. Dutton and Golant (1995) identified that personality, attachment, and anxiety disorders were prevalent among men who endorsed IPV use; they suggested that mental health treatment should be considered as an IPV offender treatment modality. Corvo (2014) posited that IPV was an ineffective form of coping and identified deficits associated with IPV use: executive functioning, specifically those related to cognitive and affective (i.e., emotional) processing. He also presented research documenting how alcohol consumption reduced access to executive functioning skills (i.e., prefrontal cortex), as well as on how physical aggression was associated with neuro-functioning problems.

Developmental Systems Theory. When Richard Mulcaster initially introduced the notion that both nature and nurture influenced child development, more than three centuries ago, he viewed them as collaborative (Meaney, 2010). Over time, there was a philosophical shift that resulted in treating nature and nurture as independent agents (Meaney, 2010). Discussions on human development frequently continued to contrast nature, often with pre-deterministic overtones, with nurture. This contrast suggested either a reinforcement or counterbalance of nature. Oyama (1985) recommended exploring alternatives to the linear approach typically employed in nature discussions because it presupposed that parental genes contained *all vital* developmental information that each individual's system needed. The developmental systems theory (Griffiths & Tabery, 2013) presents such an alternative. It accounted for nature and nurture research findings by identifying bidirectional interactions across multiple components (genetic, neural, behavioral, environmental) that influence a phenotype (a gene's physical

expression) development. Moore (2015) explained that genes contain a script, and a gene's interaction with other components in an individual's external and internal environment impact the expression of a gene's script to produce the final product – a phenotype, which consists of two strands called alleles. This process is similar to that of producing a play: Even with a well-written script, a multitude of other factors will also influence the audience as actors deliver their dialogue.

A phenotype can define a characteristic, such as eye color, and determine protein production, such as serotonin. In addition, phenotypes are *not* stable throughout an individual's lifetime, for they are recreated as cells die using the material currently available within the body as well as any present environmental influences available (Moore, 2015). For example, 10-20% of individuals experienced an eye color change by adolescence as do some adults, while the genes remained consistent throughout these individuals' lifetimes (Imesch, Wallow, & Albert, 1997). Exposure to ACE (e.g., dysfunctional nurturing, significant adversity) can interact with an individual's biophysical makeup (i.e. nature) with deleterious results. Specifically, it appears that ACE can the impact the systems involved in emotional regulation, which are associated with an increased likelihood of IPV use. There were examples in various areas in neuroscience research. For example, genetic research reported that when one or both alleles for the 5-HTTLPR gene (serotonin) were short, it increased the risk of depression (Karg, Burmeister, Shedden, & Sen, 2011) and depression increased the risk of IPV use (Askeland & Heir, 2014; Dowd, Leisring, & Rosenbaum, 2005).

Most gene damage, for example allele strands that broke, is corrected by a biological repair processes (Núñez, Hall, & Barton, 1999). In other cases, gene damage

has resulted in mutations (Kawanishi, Hiraku, & Oikawa, 2001). Epigenetic research explores the processes that alter gene expression without changing the DNA sequence. For example, via an epigenetic mechanism (methylation) ACE was associated with a blunted cortisol stress response (Houtepen et al., 2016). Increased methylation, a process that modifies the function of the genes and affects gene expression, can have a significant impact on an individual's emotional responses. For example, methylation of the brain-deprived neurotrophic factor (BNDF) gene (a protein that assists with nerve growth) restricted neuron development, plasticity, and connectivity. Increased methylation can reduce resilience to stressors (Keller et al., 2010). Increased methylation of a serotonin gene (SLC64A) correlated with greater activity in the amygdala (Nikolova & Hariri, 2015), which was associated with decreased prefrontal cortex activity (see Heinz, Beck, Meyer-Lindenberg, Sterzer, & Heinz, 2011), resulting in emotional dysregulation. The prefrontal cortex intelligently regulates our thoughts, actions, and emotions through its extensive connections with other brain regions (Arnsten, 2009). However, these connections are bidirectional, and when the amygdala is hyperactive the reduced access to the prefrontal cortex can extend to completely bypassing the pre-frontal cortex (Arnsten, 2009).

Research has identified that the prefrontal cortex's association with emotional dysregulation is nuanced. The left pre-frontal area was associated with positive affect and the right pre-frontal was associated with negative affect. Emotional abuse, independent of physical or sexual abuse, has been associated with a significant reduction in the left dorsal medial pre-frontal cortex volume (van Harmelen, van Tol et al., 2010). This area is involved with the system that excludes the amygdalae when engaging emotional

regulation strategies (see Phillips, Drevets, Rauch & Lane, 2003) – in effect, over-riding the amygdalae's fight-flight-freeze response. Increased activity in the left-prefrontal cortex and decreased activity in the right-prefrontal cortex was associated with anger and aggression (Harmon-Jones, & Sigelman, 2001). Individuals with increased activity in the right-prefrontal cortex were more likely to be impulsive (Sutton & Davidson, 1997). Having less volume in the left pre-frontal cortex could be an adaptive process to enhance the individual's response; perhaps with less architecture the response timeframe is shortened. Adverse childhood experiences can influence multiple neuroanatomical structures and biological systems that can increase the risk of emotional dysregulation (Lobo et al., 2011; Teicher, Anderson, Ohashi, & Polcari, 2014), which, in turn, contributed to an increased risk of IPV use (O'Leary, Slep, & O'Leary, 2007). There have been more than 180 original studies which either demonstrate an association between ACE and alterations in brain structure, function, connectivity, and network or identified that these changes have extended into adulthood (see Teicher, Samson, Anderson, & Ohashi, 2016).

While the brain's development is directed by genes, for some structures there are critical periods during childhood in which ACE can influence developmental trajectories based on the type(s) of maltreatment, frequency, and length of exposure (Raymond, Marin, Majeur, & Lupien, 2018; see Teicher et al., 2016). This included heightened periods of plasticity for brain development that were distinct yet overlapped and influenced an individual's sensory, motor, language, and higher cognitive functioning, which included learning strategies to offset emotional dysregulation (Hensch & Bilimoria, 2012). Importantly, neuro modifications can happen as a function of trauma

exposure regardless of age (Houtepen et al., 2016). A gene consists of two alleles each with a different sequence variation (i.e., one from mom, the other from dad). Each allele can be long or short (i.e., a variant). A long allele has increased functionality compared to a short allele. There are three allele combinations for every gene: short/short (s/s), short/long (s/l), and long/long (l/l). An example of the influence of nature on nurture was exemplified by Kaufman et al. (2006) who explored the variant site of 5-HTTLPR (serotonin transporter gene) and the Met BNDF (supports the survival of nerve cells) among youth removed from their home and placed in foster care. Youth with the l/l or l/s alleles of 5-HTTLPR had lower depression scores than those with the s/s allele combination. Depression symptoms of youth with the s/s allele combination were ameliorated in youth who reported a better relationship with an adult support person while in the foster care placement. Another example, young adults with a history of emotional abuse reported higher rates of rumination than those without that ACE, however only for youth with a short allele for 5-HTTLPR (Antypa & Van der Does, 2010). The dysregulation of the hormone cortisol has been associated with sexual abuse among both male and female children (Şimşek, Kaplan, Uysal, Yüksel, & Alaca, 2016). There can also be variances by sex. Cortisol dysregulation has been associated with childhood physical abuse in women but not men (Carpenter, Shattuck, Tyrka, Geracioti, & Price, 2011).

Allostatic Load Model. The power and control IPV theory presumes a homeostasis model; when a stressor is experienced, such as family-of-origin violence, the indivudal's body reacted then returned to its original set point (Wilkinson & Goodyer, 2011). In power and control IPV theory, there is an inherent baseline that everyone's

biological system maintains throughout their lifetime. In contrast, the allostatic model provides a framework to explain the development of an adaptive emotional and behavioral response(s) due to exposure to ACE, such as family-of-origin violence, which is observed by other people as maladaptive when the individual became an adult. Wilkinson and Goodyer (2011) contrasted the homestatsis model to an allostatic model. An allostatic model describes an organism, such as humans, that posses an adaptive system. This organisim engages in ongoing survelience and evaluation in order to identify highly threatening (i.e. noxious-harmful as opposed to noxious-irritating or positive) environmental stimuli. For example, E. coli bacterium has a complex sensory system that propels it away from toxins and towards nutrients (Qi & Alder, 1989). When encountering a noxious-harmful stimulus, some organisms can self-modify its response system to enable a faster response when a *similar stimuli* is encountered in the future. In this case, prior exposure has adjusted the organism's systems' set point(s). The human nervous system was designed to determine the safety or threat level of its immediate environment and adapt accordingly; survival has depended on the development of a subsequent automated response to address the presence of a similar stimuli (Lang, Bradley, & Cuthbert, 1998; Porges, 2007). Due to this modification, a full cognitive assessment is no longer needed because the time this process takes will increase the risk of a harmful outcome to the individual. This explains the decreased access to or the bypassing of the prefrontal cortex when the amygdala becomes hyperactive. An adjusted set-point is referred to as the *allostatic load* (McEwen & Stellar, 1993). Davies, Sturge-Apple, and Cicchetti (2011) used an allostatic heuristic to frame the impact of witnessed parental IPV:

> Over time, the resulting allostatic load is reflected in…the manifestation of psychological problems…Although allostasis serves an adaptive function of promoting survival, recurring cycles of allostasis produced by histories of witnessing interparental aggression are proposed to result in progressively greater changes in the operation of children's stress-sensitive neurobiological systems. (p. 801)

In summary, a healthy brain is designed to self-modify its response pathways, which includes nervous systems, motor responses, emotional response pathways, and cognitive pathways after contact with noxious-harmful stimuli. This results in a *semi-permanent* biophysiological adjustment (Ganzel, Morris, & Wethington, 2010).

Ganzel et al.'s (2010) allostatic model theory supported the inclusion of ACE experiences beyond witnessed parental IPV and physical parental abuse, for example bullying, neglect, and discrimination, as well as adulthood adversity and abuse, for example combat exposure, rape, and power and control IPV. Ganzel et al. explained that when an individual is exposed to an emotionally challenging event, the brain functions as the central mediator and provides direction to multiple regions. At any age, a healthy brain will identify whether avoidance strategies (fight, flight, freeze) should be initiated and assesses the value of establishing a protocol to routinely initiate when a similar stimulus (e.g., emotion, smell, sound) is encountered in the future (see Porges, 2007).

The type and extent of a self-modification process can be a influenced by: stimulus dose (single, multiple), intensity, form of ACE (e.g. emotional neglect, harsh corporal punishment; Barrett, Teesson, & Mills, 2014; Foran & O'Leary, 2008; Roberts, McLaughlin, Conron, & Koenen, 2011), sex (Teicher et al., 2003), co-occurrence of

ACEs (Hamby, Finkelhor, Turner, & Ormrod, 2010), genetic, biological, and/or anatomical structural factors (Carballedo et al., 2012; Halperin et al., 2006; Kaufman et al., 2006; Rao et al., 2010), and age at the time of ACE exposure (Pechtel, Lyons-Ruth, Anderson & Teicher, 2014; Riem, Alink, Out, Van Ijzendoorn, & Bakermans-Kranenburg, 2015). It should be noted that a self-modification process can be mitigated over time or averted by the availability of protective factors (Hazzard, Celano, Gould, Lawry, & Webb, 1995; Laufer & Solomon, 2006). A protective factor may influence, modify, ameliorate, and alter how a person responds to an adversity that places him or her at risk for a maladaptive outcome (Rutter, 1985). This factor may be due to either nature (e.g., two long serotonin alleles) and/or nurture (e.g. emotionally healthy parents).

The brain assumes the environment an individual is raised in is a microcosm of the environment that the individual will inhabit throughout his/her lifetime. The development of a conditioned response is the brain's way of accommodating the specific threats in the environment an individual lives in, thereby increasing the likelihood of his or her survival (LeDoux, 2014; Porges, 2007). The brain will execute the modified responses, even when the stimuli associated with the original perceived threat is *no longer* significant or dangerous in the current circumstances (Ganzel et al., 2010; Porges, 2007). In these situations, the individual's behavioral response is interpreted by others as more extreme than the situation warrants, or in other words – a response that is out of proportion. This 'programed' reaction can be likened to the development of an emotional reflex, similar to the physical knee-jerk reflex. When triggered, the fight-flight-freeze system is prioritized over other systems including cognitive access of executive functioning tools (e.g., planning, problem solving; Arnsten, 2009). Teicher et al. (2003)

explain that

> exposure to significant stressors [particularly] during a sensitive developmental period causes the brain to develop along a stress-responsive pathway . . . This pathway, however, is costly as it is associated with an increased risk of developing serious medical and psychiatric disorders and *is unnecessary and maladaptive in a more benign environment*. (p. 39, italics added)

The types of changes that were adaptive at a specific age (e.g. age four) can have deleterious consequences at a later age (e.g. age 19) and include, but are not limited to: enhanced feelings of fear, problems with verbal and memory skills, mental health issues, enhanced negative automatic self-association, avoidance, and negative affect (Briere, Hodges, & Godbout, 2010; Martins, de Carvalho Tofoli, Von Werne Baes, & Juruena, 2011; van Harmelen, de Jong et al., 2010; Watts-English, Fortson, Gibler, Hooper, & De Bellis, 2006). When a maladaptive response is triggered, cognitive processing skills that support *effective* coping, such as self-soothing, thought redirection, and healthy communication strategies are rendered temporarily inaccessible — therefore ineffective. The individual may be unaware that his or her response in the current situation is maladaptive i.e., out of proportion (see LeDoux, 2014). For example, reactionary emotional aggression was associated with ACE (Murray-Close, Ostrov, Nelson, Crick, & Coccaro, 2010). Conditioned responses can be associated with events the individual may or *may not* remember (Ganzel et al., 2010; see LeDoux, 2014). When the maladaptive response has been neutralized, for example through mental health therapy, the individual

may not have effective, nuanced coping skills due to a lack of opportunity to learn and practice them.

General Aggression Theory. While the developmental systems theory and the allostatic model framed the development of maladaptive responses, their relationship to IPV is not clear cut. DeWall, Anderson, and Bushman (2011) proposed that general aggression theory provided a viable framework for IPV. This theory identified three primary components to assess when conflict between couples included IPV: "(1) person and situation inputs, (2) present internal states (i.e., cognition, arousal, affect, including brain activity), and (3) outcomes of appraisal and decision-making processes" (p. 246). Unless identified otherwise, the following research studies were conducted with individuals (men and women) recruited from the community or in IPV offender re-education programs, as opposed to the partners of women using shelter services.

Person and Situation Inputs. Risk factors that increased the likelihood of IPV use included: emotional instability (Archer et al., 2010; Hettrich & O'Leary, 2007; Karakurt, 2008; Morash, Kashy, Cobbina, & Smith, 2018); high levels of past-12-month stressors (Cascardi & Vivian, 1995; Leisring, 2012; Roberts et al., 2011; Stuart, Moore, Hellmuth, Ramsey, & Kahler 2006) which included higher unemployment rates (Copp, Kuhl, Giordano, Longmore, & Manning, 2015) and a decreased capacity to manage immediate stressors (DeWall, Baumeister, Stillman, & Gailliot, 2007); a high ACE exposure level (i.e., polyvictimization; Roberts et al., 2011); age and violence towards non-family members (Spencer, Mendez, & Stith, 2019). Problems with emotional regulation were associated with emotional IPV use (Lee, Rodriguez, Edwards, & Neal, 2020).

Meso (i.e., community) factors can exacerbate other risk factors. Studies have reported mixed results when looking at residential stability's association with IPV use (see Pichevsky & Wright, 2012). Concentrated neighborhood disadvantage was associated with IPV use (Wright & Benson, 2011). Higher levels of anger interacts/ amplifies the effect of higher levels of subjective or implicit current neighbor-hood disadvantage which increased the likelihood of IPV use (Copp et al., 2015). Living in the United States, a country with high income inequity or a high income, resulted in a distinct increased in some risk factors associated with IPV (Spencer, Mendez, & Stith, 2019).

Present Internal States. Both women and men who endorsed IPV use reported personal and situational inputs that included: emotional hurt, anger, punishment, jealousy, and bad mood (Caldwell, Swan, Allen, Sullivan, & Snow, 2009; Epstein-Ngo et al., 2013; Archer, Fernández-Fuertes, & Thanzami, 2010; Follingstad, Wright, Lloyd, Sebastian, 1991; Hettrich & O'Leary, 2007; Harned, 2001; Langhinrichsen-Rohling, McCullars, & Misra, 2012; O'Leary et al., 2007; Ward & Muldoon, 2007; Whitaker, 2014). An individual's mental health symptoms were risk factors for IPV use. Increased levels of depression (see Holtzworth-Munroe, Bates, Smutzler, & Sandin, 1997; Oram, Trevillion, Khalifeh, Feder, & Howard, 2014; Spencer, Mallory et al., 2019), and anxiety (Oram et al., 2014; Spencer, Mallory et al., 2019) were associated with an increased likelihood of IPV use. Post-traumatic stress symptoms have also been associated with both mild-moderate and severe IPV use (Rosenbaum & Leisring, 2003). PTSD co-occurring with emotion dysregulation, negative self- concept, and/or disturbances in relationships was associated with emotional IPV severity (Gilbar, Dekel, Hyland, & Cloitre, 2019).

Deficiencies in neuroanatomy/biology were risk factors for IPV use (George et al., 2004; Lee, Chan, & Raine, 2009; Zhang et al., 2013).

Outcomes of Appraisal and Decision-Making Processes. Outcomes of appraisal and decision-making processes were associated with IPV use. Relationship discord was associated with an increased risk of IPV use (Hettrich & O'Leary, 2007; Karakurt, 2008; Pan, Neidig, & O'Leary, 1994) and arguments escalated to include physical contact (Cascadi & Vivian, 1995; Hettrich & O'Leary, 2007; Whitaker, 2014). When both partners were emotionally dysregulated, it increased the likelihood for physical IPV use (Lee, Rodriguez, Edwards, & Neal, 2020). IPV use in the United States was associated with relationship dissatisfaction and emotional abuse perpetration (Spencer, Mendez, & Stith, 2019). One partner's use of IPV might enable the other partner to justify their own IPV use. An example of situational couple IPV: when arguing, a man's inability to allow his partner walk away or if he attempted to leave and was pulled back into argument the argument was associated with IPV use (Cascardi & Vivian, 1995). In addition, alcohol consumption increased the odds of IPV use (Cafferky, Mendez, Anderson, & Stith, 2018; Cunradi, 2007; Fals-Stewart & Kennedy, 2005; Foran & O'Leary, 2008; O'Farrell, Fals-Stewart, Murphy, & Murphy, 2003). For, alcohol reduces accesss to cognitive functioning (see Heinz et al., 2011; Schafer & Fals-Stewart, 1997).

Relevant Cognitive Neuroscience Research. Advancements in neuroscience research and its application to IPV use suggested the possibility that addressing behavioral issues, such as IPV use, could be enhanced through an interdisciplinary framework.

Emergence of Technology in Psychology Research. Advancements in technology enabled sweeping revisions to understanding the inter-relationship between

nature and nurture, and how their interaction influenced behavior. Micale (2001) identified Jean-Martin Charcot as a pioneer neuro-physician. In the late 1870s he noticed that among railway accident survivors, a minor physical injury with no indication of physical structural damage could result in symptomology that consisted of disabling physical and *psychological* features. In addition to the physical symptoms, emotional symptoms often co-occurred: depression, sleep disorders, phobias, mental confusion and lowered intellectual efficiency. These symptoms could disappear suddenly or last for months and years. Blakemore (2012) described the research environment in the 1950s, when ground breaking studies in neuroscience emerged from animal research. In these studies, the neural mechanisms underlying emotional learning and memory were extrapolated to human behavior. Animal research often lead the way for human studies and theory development. By the late 1960s and 1970s, research that utilized post-mortem human brains suggested brain development did not stop in childhood – there were areas, such as the prefrontal cortex, that appeared to continue developing beyond this period (see Blakemore, 2012). Other areas of research that provided insight into neuro mechanism development included pharmacology (see Dolcos, Katsumi, Denkova, Weymar, & Dolcos, 2017), physiological responses (e.g., increased heart rate) which indirectly reflected activity in the brain (Critchley et al., 2003), and neuropsychological assessments (i.e., performance tests; Teichner, Golden, Van Hasselt, & Peterson, 2001).

Blakemore (2012) explained that prior to 1973 there was no way to image the brain of a living person. In 1973, computers emerged that enabled computed tomography (CT scanning). This technique allowed viewing multiple slices of the same brain. It was a slow process, taking all night to process one image. Image

resolution was limited to a 64 x 64 matrix. To acquire an image, participants were injected with an iodinated contrast agent. This agent blocked the x-ray to enable structure and image comparisons. Today's CT scans will produce images in milli-seconds with the resolution at sub-millimeter level for the spatial slices. Magnetic resonance imaging (MRI) also emerged in the 1970s. The initial technology only provided low grade spatial images up to 1.5 tesla. "Tesla is a measure of field for magnetic strength. The earth's magnetic field, example, is .00005 Tesla. Thus a 1.5 T magnet has a field strength 30,000 times stronger than that of the earth" (Bradley, 2008, p. 352). A higher tesla provided a greater resolution or a faster scan at a lower resolution (Nowogrodzki, 2018).

Functional magnetic resonance imaging (fMRI) was introduced in 1991 (Rosen, 2011). Two and three Tesla fMRIs are now commonly used and in 2017 the first 7-tesla fMRI was approved for clinical use (e.g., research; Nowogrodzki, 2018). The fMRI technology has advantages over prior imaging options: a noninvasive procedure (no injection of a die to trace), less expensive, faster execution, higher level of accuracy, and provides a better resolution for soft tissue areas, such as the brain (Kayser, 2019). This technology allowed studying a living person's brain. For example, it appears that the pre-frontal cortex, used in problem solving, is one of the last areas in the brain to develop; this was identified using fMRI for four scans conducted on 13 individuals, ages 4 to 21, roughly every two years for 8-10 years (Gogtay et al., 2004). The fMRI enables tracking brain activity as humans view stimuli, hear sounds, consider choices, and make decisions (Kayser, 2019). This allows researchers to understand how different areas of the brain interact. Functional magnetic resonance imaging is able to "identity the location of task-

related brain activity to within a few millimeters in both cortical and subcortical brain structures" (Ochsner & Lieberman, 2001, p. 718). The use of fMRI to explore the cognitive regulation of emotions gained traction in the late 1990s (see Ochsner & Lieberman, 2001). For example, the number of papers using neuroimaging with youth has increased year-over-year since 1996 (Blakemore, 2012). Functional magnetic resonance imaging is an extremely powerful technique that affords excellent spatial resolution (geographical area) and temporal resolution (how closely the measured activity corresponds to the timing of the actual neuron activity). This level of nuance enables researchers to target specific behaviors, such as IPV use, to better understand the brain functioning-emotion-behavior connection.

No doubt, advances in technology accelerated interest in understanding how ACE was associated with changes in neuropsychological functioning, particularly since the year 2000. For example, Frodl and O'Keane's (2013) review article, *The association between HPA axis functioning and brain structure in order to obtain general findings that can be applied to depression* included 45 articles of which 25 included an ACE assessment. Two of these articles were published in 1997, 13 between 2000 and 2009, and 10 between 2010 and 2012. There were almost as many articles published in the final three years as there had been in the previous ten years. In Stiles' (2011) review of the research on brain development's relationship to behavior, she states:

> The models most behavioral scientists evoke are not current, and thus their underlying assumptions about critical issues concerning the origins of behavior are out of date. Alignment of our models of brain and behavioral development is essential for progress in understanding of how humans

develop, biologically, cognitively, or socially. (p. 4)

It is now understood that neuropsychological functioning mediates an individual's interpretation of context(s), which may increase or decrease the probability of a violent act occurring (Cohen et al., 2003). Neuroscience research has provided surprising information in recent years, presenting an opportunity to reexamine the theoretical premise of ACE's relationship to IPV, including family-of-origin violence.

ACE Neuroscience Research. There is an association between emotional dysregulation and ACE. Rinne-Albers, van der Wee, Lamers-Winkelman, and Vermeiren (2013) reviewed neuroimaging studies (e.g., fMRI) with youth participants. They reported that ACE was consistently associated with decreased total brain volume and structural abnormalities of the corpus callosum (reduced cross-sectional area and connectivity). The corpus callosum connects the left and right hemispheres of the brain. Youth's symptoms included problems with perception, comprehension, and response. Teicher et al. (2004) reported that multiple areas of the corpus callosum were impacted by neglect. Of note, reductions associated with neglect were noted in the corpus callosum among boys and in distincly different area of this structure with sexual abuse among girls. In addition, Rinne-Albers et al. concluded that there appeared to be time-critical windows during which a developing brain's structure and functioning is highly susceptible to long-lasting effects from exposure to ACE. Cassiers et al.'s (2018) review reported sexual abuse, emotional abuse and neglect all resulted in a reduced volume in the outer layer of the frontal cortex and that there were specific areas impacted, based on the form of ACE: sexual abuse was linked to structural deficits in the reward circuit and the amygdalae were hyperactive during sad autobiographic memory recall. Emotional

abuse was associated with abnormalities in fronto-limbic socioemotional networks. Neglect had a relationship with disturbed white matter integrity and connectivity in several brain networks.

A longitudinal study by Pechtel et al. (2014) compared 18 participants tracked from infancy until they turned 20 years old to 33 cross-sectional healthy adults in their 20s. Exposure to ACE (emotional neglect, physical neglect, parental verbal abuse) impacted the amygdalae's development when the participants were 10-11 years old and the right hippocampus when they were 7-14 years old. Klumpers, Kroes, Baas, and Fernández (2017) reported that the results from assessing the bed nucleus of the stria terminalis and amygdalae suggested that "early life stress may tip the neural balance toward acute threat responding and via that route predispose [an individual] for affective [emotional] disorder" (p. 9,645). Amygdalae play a significant role in the acquisition, storage, and expression of adaptive responses to aversive stimuli (i.e. conditioned fear response; see Hartley & Phelps, 2010; Lanteaume et al., 2007). The amygdalae were involved in developing a Pavlovian conditioned stimulus (see Cardinal, Parkinson, Hall, & Everitt, 2002). The amygdalae can discern stimuli based on the behavioral significance that the stimuli had attained through either unconscious or conscious processes (Morris, Öhman, & Dolan, 1998). Studies have associated irregularities (structural volume, hyperactivity) in the amygdalae with: impulse control problems (Coccaro, McCloskey, Fitzgerald, & Phan, 2007; Depue et al., 2014), decreased prefrontal cortex activity (Hayes, Hayes, & Mikedis, 2012), and decreased emotional regulation (Lobo et al., 2011).

Neuroscience research supported the premise that consequences from exposure to ACE can extend into adulthood. Woon and Hedges's (2008) meta-analysis included 21 studies (1997-2004) that compared PTSD participants to non-PTSD participants. There were no significant differences in hippocampi volume among children with and without PTSD. However, among adults in the control group, the left hippocampus was moderately larger. It appeared that adults with PTSD extending from childhood did not experience normal asymmetrical hippocampus development. It could also be that abnormal hippocampus development is a risk factor for PTSD, for trauma symptom severity was associated with a smaller than average sized hippocampus (Woon & Hedges, 2008). There is preliminary research that suggested neuroanatomy structure(s), such as hippocampal volume, can be a heritable feature (i.e., nature; Carballedo et al., 2012; Rao et al., 2010; Lupien et al., 2011).

It appeared that hippocampi were used in activities associated with learning: retrieval of information, pattern completion, and processing temporal information (see Kesner & Rolls, 2015). PTSD symptoms included displaying fear responses during situations unrelated to the initial abuse and having no memory of developing the conditioned response (see Besnard & Sahay, 2015; see LeDoux, 2014). A study with 265 young adults, 18 to 26 years old, compared adults exposed to childhood parental physical abuse, sexual abuse, witnessed parental IPV, and parental verbal abuse to adults without exposure to ACE. Adults exposed to those ACEs experienced reductions in the number and sequence of connections made by the right and left anterior insula and the right precuneus with other anatomical structures in the cortical network architecture. Intact connections enabled normal emotion and impulse regulation, attention, accurate

assessment of the intention of others, and self-awareness (Teicher et al., 2014). Neural circuit developmental modifications can result in specific behavioral correlates. Kirke-Smith, Henry, and Messer (2014) conducted a study with 40 youth, 11 to 18 years old, exposed to ACE by the age of nine were compared to 40 youth with no ACE exposure. Exposed youth were impaired (by 20% to 47%) on eight skills associated with executive functioning. This research in cognitive neuroscience supported the premise that exposure to ACE has resulted in a compromised emotional regulation system as an adult. These deficiencies were consistently reported by victims and their partners (men and women): an inability by the aggressors to regulate their emotions (Hettrich & O'Leary, 2007; Morrison, Burke et al., 2018; Morrison, Hawker et al., 2018; Pence & Paymar, 1993).

The Influence of Nature on IPV Use. Nature includes human biology, structure and function of the nervous system, and the structures' development and interaction within the brain. It appears that neuroscience research on IPV began with Rosenbaum and Hoge (1989) looking at the association between traumatic brain injury (TBI) and IPV use. Among 31 men recruited from the community who reported co-occurring poly-substance recovery and IPV use, 19 (61%) had a history of head injuries. Rosenbaum et al. (1994) reinforced the likelihood of TBI among men who used IPV by comparing men in an IPV offender program (n = 53), to men who were not in an IPV offender program and unhappy in their marriage (n = 32), and to men who were not in an IPV offender program and happy in their marriage (n = 45). The corresponding rates of TBI were 53%, 25% and 16%, respectively. A TBI increased the likelihood of IPV use compared with men who were unhappy (odds ratio of 5.82) as well as happy (odds ratio of 5.58) in their marriage. Of interest, 51% of men received their TBI before the age of 11 and 24% between the

ages of 11 and 15 (75% before the age of 16). The most common causes of TBI were: motor vehicle accidents (34%), falls (25%), sports-related injuries (17%), and fighting (13%). The most common areas damaged from TBI were in the pre-frontal cortex, an area identified as the primary location for executive functioning, and in the temporal lobe (Morse & Montgomery, 1992). Cohen, Rosenbaum, Kane, Warnken, and Benjamin (1999) reported a 46% TBI rate in men referred to treatment for IPV compared to 21% TBI rate in controls. Marsh & Martinovich (2006) reported that among 38 men from an IPV offender program, 22 (58%) had experienced a TBI event. In addition, those men scored worse than did men without a TBI in two of the three measures assessing executive functioning performance. Using neuropsychological assessments (performance tests) with men in IPV offender re-education programs with men in the community (martially dissatisfied and satisfied), reduced functioning levels were identified in men who endorsed IPV use, in multiple areas: cognitive flexibility, attention, focused attention/concentration, verbal ability, learning, information processing efficiency, working and executive control ability (tasks associated with the frontal lobe; Cohen et al., 1999; Cohen et al., 2003; Easton, Sacco, Neavins, Wupperman, & George, 2008; Schafer & Fals-Stewart 1997; Teichner et al., 2001). It should be noted that not all of the male IPV offenders were cognitively impaired (Cohen et al., 1999; Teichner et al., 2001), and a TBI was not a sole risk factor for IPV use, rather a contributory factor (Cohen et al., 1999)

Neurochemical alterations "reflect an alteration of neuronal function that can be simplistically thought of as promoting rapid responding to external stimuli" (Pinto et al., 2010, p. 393). In 1992, Lindman, von der Pahlen, Öst, and Eriksson, appeared to have

initiated the research exploring potential neurochemical influences in men adjudicated for IPV. These researchers tested testosterone, glucose, and cortisol levels of 16 intoxicated men within an hour of their arrest for IPV, and two control samples, non-violent pub patrons n = 19 and randomly selected non-offending men at a mall n = 19. The IPV offender's testosterone levels were significantly lower and cortisol levels higher than both control groups when they were sober. Two other studies identified a correlation between testosterone and IPV use: Booth and Dabbs (1993) in an ex-military sample (half had served in the Vietnam War) and Soler, Vinayak, and Quadagno (2000), in a community sample. When viewing IPV with the lens that men are always aggressors and women victims, it makes sense to suspect testosterone levels play a key role. However, literature reviews (including meta-analyses) have identified a weak connection between testosterone and aggression (Book, Starzyk, & Quinsey, 2001; Duke, Balzer, & Steinbeck, 2014; Wong, & Gravel, 2018). One study looking at serotonin was identified. It reported that IPV offenders had decreased serotonin levels when they were compared to controls (Rosenbaum, Abend, Gearan, & Fletcher, 1997).

Bitler, Linnoila, and George (1994) explored four case studies and identified physiological changes prior to initiating IPV, such as rapid breathing, sweating, shaking, feeling out of control, and feeling agitated. The similarities between these symptoms and those associated with a panic disorder were noted. George et al. (2000) extended the exploration of these symptoms further, with men and women recruited from the community. They injected all participants, those who reported IPV use (included acts of severe aggression, for example choking), those with alcohol abuse and no IPV use, and controls (neither IPV use nor substance abuse), with sodium lactate known to induce

panic attacks. All participants showed signs associated with anxiety, such as a significant increase in heart rate, systolic blood pressure, and plasma concentrations of norepinephrine. However, the IPV group showed significantly greater fear, rage, panic reactions, increased changes in behavioral responses (speech, breathing, facial grimacing, and motor activity of the hands/arms and legs), and a higher score on the cognitive subscale (feelings of unreality, fright, and loss of control) but no difference from the other groups in physical symptoms (e.g., heart racing, sweating, 14 items).

Umhau et al., (2002) appeared to be the first researchers to suggest that individuals who engage in IPV use may be experiencing a fear response (fight-flight-freeze). However, this did not mean that these men were *afraid* of their partner. For while experiencing IPV, men have reported that they were not afraid of their partner's aggressive acts (Jacobson et al., 1994). Rather, it was another indication that IPV use can be associated with emotional dysregulation. This is aligned with Holtzworth-Munroe and Stuart's (1994) appraisal that there are male IPV offenders who are not anti-social, rather when conflict arose with their partner, they had difficulty resolving those conflicts, difficulty communicating effectively, presumed hostile intent behind their partner's negative behaviors, and possessed other social skill defects.

Cognitive neuroscience research has compared IPV offenders to other populations. A thinner cortex in multiple areas in the brain related to emotion was identified in male IPV offenders compared to other criminals (Verdejo-Román, Bueso-Izquierdo, Daugherty, Pérez-García, & Hidalgo-Ruzzante, 2019). Male IPV offenders with co-occurring high alcohol misuse who did not complete the re-education program were less accurate in decoding emotional facial signals and presented more errors and

perseverative errors then did IPV offender program completers (Romero-Martínez, Lila, Gracia, & Moya-Albiol, 2019). When compared to controls, IPV offenders had increased activity in the limbic system when responding to verbal aggression (Lee, Chan, & Raine, 2008). Alcohol dependent male IPV offenders were compared to healthy controls and non-violent alcohol dependent men. The IPV offenders had reduced volume in the right amygdala (Zhang et al., 2013). Teichner et al. (2001) reported the presence of cognitive deficits in 48% of male IPV offenders, compared to 4% among men with no history of IPV. IPV offenders had significantly higher neural hyper-responsiveness in multiple areas of the brain (hippocampus, fusiform gyrus, posterior cingulate gyrus, thalamus, occipital cortex, precuneus bilaterally) to their partners' mildly threatening stimuli (Lee et al., 2009).

Frontal lobe deficits were documented among male IPV offenders who engaged in a high number of behaviors associated with IPV, for example, threats, physical aggression acts, and how many times a partner sought out medical treatment (Corvo, Halpern, & Ferraro, 2006). The bypassing and/or deficits in the frontal lobe suggested that emotional down-regulation techniques (e.g., self-soothing) were not readily accessible (see Porges, 2007). IPV offenders allocated more cognitive resources to aggressive words compared to men with no IPV history (Chan, Raine, & Lee, 2010), more activity in the limbic region (which included the amygdalae and hippocampi), and less frontal lobe activation to aggressive words (Lee et al., 2008). IPV offenders experienced activation in different structures within the brain than did general criminal offenders when shown photographic images of IPV use (Bueso-Izquierdo et al., 2016). Given the high level of witnessed parental IPV and parental physical abuse among IPV

offenders, it might be that when physical contact during an argument is experienced, a reaction to auto-biographic events were triggered resulting in bidirectional IPV. This could explain the finding that when one partner engaged in IPV it increased the risk of bidirectional IPV (O'Leary, Tintle, & Bromet, 2014: Stith, Smith et al., 2004) among couples reporting situational couple aggression. The importance of structural changes in the brain was explained by Lee et al. (2008):

> The suppression of negative emotion is achieved via an inhibitory connection between the frontal and limbic regions. Therefore, any functional or structural abnormalities in one or more of these regions or their interconnections would be expected to increase the propensity for impulsive aggression due to the unsuccessful suppression of negative emotion. (p. 655)

Theoretical Framework Summary. While power and control IPV theory has been the basis for the work of shelter-advocates, there is a plethora of research that supported the identification of two groups of women who experienced IPV in their relationship(s). One group of IPV victims had partners who consistently used emotionally abusive, i.e., coercive control strategies, known as power and control IPV. In power and control IPV, it appears that family-of-origin violence's association with IPV is explained by intergenerational transmission theory. Whereas the other group of IPV victims had partners who did not meet that criteria; this type of IPV was designated as situational couple IPV (Johnson, 1995; Tolman, 1999). Situational couple IPV is likely more nuanced. Perhaps a more accurate description would be dysregulated IPV. For, IPV research has reported results consistent with developmental systems theory. This explained why some individuals exposed to family-of-origin violence engaged in IPV use

during their lifetime and while others did not. Neuroscience research suggested that individuals who experienced ACE were likely to display maladaptive behaviors as adults that reflected emotional dysregulation, which included a temporary loss in access to their executive functioning skills (Kirke-Smith et al., 2014). This is consistent with the reports by couples that their arguments had escalated to include physical IPV, and among women who reported they were as likely as their partner to initiate physical IPV (Cascardi & Vivian, 1995). Power and control IPV theory posits that men who use physical abuse tend to use it in all of their long-term relationships, whether while dating or in a marriage-like relationship. However, research with community populations did not find trend of use present: IPV use often deceased (Caetano, Field, Ramisetty-Mikler, & McGrath, 2005; Capaldi et al., 2012; Catalano, 2007; Cho & Wilke, 2005; Kim, Laurent, Capaldi, & Feingold, 2008). The decrease in IPV use over time might be attributed to the allostatic model, which explained how the risk factors, organized by the general aggression theory, resulted in IPV use for individuals who did not also engage in multiple emotional coercive control tactics. For example, insufficient self-control and mistrust/abuse mediated the relationship between ACE and IPV use (Hassija, Robinson, Silva, & Lewin, 2018), and when a high level of ACE co-occurred with high level of past 12 month stress the risk of IPV use increased (Roberts et al., 2011). It is possible that as some individual's aged, their ability to decrease impulsive behaviors improved.

Impaired Parenting

While ACE's for family-of-origin violence and sexual assault continue to remain prevalent in IPV studies, interest in other forms of ACE beyond those identified by power and control IPV theory is emerging. Godbout et al. (2019) identified 66 studies conducted

from 2005 to 2015. The number of studies that included ACE variables: 44 studies with parental physical abuse, 35 studies with witnessed parental IPV, 25 studies with sexual assault, 11 studies with emotional abuse, and 11 studies with neglect. While neglect had the smallest association with IPV use in this meta-analysis, there was no significant difference between the forms of ACE. Corvo (2006) identified that the number of times a respondent lived away from home ($r = 0.32$) and serious paternal illness ($r = 0.28$) were associated with IPV use. Parental loss prior to the age of 18 was associated with higher rates of relationship dissolutions by men and women (Høeg et al., 2018). Exploring the influence of other aspects of impaired parenting such as mental health or the parent-child relationship is a relatively new area of research for IPV. Robert's et al. (2011) reported men's risk for IPV use was associated with multiple parental issues: mental health, alcohol use, drug use, and divorced parents before the age of 12. In a longitudinal study (birth to age 23). Linder and Collins (2005) reported that the Pearson correlation between IPV use with parent–child negative interactions and parent–child boundary violations (both at 0.28).

Individual Adversities

There is limited research exploring the possibility that experiencing adversity outside of one's home during childhood was associated with IPV use. Corvo (2006) identified one individual adversity associated with IPV use: number of times respondent was hospitalized ($r = 0.28$). IPV use was associated with concentrated neighborhood disadvantage (Wright & Benson, 2011). Race was used as a covariate in IPV research (Singh, Tolman, Walton, Chermack, & Cunningham 2014; Widom, Czaja, & Dutton, 2014). The premis that perceived discrimination is an ACE supported by research studies.

A meta-analysis that included studies on adolescence youth (mean ages 10 to 20 years old) identified an association between perceived discrimination with externalizing behaviors (r = 0.24), depression (r = 0.26), substance use (r = 0.13, included cigarettes) and internalizing symptoms (r = 0.26; Benner et al., 2018). Priest et al.'s (2013) systematic review of publications, with youth ages 12 to 19, noted a consistent association between perceived discrimination with behavioral problems and poor mental health.

Polyvictimization

Polyvictimization theory posits that a higher level of experienced forms of ACE (e.g., emotional neglect, physical neglect, parental physical abuse) a participant positively endorsed, the strong the association with a problem behavior or symptom. This theory was introduced by Finkelor, Ormrod, and Turner (2007) who reported that when looking at past-12 month ACE exposure "the inclusion of poly-victimization in the analyses either eliminated or greatly reduced the predictive power of individual types of victimization" (p. 16) supporting the premise that the "relationships between individual victimization types and traumatic symptoms may be misrepresented when a child's broader victimization profile is not taken into account" (p. 9). Lamers-Winkelman, Willemen, and Visser (2012) reported that witnessed parental IPV was an indicator for experiencing polyvictimization. Children who reported witnessed parental IPV experienced and average of five different forms of ACE and 20% experienced seven or more forms of ACE. The forms of ACE included: parents living apart (93%), physical and/or emotional neglect (54%), emotional abuse (40%), and sexual abuse (10%).

Exploring a participant's exposure to multiple categories of ACE by adults supported the importance of polyvictimization. Turner, Finkelhor, and Ormrod (2010) reported that youth had very different past-12-month prevalence rates of ACE when comparing polyvictims (top 10% of number of ACE incidents experienced) to non-polyvictims: witnessed parental IPV (86% vs. 20%), maltreatment (79% vs. 18%), sexual victimization (55% vs. 8%), and parental physical abuse (51% vs. 6%). When a participant endorsed more than one chronic victimization (repeated abuse in one ACE) category, creating a polyvictimization category resulted in a higher association with trauma symptoms than was accounted for by simply summing the scores of the endorsed categories. An HMO provider reported an ACE exposure and IPV response relationship, from no ACE exposure to: one ACE category, the odds were 1.9 times greater; exposure to two ACE categories, the odds were 3.3 times greater; and with three ACE categories, the odds were 3.8 times greater (Whitfield, Anda, Dube, & Felitti, 2003). Extending the research on polyvictimization, Dierkhising, Ford, Branson, Grasso, and Lee (2019) studied adolescents' history of maltreatment. The increased number of developmental periods during which a youth experienced polyvictimization was associated with increased PTSD (externalizing and internalizing problems) symptoms. They reported a noticeable variation in developmental timing for polyvictimization with various types of symptoms.

Significance of Present Study

It is now possible to distinguish between power and control IPV and situational couple IPV using an assessment (Tolman, 1999). The second type of IPV, situational couple IPV, appeared to account for research identifying risk factors associated IPV other than family-of-origin violence. It is common for children exposed to witnessed parental

IPV to be polyvictims (Lamers-Winkelman et al., 2012). As noted by Wolfe and McGee (1994), so ‘‘it may be misleading to study the impact of any particular form of maltreatment without controlling for or measuring the full range of maltreatment experiences’’ (p. 179). In addition, an emphasis on family-of-origin violence and the limited scope of items beyond this category of ACE by most studies (Godbout et al., 2019) has made it difficult to differentiate between the unique and shared consequences of each type of ACE. Kinard (1994) asked: ‘‘When multiple forms of maltreatment occur, whether or not they occur concomitantly, how can the investigator determine whether observed outcomes are the result of the most recent form of maltreatment or the cumulative effects of all types?’’ (p. 647).

It is uncommon for a study on IPV to include more than a few ACE items. Occasional studies that explored the association between polyvictimization with IPV use included as many as 22 ACE items (Miller et al., 2011; Roberts et al., 2011). The developing research in the area polyvicitimzation suggested that looking at multiple categories of ACE can influence results, supporting this dissertation's study design to expand the scope of ACE beyond family-of-origin violence. This study began with 134 items and the data cleaning process pared that down to 15 items within three categories: family-of-origin violence, impaired parenting, and individual adversities. While the prevalence rates of IPV experienced by women is reported using lifetime statistics, only eleven studies were identified that looked at men's risk factors for lifetime IPV use. Eight studies included parental physical abuse, however none separate parental physical abuse by sex (mother, father) and they included few additional ACE items (Abrahams, Jawkes, Laubscher, & Hoffman, 2006; Cascio et al., 2017; Cho, 2012; Clarke, Stein, Sobota,

Marisi, & Hanna 1999; Kalmuss, 1984; McMahon et al., 2015; Roberts et al., 2011: White & Widom, 2003; Whitfield et al., 2003). Three studies looked at areas other than ACE (O'Leary et al., 2014; Williams & Frieze, 2005; Yau, Staton, Davidson, 2013). The present study has the potential to add to the knowledge on the types of ACE's associated men's lifetime use of IPV.

Conclusion of Literature Review

If IPV is not always a function of men's malformed attitudes toward women, then why is there a consistent association between IPV and ACEs from family-of-origin violence? The emergence of clinical neuroscience research during in the past 20 years creates a strong argument for the interaction of nature and nurture and suggests that exposure to ACE resulted in emotional dysregulation behaviors for some individuals that extended into adulthood. The human body is designed to self-modify based on the individualized environmental inputs to increase that human's likelihood of survival, particularly during his or her early sensitive or critical periods of development (see Teicher & Khan, 2019). This would explain the limited effectiveness experienced today by the plethora of IPV offender re-education programs grounded in power and control IPV theory, which emphasizes addressing men's patriarchal attitudes.

The *developmental systems theory* leverages the advancements in neuroimaging technology to provide evidence of how ACE can influence structure, function, and connectivity in the brain and the ramifications of these changes (see Hensch & Bilimoria, 2012; see Teicher & Khan, 2019; see Teicher et al., 2016). In effect, it reframes the nature versus nurture conversation back to how nature and nurture interact to influence behaviors. The *allostatic load model* was used to explore how an organism manages

stressors in the current environment (Wilkinson & Goodyer, 2011). To address the convergence of research findings in the field of cognitive neuroscience and social sciences, the allostatic load model has been a helpful heuristic to frame the discussion on how ACE can result in the biological reactivity of the limbic system for some IPV users creating a higher than average baseline for disruptive emotion(s) than are typically present when comparing those men's response to his peers' responses and behaviors. The *general aggression theory* provided a framework to demonstrate how IPV risk factors can be categorized, which has relevance for couples experiencing situational couple IPV. These theories provided a framework that can be used to expand current IPV offender program curriculum beyond re-education by providing information on the link between the brain-emotion-behaviors and strategies to mitigate the maladaptive protective behaviors in order to stop the use of IPV. This material has the potential to provide a framework consistent with what IPV offenders and victims have historically reported as associated with men's IPV use: an inability to manage their anger (Pence & Paymar, 1993; Walker, 1984, 2009).

Research Questions

The null hypothesis in the present study is identified in research question 1, which is consistent with power and control IPV theory's premise that only family-of-origin violence is associated with men's IPV. Alternative hypotheses are represented by research question 2 and research question 3, which explore whether there are additional forms of ACE associated with men's IPV use.

Research Question 1. To what extent is male participants' exposure to *family-of-origin violence* associated with the likelihood of self-reported lifetime IPV use?

Hypothesis 1. Male participants' exposure to *family-of-origin violence* during childhood is associated with a greater likelihood of self-reported lifetime IPV use.

Hypothesis 2. The *family-of-origin violence* model will have a significant contribution to explained variance in self-reported lifetime IPV use.

Research Question 2. To what extent is male participants' exposure to *impaired parenting* associated with their likelihood of self-reported lifetime IPV use when controlling for *family-of-origin violence*?

Hypothesis 1. Male participants' exposure to *impaired parenting* during childhood is associated with a greater likelihood of self-reported lifetime IPV use.

Hypothesis 2. The *impaired parenting* model will have a significant contribution to explained variance in self-reported lifetime IPV use.

Hypothesis 3. Male participants' exposure to *impaired parenting* during childhood is associated with a greater likelihood of self-reported lifetime IPV use when controlling for the *family-of-origin violence* block.

Hypothesis 4. The impaired parenting model will have a significant contribution to explained variance in self-reported lifetime IPV use when controlling for the *family-of-origin violence* model.

Research Question 3: To what extent is male participants' exposure to *individual adversities* associated with their likelihood of self-reported lifetime IPV use when controlling for family-of-origin violence and impaired parenting?

Hypothesis 1. Male participants' exposure to *individual adversities* during childhood is associated with a greater likelihood of self-reported lifetime IPV use.

Hypothesis 2. The *individual adversities* model will have a significant contribution to explained variance in self-reported lifetime IPV use.

Hypothesis 3. Male participants' exposure to *individual adversities* during childhood is associated with a greater likelihood of self-reported lifetime IPV use when controlling for the *family-of-origin violence* and *impaired parenting* blocks.

Hypothesis 4. The *individual adversities* model will have a significant contribution to explained variance in self-reported lifetime IPV use when controlling for the *family-of-origin violence* and *impaired parenting* model.

CHAPTER III: METHODOLOGY

Research Design

The present study is a secondary data analysis using the National Comorbidity Survey-Replicated (NCS-R: Alegria, Jackson, Kessler, & Takeuchi, 2016). The NCS-R was included in a suite of three epidemiological cross-sectional surveys referred to collectively as Collaborative Psychiatric Epidemiology Surveys (CPES), conducted by the Institute for Social Research at the University of Michigan. A primary feature of the NCS-R was the design replication of an earlier CPES study: The National Comorbidity Survey (NCS) conducted during 1990-1992 (Kessler & Merikangas, 2004; Kessler, Berglund et al., 2004). In past studies, the NCS-R and the NCS datasets had provided items to develop a variable for physical IPV as well as a plethora of items to construct ACE predictors. Physical IPV in the NCS-R was used in multiple studies as both a predictor variable (Afifi, Brownridge, MacMillan, & Sareen, 2010; Finkel et al., 2012; Kessler, Molnar, Feurer, & Appelbaum, 2001; McCauley, Breslau, Saito, & Miller, 2015; Whiting, Simmons, Havens, Smith, & Oka, 2009;) and as an outcome variable (McMahon et al., 2015; Williams & Frieze, 2005). ACE variables have been used as a predictor variable with various outcome variables in studies using the NCS and a CPES dataset (Afifi, Boman, Fleisher, & Sareen 2009; Cho, 2012; Del Gaizo, Elhai, & Weaver, 2011; Goodwin & Styron, 2012; Oosterhoff, Kaplow, Wray-Lake, & Gallagher, 2017; Van Meter, Paksarian, & Merikangas, 2019). Looking at ACE as a predictor for IPV was also studied (O'Leary et al., 2014). While the NCS-R study was conducted between February 2001 to April 2003, over 800 articles have been published using this dataset as

of December 5, 2020 (ICPSR, 2015) and studies continue to publish using it, due to its unique structure and the variety of items it included.

The CPES was funded by the National Institute of Mental Health. Each study in the suite had unique features and special questionnaire modules. Face-to-face interviews were conducted with participants by professional interviewers. Recruitment and consent strategies were approved by the Human Subjects Committees of Harvard Medical School, Boston, Mass, and the University of Michigan. For more information see Kessler and Merikangas (2004) and Kessler, Berglund et al. (2004). Both of these surveys were developed to support research exploring precursors to and the effects of mental health, for example: the prevalence and correlates of disorders and symptoms, impairments associated with disorders, and treatment patterns. The primary mental health assessment tool used was the Composite International Diagnostic Interview (CIDI). Its results were transposed to a mental health diagnosis based on DSM-IV criteria (see Kessler & Üstün, 2004). While these diagnoses were not utilized in the regression analyses in the present study, items were included in the NCS-R to explore lifetime mental health precursors, for example, the IPV items and ACE items.

NSC-R Design

The participant interview consistent of two parts conducted with the aid of a computerized program and administered during a single session. The interview included fully structured diagnostic assessments for multiple mental health disorders. assessed for 16 DSM disorders of interest. Another 11 mental health disorders were assessed in Part II, including four that required extensive introductory questions that enabled the quick skip-out of non-cases (posttraumatic stress disorder, obsessive-compulsive disorder, drug

abuse, and drug dependence) and four disorders with symptom onset during childhood (separation anxiety disorder, oppositional-defiant disorder, conduct disorder, and attention-deficit/hyperactivity disorder; Alegria et al., 2016). Part II was administered to Part I respondents who: (1) met the lifetime criteria for at least one of the mental disorders assessed in Part I or (2) met sub-threshold lifetime criteria and sought treatment for at least one of the diagnoses of interest at some time during their life or (3) during his or her life, the participant had either made a plan to commit suicide or attempted suicide or (4) were included in the probability subsample of other respondents (for details refer to Kessler & Merikangas, 2004; Kessler, Berglund et al., 2004). Part II of the assessment explored ACE risk factors such as parental behaviors and parental mental health, other correlates, and specific mental health disorder(s) indicated in but not assessed for in Part I. The interview time was generally 90 minutes with no mental health diagnosis, 2 hours and 30 minutes when participants had a diagnosis, and up to 5 or 6 hours with a complex mental health history. While some participants answered all of the questions in some sections, they were skipped out of other sections. The NCS-R had a 71% participation response rate. Refer to Kessler and Merikangas (2004) and Kessler, Berglund et al. (2004) for a complete description of the design and collection methods.

Sampling Strategy. The NCS-R is a nationally representative study with native English-speaking household residents, predominately non-Hispanic, the average age was from 18 years old up to 98 years old, recruited from 48 states in the United States, excluding Hawaii and Alaska, in 252 geographic areas. Participants were selected from a four-stage probability sample using census data. Refer to Kessler, Berglund et al. (2004) for more details.

Sampling Distribution. In the NCS-R, Part I participant selection process over-represented racial minorities, residents of the Midwest, residents from metropolitan areas, individuals with 13+ years of education, and women. The Part II participant selection process over-represented the same characteristics but more extreme over-representation was identified for young adults (ages 18-32), women, and residents of metropolitan areas. Refer to Kessler, Berglund et al. (2004) for more details.

Sample Weight. When a study's design samples households with differing characteristics, a 'weight' is used to translate each participant's endorsed response to identify study results that are nationally representative. A weight was developed for each participant who completed only the Part I interview and for each participant who completed both Part I and Part II. It was possible to identify whether a participant completed the Part II or not. To provide the proper weight for each participant, a variable was created based on that information. Unless identified otherwise, the analyses utilized weighted data. Refer to Kessler, Berglund et al. (2004) for more details on the development of a weight for each participant.

Missing Data. The NCS-R included complex step-sequences. To mitigate the likelihood of missing data, interviewers used a computerized package on a laptop that both controlled the skip logic and prompted the interviewer for missing or inconsistent responses. Nightly, interviewers submitted their assessments electronically. Supervisors reviewed those interviews for completeness. Interviewers then re-contacted the participant to collect missing responses. The resulting missing data were quite small in each participant's interview sequence. Even so, there were questions that some respondents refused to answer or stated that they didn't know. A regression-based

multiple imputation approach was used for a few key variables to address missing responses for specific datum: age, sex, education, employment status, and occupation of household residents. For more details refer to Kessler, Berglund et al. (2004).

Data Management

The Inter-university Consortium for Political and Social Research (ICPSR) manages researchers' access to the NCS-R dataset. The data was separated into publicly available and restricted data. ACE items in the restricted data were considered for inclusion in the present study. All of the final items used by the regression analyses were in the unrestricted, publicly available data. One item from the restricted data was used in the participant demographics, participant's income. The data were downloadable from the website in SPSS format. Codebooks, questionnaires and other related literature were also available there.

Access to restricted data (e.g., ACE for PTSD) was provided by accepting the online terms and conditions on ICPSR's website. Acquiring access required providing ICPSR with multiple items: Florida International University's (FIU) institutional research board's approval, a data security plan, a brief description of the proposed research, contact information for the researchers who will have access to the data, and a signed confidentiality agreement between FIU and ICPSR. FIU's IT security department approved the data security plan prior to its submission to ICPSR and verified that the researcher had implemented the protocols. ICPSR's confidentiality agreement was signed by FIU's legal department. The legal department required an additional agreement internal to FIU: The Division of Research Agreement signed by the College's Dean, which provided an overview of the restricted data made available. The timeline from

submission of the dissertation proposal to FIU's IRB to receipt of the restricted data from ICPSR was 117 days.

Sample

The 'Couple Study' refered to the identification of a second random respondent who was in a marriage-like relationship (living together or married) in some of the households of a study participant. The Couple Study was a subset of the NCS-R. There were 2,520 participants, each was assigned a unique ID number for confidentiality. For more details refer to National Comorbidity Survey-Revised (n.d.). Participants were asked to identify their sex as part of the survey; they were provided the options of identifying as either 'male' or 'female.' Only men were included in the present study. There were 1208 were men in the Couple Study. After applying the sample weights, the study results represented 1,300 men.

Outcome Variable: Lifetime IPV Use

The NCS-R used questions aligned with the Conflict Tactics Scale (CTS) to assess for physical IPV use. The most prevalent research instrument used to assess for IPV is the CTS (Capaldi et al., 2012; Cummings, Gonzalez-Guarda, & Sandoval, 2013; Straus 2017) or its revised version (CTS2; Straus, Hamby, Boney-McCoy, & Sugarman, 1996). The validity and reliability of the CTS was well established by previous studies (see Straus, 1990), and it was the most common instrument used to assess for both components of IPV: physical aggression and emotional aggression (Schwartz, 2000). In the present study, participants were provided the two lists on a handout to refer to when asked the questions on IPV use (see Appendix A). List A (pushed, grabbed, shoved, threw something, slapped, hit) and List B (kicked, bit, hit with a fist, beat up, choked,

burned, scald, threatened with knife or gun). In the NCS-R, these items were measured on an ordinal scale (often, sometimes, rarely, never) to assess the participant's sense of the frequency of these items when he positively endorsed it as present in his current relationship.

Variable Construction. The NCS-R did not explicitly ask about lifetime IPV use. Rather, participants were asked about IPV use in dating relationships and then asked about IPV use in their current relationship. When the participant endorsed IPV use there was a followed-up question on the type of IPV, mild-moderate (List A) and severe (List B; see Appendix A for details). Multiple items were cobbled together to identify lifetime IPV use, which was developed as a binary variable: 0 = never, 1 = yes, one or more times, during any relationship (past/dating or current). Refer to Appendix B, Variable Codebook, for details.

Missing Data. Seven participants refused to answer (-9) one or more of the four questions on IPV use. They were removed from the study. This resulted in 1201 men in the study. There were 116 participants with system missing data from the IPV use dating questions. These participants were included in the study because they did not decline to answer. They did respond to the two questions on current relationship IPV use. Seventeen of these men endorsed IPV use in their current relationship. There was a possibility that some of the remaining 99 participants might have endorsed lifetime IPV use while dating but not in their current relationship, had they been asked about dating IPV use.

Outlier Test. Table 1 shows the total sample. The weighted sample was used in the regression analyses. Logistic regression analysis is sensitive to outliers, which can negatively impact a model's goodness of fit and incorrectly classify cases (Pallant, 2007).

This issue was explored for participants reporting IPV use. The outcome variable, lifetime IPV use, was dichotomous. The frequency of IPV use during the past 12-months of their current relationship was utilized to identify outliers. So, the 12% of participants who reported that their IPV use while dating did not continue into their current relationship were not outliers. The same assumption was used with participants who reported IPV use in their current relationship but not within the past 12 months. Participants who reported past-12-month IPV use were then asked to provide the number of days for List A (mild-moderate) and for List B (severe). It was not possible to distinguish whether List A and List B events happened on the same day or different days, so they treated as if they happened in different days. The number of days from List A and List B were combined to create a total that accounted for the number of days for either type of IPV. Women who utilize shelter services are thought to experiencing ongoing, frequent, physical IPV (Okun, 1986; Pence & Paymar, 1993). Twenty or more days of IPV use had been used as the highest level of incidents in prior studies (Gilbar et al., 2019; Powers, Cochran, Maskaly, & Sellers, 2020), so it was used as the cumulative maximum number in an attempt to identify victims of power and control IPV in the present study, which would be treated as outliers. Sixteen days was the highest total number of days during the past-12 months when a participant engaged in physical IPV, and that participant only endorsed days only from List A, mild-moderate IPV. No outliers were identified.

Table 1
Self-reported Male Participants' Lifetime IPV Use

	Couple	Removed*	Study	No IPV		IPV Use	
Unweighted	1,208	-7	1,201	986	82%	215	18%
Weighted	1,300	-5	1,295	1,098	85%	198	15%

* Removed because declined to answer question(s) on their IPV use.

ACE Predictor Variable Inclusion Analysis

One of the primary challenges in a secondary data analysis can be identifying the variables to include from the parent study. The NCS-R Couple Study has 3,718 items. The NCS-R used a modified version of the Family History Research Diagnostic Criteria Interview (Andreasen, Endicott, Spitzer and Winokur, 1977) to assess for parental psychopathology. A modified version of the Conflict Tactics Scale (Straus et al., 1998) was used to assess for the frequency and intensity of parental physical abuse. The researchers also included additional questions to explore additional ACEs such as emotional neglect, physical neglect, and financial stability (for details refer to Kessler & Üstün, 2004). While age 18 is commonly identified as legally an adult, there were individuals 19 years old who were still enrolled in high school (Haveman, Wolfe, & Spaulding, 1991) and approximately 90% of individuals 18-19 years old were identified as dependent household members (see Kane 1994). So, the present study used through age 18 as the cut-off to designate childhood.

Developing variables for this study utilized a complex multi-step process. There were items used with no modifications, and some items needed to be reverse scored so that the lowest impact was scored as zero, for example, none or over the age of 18. Typically, a variable was developed using a composite construction strategy where two

or more items were consolidated to create a single variable. The multistep process for developing variables went as follows. First, the NCS-R codebook was reviewed to identify ACE items. The majority of the constructed variables were from items in the Childhood section. Other sections were also inspected. Any item that asked the participant's age when he first experienced an event during his lifetime was considered for inclusion. From this review of the NCS-R dataset, there were 134 ACE items of interest identified for further review.

These 134 items were then subjected to a second-round data inclusion/exclusion review using a set criterion.

1. Items were reviewed for availability: some items were not located in the Couple Study. The NCS-R was one of three studies that were modules of the Collaborative Psychiatric Epidemiology Surveys (CPES). The codebook was designed to support all three CPES studies. Each study in the suite had unique features and special questionnaire modules. The codebook did not specify whether questions were excluded in the NCS-R. For example, in the section Discrimination, there were four items associated with the participants' experience with discrimination identified to include in the present study: frequency threatened/harassed, frequency called names/insulted, disliked due to race, and treated unfairly due to race. However, these items were not included in the NCS-R study.
2. Items had to have no more than 20% missing. The NCS-R had two different interview tracks. All participants answered the Part I interview. There were 724 participants who completed Part II (long form interview). Participants who had not endorsed the screening questions that assessed for 11 additional mental health disorders, such posttraumatic stress disorder (PTSD) and oppositional conduct disorder were not asked to participate in the Part II interview. The questions on IPV use and some childhood experiences were in the Part II interview. To address this, a sequence of questions (intermediate interview) was added specifically for the Couple Study participants who did not complete the Part II interview. However, this sequence did not include all of the questions in Part II, it emphasized questions identified as of interest for relationship functioning.

There were ACE categories of interest that were not included in the present study due to missingness. The diagnostic questions for PTSD were in the Part II and part of the restricted access data. This included two questions associated with family-

of-origin violence (e.g., how old first time witness physical fights at home), three questions associated with sexual abuse and assault (e.g., how old first time raped), four questions associated with community violence (e.g., how old first time mugged) and seven associated with individual adversities (e.g., how old first time kidnapped). All of these items had 40% missing. Unfortunately, this section was the only source for items on sexual abuse and community violence. So, these categories were unavailable to use in the present study. In addition, there were items of interest in oppositional conduct disorder. For example, age of first police trouble for aggressive behavior. However, this sequence had an even higher level of missing at 90% due to the limited number of participants who positively endorsed the associated disorder screening questions.

3. When a specific focus was identified, such as the parent figure's mental health, any supporting questions deemed unnecessary were removed. For example, 'during worst depression, woman-parental figure had other symptoms.'
4. Similar items were reviewed for consolidation to develop a single variable. For example, the items 'did woman-parental figure experience anxiety' and 'did woman-parental figure experience depression' were asking about the participant's mother's mental health. These two questions were combined and averaged. In the individual adversities block, the variable 'number of different types of professionals seen for MH and 1st hospitalization' required 10 binary items to create it. First an item was created to identify if the participant had a specific treatment experience (e.g., saw a social worker, hospitalized for mental health) through age 18, then these created items were summed to create a single variable.
5. Items with skip sequences. Ordinal items that were not preceded by a skip question had four levels (e.g., never, rarely, sometimes, often). Whereas items that utilized two questions were consolidated. The first question was a binary skip item, for example, did woman-parental figure experience depression (yes/no). Those who positively endorsed that item were then asked to identify the frequency of that event. A five-level ordinal item was created by combining the skip response, never, with the frequency level question response (i.e., rarely, sometimes, most, all). The variable was then recoded; the frequency level 'all' of the time was combined with 'most' of the time to develop a four-level ordinal variable. This supported consistency with the other ordinal variables with four frequency levels, with highest level identified as either 'a lot' or 'often.'

The second-round data inclusion/exclusion review pared down 134 items to 35 potential variables. Two strategies were used to support the third-round data review:

1. Table 2 shows the ACE items that were removed from the regression analysis because too few participants positively endorsed them. The criteria utilized by Felitti et al. (1998) when developing the ACE study was employed: These researchers screened out potential variables by requiring that a minimum 3% of participants had to positively endorse an ACE variable, using unweighted data. The present study's dataset included 1201 men, and a three percent threshold would require at least 36 participants to have positively endorsed the ACE item. This required summing the positive endorsement levels for the following items: ≥ 1 for ordinal items, age of first experience was prior to the age of 19, and the number of times experience the event (> 0). Three items in individual adversities were not developed into variables because they did not meet the 3% threshold.

Table 2
Excluded Items: Did Not Meet Minimum Positive Endorsement

Variable	Description	Positive*
qSUICIDE	Your age the 1st time if you ever attempted suicide	2.6%
qMMH	Your age when you first received medication for mental health	1.4%
qCH28A3	A non-family member did thing on List A to you	1.2%

* Unweighted.

2. Table 3 shows the ACE items that were removed from the regression analysis because their bivariate correlation with IPV was too low. Bivariate correlations were conducted between all items and the outcome variable using a non-parametric Spearman's rho correlation. In datasets with large sample sizes, most effects have a tendency to be significant due to increased power enabling the ability to detect

smaller effect sizes. To support identifying *meaningfully* significant items, any bivariate correlation with the outcome variable $\rho \leq 0.08$ (very weak effect) was removed (Cohen 1992). Sixteen items were removed from the present study: one from family-of-origin violence, eight from impaired parenting, and eight from individual adversities.

Table 3

Excluded Items: Did Not Meet Minimum Bivariate Correlation (≤ 0.08)

CORR	Pos*	Variable	Description
Block 1: Family-of-origin Violence			
0.073	13%	qCH28A4	How frequently did a sibling(s) do thing(s) on List A to you
Block 2: Impaired Parenting			
0.024	7%	qCH2	Your age if a parent(s) died
0.008	6%	qCH6	Did you live away from home for 6+ months before the age of 16
0.061*	4%	qCH56	How frequently did woman-parental figure experience alcohol and/or drug use problems
0.055*	3%	qCH62	At least one growing-up parent lied a lot
0.075**	6%	qCH38	Was your bio-mother the woman who spent the most time raising you
-0.043	33%	qCH40	How frequently did you experience emotional neglect by the woman-parental figure
0.062*	17%	qCH68	Was your bio-father the man who spent the most time raising you
0.030	62%	qCH69	How frequently did you experience emotional neglect by the man-parental figure
Block 3: Individual Adversities			
0.009	5%	qMHTMT	Number of different types of professionals you saw for MH and 1st hospitalization
0.063*	3%	qSD2	Age that you first thought seriously about committing suicide
0.017	5%	qCN3	Age of your 1st sexual intercourse IF before age of 13
0.038	3%	qSC10_4D	You have a learning disorder(s)
-0.016	61%	DE20_12	Number of times you times moved to new neighborhood/town when growing up
0.002	18%	qDE5_1	Number of your parents born outside of the US
0.000	16%	qDE7	A language other than English was spoken at home
-0.054*	16%	qDE20	Year that you left school prior to 12th grade

* $p < .05$, ** $p < .01$, *** $p < .001$.

* Pos = percentage of the study participants who responded and positively endorsed the variable
Bivariate correlation used Spearman rho, two-tailed bivariate correlation with Lifetime IPV use (qLifeIPV).

Table 4 shows the ACE items that were removed from the regression analysis during this review round. Thirty-five variables were pared down to 15 variables for use in the present study's analyses. All of the 135 items considered for inclusion are in Appendix C. Details on the 35 variables considered in the second-round analysis are in Appendix B, which includes variable construction details.

Table 4

ACE Predictor Variable Inclusion Analyses

Block	Beginning	Endorsed Under 3%*	Bivariate Correlation ≤ 0.08	Final
Family-of-origin Violence	5	0	1	4
Impaired Parenting	16	0	8	8
Individual adversities	14	3	8	3
Total:	**35**	**3**	**17**	**15**

* Unweighted

Data Analysis Plan

SPSS v.26 was used for all analyses, unless otherwise noted. Frequencies were tabulated for the entire sample to see the characteristics of the sample. The frequencies were calculated by distinguishing between individuals who did not and did endorse IPV use (i.e., 'No IPV use,' 'Yes IPV use'). There are a few options for interpreting outputs from logistic regression analyses. The adjusted odds ratios (*OR* value) will be used to present these results. The alpha level for this study was set at .05.

The NCS-R sampling distribution under-represented men and over-sampled other groups (Kessler, Berglund et al., 2004). To compensate for this, variables in the models used the sample weight developed for each NCS-R study participant. This provided study

results that were representative of the general population in the United States excluding Hawaii and Alaska. All of the analyses, unless otherwise identified, used weighted variables.

The present study aimed to examine the influence of exposure to ACE on men's self-reported lifetime IPV use. Often research studies recruited participants convicted of a physical assault (i.e., IPV) against a woman in his or her residence, then the offender was required by the courts to attend an IPV offender re-education program as part of sentencing (e.g., probation). This tended to result in studies that look at men who engaged in IPV use during the past-12 months. In contrast, the present study was able to combine IPV use while dating with IPV use during any period in his current relationship, enabling the present study to look at lifetime IPV use. In addition, the participants were from a national study, rather than the criminal justice system. The outcome variable in the present study was binary ('No IPV use,' 'Yes IPV use'), which required conducting binomial logistic regression to properly fit a model. In addition, a hierarchical approach was employed by introducing blocks of theoretically associated variables into the model to compare the model's relative fit and contribution towards explaining lifetime IPV use. Most of the variables identified in the present study have been tested in IPV studies individually. Few variables have been combined together theoretically into blocks and tested as a model.

Family-of-origin violence predictors were chosen for the first block because it contained the variables most frequently used in IPV research. Testing them in a standalone model provided an opportunity to see what combination of family-of-origin violence variables were associated with men's lifetime IPV use among participants from

a national community study, for the null hypothesis. Blocks were entered into the hierarchical model in the following order: (1) family-of-origin violence variables were entered into the first block, (2) impaired parenting variables were entered into the second block, and (3) individual adversities variables were entered into the third block. A hierarchical model was used to determine the extent to which the variables uniquely and cumulatively predicted lifetime IPV use above and beyond the other predictors.

The first regression analysis was done with the family-of-origin violence block, it was identified as Block 1, Model 1. The second regression analysis was executed with impaired parenting as a standalone block, identified as Block 2, with the model denoted with an A, so Model 2A. When Block 2 was combined with Block 1 to create a hierarchical model, it was identified as Model 2B. This same nomenclature was used when individual adversities, Block 3, was included in the analysis. Model 3A was the standalone model. When Block 3 was combined with the family-of-origin violence and impaired parenting blocks to create a hierarchical model; it was identified as Model 3B.

Bivariate Correlation Analyses

While some level of correlation is expected, when there is a very high correlation between variables those variables are presumed to be measuring the same concept. A bivariate test looks for pairs of highly correlated variables, $\rho \geq 0.80$. Table 5 displays the bivariate correlations for variables used in the present study. The non-parametric Spearman rho correlation coefficient, two-tailed with pair-wise deletion, was used for all of the variables in the study because there was a mix of binary, ordinal, and interval measured variables with most of them zero-inflated (i.e., non-normal). The Spearman rho

correlation does not assume a normal distribution for the statistical test when inferring the results (Glasser & Winter, 1961). There were no pairs of highly correlated variables.

There were four correlations $\rho > 0.4$. The correlations were: $\rho = 0.645$, qCH2C 'your age if your parents divorced (by age 16)' with qCH3 'how many of your parents' partners did you live with for 6 or more months'; $\rho = 0.580$ qCH28 'how frequently did anyone in the household do a thing(s) on List A [mild-moderate physical abuse] to you' with qCH28A2 'did man-parental figure do a thing(s) on List A [mild-moderate physical abuse] to you'; $\rho = 0.502$ qCH28 'how frequently did anyone in the household do a thing(s) on List A [mild-moderate physical abuse] to you' with qCH28A1 'did woman-parental figure do a thing(s) on List A [mild-moderate physical abuse] to you'; and $\rho = 0.413$ qCH85 'how frequently did man-parental figure experience alcohol and/or drug use problems' with qCH29 'how frequently did a parent(s) do thing(s) on List A [mild-moderate physical abuse] to each other.' Three of these correlations contained at least one variable from the family-of-origin violence block with the other variable from the impaired parenting block.

Table 5

Bivariate Correlation with Study Variables

		1	2	3	4	5	6
1	qLifeIPV	1					
2	qCH28	.182 ***	1				
3	qCH28A1	.153 ***	.502 ***	1			
4	qCH28A2	.096 ***	.580 ***	.252 ***	1		
5	qCH29	.206 ***	.346 ***	.103 ***	.293 ***	1	
6	qCH2C	.084 **	.048	.054 *	.035	.208 ***	1
7	qCH3	.100 ***	.059 *	.050	.000	.185 ***	.645 ***
8	qCH30	.183 ***	.222 ***	.134 ***	.139 ***	.302 ***	.183 ***
9	qCH41	.105 ***	.215 ***	.121 ***	.101 ***	.287 ***	.079 **

10	qCH63	.085	**	.173	***	.016		.141	***	.359	***	.082	**
11	qCH66	.155	***	.133	***	.089	**	.106	***	.297	***	.109	***
12	qCH71	.109	***	.193	***	.006		.211	***	.291	***	.015	
13	qCH86	.108	***	.192	***	.029		.213	***	.413	***	.107	***
14	qCN7_2	.168	***	.068	*	.014		.040		.081	**	.070	*
15	qECON	.093	***	.115	***	.052		.016		.225	***	.233	***
16	qRANCEST	.083	**	.011		.030		-.034		.019		.038	

*$p < .05$. **$p < .01$. ***$p < .001$.
Spearman rho correlation, two-tailed, pairwise deletion.
Refer to Table 6 for variable descriptions.

Table 5 (Continued)

Bivariate Correlation with Study Variables

		7		8		9		10		11		12	
1	qLifeIPV												
2	qCH28												
3	qCH28A1												
4	qCH28A2												
5	qCH29												
6	qCH2C												
7	qCH3	1											
8	qCH30	.227	***	1									
9	qCH41	.081	**	.249	***	1							
10	qCH63	.066	*	.218	***	.192	***	1					
11	qCH66	.133	***	.342	***	.214	***	.380	***	1			
12	qCH71	.013		.110	***	.286	***	.172	***	.157	***	1	
13	qCH86	.110	***	.279	***	.174	***	.385	***	.377	***	.319	***
14	qCN7_2	.045		.096	***	.082	**	.005		.043		-.027	
15	qECON	.251	***	.300	***	.225	***	.180	***	.185	***	.164	***
16	qRANCEST	.131	***	.059	*	-0.0		-.003		.028		-.037	

*$p < .05$. **$p < .01$. ***$p < .001$.
Spearman rho correlation, two-tailed, pairwise deletion.
Refer to Table 6 for variable descriptions.

Table 5 (Continued)

Bivariate Correlation with Study Variables

	13	14	15	16
1 qLifeIPV				
2 qCH28				
3 qCH28A1				
4 qCH28A2				
5 qCH29				
6 qCH2C				
7 qCH3				
8 qCH30				
9 qCH41				
10 qCH63				
11 qCH66				
12 qCH71				
13 qCH86	1			
14 qCN7_2	.002	1		
15 qECON	.287 ***	.061 *	1	
16 qRANCEST	-.026	.107 ***	.096 ***	1

*$p < .05$. **$p < .01$. ***$p < .001$.

Spearman rho correlation, two-tailed, pairwise deletion.

Refer to Table 6 for variable descriptions.

Multicollinearity Data Analysis

Table 6 displays the results of the multicollinearity analysis for the variables used in the present study. The multicollinearity test looked for two or more variables that were highly correlated. Multicollinearity makes obtaining reliable estimates for those variables' individual regression coefficients problematic (Grewal, Cote, & Baumgartner, 2004). Field (2018) recommended using three guidelines to verify the assumption that the level of multicollinearity between variables will not interfere with the predictive capability of the model. This would occur by inflating the variance of the explanatory variables. They are: 1) A variance inflation factor score (VIF) between 1 and 10, 2) the

average VIF was not substantially greater than 1, and 3) a tolerance above 0.2. Using these guidelines, multicollinearity was not identified as an issue in the present study.

Table 6

Multicollinearity Diagnostics

	Name	Description	Tolerance	VIF
1	qCH28	How frequently did anyone in the household do a thing(s) on List A to you	.55	1.81
2	qCH28A1	Did woman-parental figure do a thing(s) on List A to you	.77	1.30
3	qCH28A2	Did man-parental figure do a thing(s) on List A to you	.68	1.47
4	qCH29	How frequently did a parent(s) do thing(s) on List A to each other	.58	1.73
5	qCH2C	Your age if your parents divorced (by age 16)	.66	1.51
6	qCH3	How many of your parents' partners did you live with for 6 or more months	.62	1.62
7	qCH30	How frequently did you experience physical neglect by your parent(s)	.76	1.32
8	qCH41	How frequently did woman-parental figure experience anxiety and/or depression	.82	1.22
9	qCH63	Did growing-up parent(s) often get into physical fights	.64	1.56
10	qCH66	Did parent(s) run around or desert the family	.72	1.38
11	qCH71	How frequently did man-parental figure experience anxiety and/or depression	.80	1.25
12	qCH86	How frequently did man-parental figure experience alcohol and/or drug use problems	.66	1.51
13	qCN7_2	Your age when partner got pregnant or miscarriage/stillbirth/abortion	.97	1.03
14	qECON	Were you economically disadvantaged while growing up	.82	1.22
15	qRANCEST	Participant is a minority	.95	1.06
		Average:	n/a	**1.31**

CHAPTER IV: RESULTS

Descriptive Statistics

The study sample's descriptive statistic frequencies by IPV use ('No IPV use,' 'Yes IPV use') are presented in Table 7. Frequencies, missingness, and correlations with IPV use for all of the variables used in the analyses are presented in Table 8, followed by the interval variables descriptive statistics in Table 9.

Study Sample Descriptive Statistics. In Table 7, the study participants were separated into two groups ('No IPV use,' 'Yes IPV use'). This enabled identifying differences in frequently of endorsement for each category, for example, *Age*. Then, within a category are groups, for example, *18-29 years*, *30-39 years*, etc. For the DSM diagnoses, the number of participants who did and did not endorse the diagnosis was provided in addition to the information noted previously. Each descriptive category was tested for correlation with IPV use utilizing Pearson chi-square test of independence. With the exception of work status, the areas associated with financial stability were not significantly correlated with IPV use. These areas included: education, occupation, income level, and Poverty Index – 2001 Census Income-to-Needs Ratio.

The *Age of participant* category. The average age of men in the present study was 51 years old. The largest group in the study sample was *40 to 49 years* (23%) with the smallest group *18 to 29 years* (8.7%). One participant was age 18. In four out of the six groups, a higher percentage of participants positively endorsed 'Yes IPV use' than 'No IPV use.' The highest group discrepancy for participants who endorsed 'Yes IPV use' compared to 'No IPV use' was *18 to 29 years* by 6.5% and for 'No IPV use' when compared to 'Yes IPV use' was *70 years of age or older* by 12.3%.

The *Race/Ancestry* category. The largest group in the study sample was *Non-Latino Whites* (79.5%). In three out of the five groups, a higher percentage of participants positively endorsed 'Yes IPV use' than 'No IPV use.' The highest group discrepancy for participants who endorsed 'Yes IPV use' compared to 'No IPV use' was *Blacks* by 9.8%.

The *Work status*. The largest group in the study sample was *Employed* (71%) with the smallest group *Unemployed* (11.9%). In one of the three groups, a higher percentage of participants positively endorsed 'Yes IPV use' then endorosed 'No IPV use.' The highest group discrepancy for participants who endorsed 'Yes IPV use' compared to 'No IPV use' was *Employed* by 7.4% and for endorsed 'No IPV use' when compared to 'Yes IPV use' was *Unemployed* by 5.7%.

The parent study (NCS-R) broke down lifetime IPV use into dating (prior) relationship(s) and his current (marriage-like) relationship. Twelve percent of participants reported IPV use in *Dating only* relationships and 75% of participants reported IPV use in *Current only* relationships, which suggested that their IPV use was not present in all of their relationships. Thirteen percent of participants reported IPV use in *Dating and current* relationships, which suggested the present of IPV in throughout their lifetime.

How often spouse/partner has temper tantrums category. The largest group in the study sample was *Never* (65.1%) with the smallest group *Often* (3%). In three of the four groups, a higher percentage of participants positively endorsed 'Yes IPV use' than 'No IPV use.' The highest group discrepancy for participants who endorsed 'Yes IPV use' compared to 'No IPV use' was in *Sometimes* by 13.7%.

Six types of mental health diagnoses were included in Table 14: depression, anxiety/panic, PTSD, bipolar, intermittent explosive (IED), and alcohol or drug abuse or

dependence. Participants were assessed, using the DSM-IV criteria, to identify whether they had experienced symptoms consistent with a mental health diagnosis at some point during their lifetime. Across all mental health diagnoses, more participants endorsed a diagnosis in the 'Yes IPV use' group compared to the 'No IPV use' group. All but one mental health diagnosis was associated with IPV use utilizing the Pearson chi-square test of independence: PTSD. Of those that were associated with IPV use, anxiety/panic was endorsed by 20.5% of participants and the least endorsed was bipolar disorder by 2.2% of participants. The highest group discrepancy for participants who endorsed 'Yes IPV use' compared to 'No IPV use' was IED by 13.8% and the second highest group discrepancy was substance abuse/disorder by 12.4%.

Table 7
Participant Demographics

Group	Category	All Participants *n*	All Participants %	No IPV Use *n*	No IPV Use %	Yes IPV Use *n*	Yes IPV Use %	No IPV versus Yes IPV	$\chi 2$ *p*-value
Men		1296		1098	84.8%	198	15.3%		
Age of participant		1294							***
	18-29 years	113	8.7%	85	7.7%	28	14.2%	-6.5%	
	30-39 years	247	19.1%	203	18.5%	44	22.3%	-3.8%	
	40-49 years	298	23.0%	246	22.4%	52	26.4%	-4.0%	
	50-59 years	246	19.0%	205	18.7%	41	20.8%	-2.1%	
	60-69 years	176	13.6%	156	14.2%	20	10.2%	4.1%	
	70 years of age or older	214	16.5%	202	18.4%	12	6.1%	12.3%	
Race/Ancestry		1295							***
	Asian	26	2.0%	24	2.2%	2	1.0%	1.2%	
	Latino	115	8.9%	97	8.8%	18	9.1%	-0.2%	
	Blacks	108	8.3%	75	6.8%	33	16.7%	-9.8%	
	Non-Latino Whites	1029	79.5%	888	80.9%	141	71.2%	9.7%	
	All others	17	1.3%	13	1.2%	4	2.0%	-0.8%	
Education level		1295							
	Left prior to 12th grade	212	16.4%	189	17.2%	23	11.7%	5.5%	
	Completed 12th grade	390	30.1%	330	30.1%	60	30.5%	-0.4%	
	Some college	324	25.0%	262	23.9%	62	31.5%	-7.6%	
	Four-years or more of college	369	28.5%	317	28.9%	52	26.4%	2.5%	

Occupation	1261		1065		196		
Corp/General managers	177	14.0%	141	13.2%	36	18.4%	-5.1%
Professional (Bachelors or more)	211	16.7%	179	16.8%	32	16.3%	0.5%
Associate professional	106	8.4%	94	8.8%	12	6.1%	2.7%
Office clerks	36	2.9%	33	3.1%	3	1.5%	1.6%
Customer service clerks	35	2.8%	31	2.9%	4	2.0%	0.9%
Pers/Prot serv worker	57	4.5%	45	4.2%	12	6.1%	-1.9%
Trades workers	214	17.0%	180	16.9%	34	17.3%	-0.4%
Operators	182	14.4%	156	14.6%	26	13.3%	1.4%
Perf routine tasks	145	11.5%	121	11.4%	24	12.2%	-0.9%
Other	98	7.8%	85	8.0%	13	6.6%	1.3%
Participant income per year[1]	842		701		141		
No income	176	20.9%	143	20.4%	33	23.4%	-3.0%
$1 - $19,999	245	29.1%	199	28.4%	46	32.6%	-4.2%
$20,000-$49,999	282	33.5%	241	34.4%	41	29.1%	5.3%
$50,000-$74,999	72	8.6%	66	9.4%	6	4.3%	5.2%
$75,000 or more	67	8.0%	52	7.4%	15	10.6%	-3.2%
Poverty Index – 2001 Census Income-to-Needs Ratio[1]	816		676		140		
0 - 0.99	24	2.9%	19	2.8%	5	3.6%	-0.8%
1 – 1.99	55	6.7%	44	6.5%	11	7.9%	-1.3%
2 – 3.99	195	23.9%	158	23.4%	37	26.4%	-3.1%
4 or more	542	66.4%	455	67.3%	87	62.1%	5.2%
Work status	1296						*
Employed	920	71.0%	767	69.9%	153	77.3%	-7.4%
Unemployed	154	11.9%	140	12.8%	14	7.1%	5.7%
Not in labor force	222	17.1%	191	17.4%	31	15.7%	1.7%
Period of IPV Use[2]	197						
Dating only	24				24	12.2%	
Dating & current	25				25	12.7%	
Current only	148				148	75.1%	
Current past-12 months	72				72	35.5%	
Current before past-12 mth	76				76	38.5%	
How often spouse/partner has temper tantrums							***
Often	39	3.0%	23	2.1%	16	8.1%	-6.0%
Sometimes	113	8.7%	73	6.7%	40	20.3%	-13.7%
Rarely	300	23.2%	234	21.3%	66	33.5%	-12.2%
Never	842	65.1%	767	69.9%	75	38.1%	31.8%

Experienced depression during lifetime								*
No	1200	92.7%	1024	93.3%	176	89.3%	4.0%	
Yes	94	7.3%	73	6.7%	21	10.7%	-4.0%	
Experienced anxiety/panic during lifetime								**
No	1030	79.5%	886	80.8%	144	72.7%	8.0%	
Yes	265	20.5%	211	19.2%	54	27.3%	-8.0%	
Experienced PTSD during lifetime								
No	1271	98.1%	1079	98.3%	192	97.5%	0.8%	
Yes	24	1.9%	19	1.7%	5	2.5%	-0.8%	
Experienced bipolar during lifetime								**
No	1266	97.8%	1079	98.4%	187	94.9%	3.4%	
Yes	28	2.2%	18	1.6%	10	5.1%	-3.4%	
Experienced IED during lifetime								***
No	1209	93.4%	1048	95.5%	161	81.7%	13.8%	
Yes	85	6.6%	49	4.5%	36	18.3%	-13.8%	
Experienced alcohol or drug abuse or dependence in lifetime								***
No	126	90.3%	1011	92.2%	158	79.8%	12.4%	
Yes	1169	9.7%	86	7.8%	40	20.2%	-12.4%	

[1] Missing data: some items in Part II were missing at 40%; they were included to provide background.

[2] This is only relevant for participants in the 'Yes IPV use' group, so there is no data for the 'No IPV use' group.

* $p < .05$, ** $p < .01$, *** $p < .001$.

	$\chi 2^*$	*df*	*p*
Age of participant	31.48	6.00	.000
Race/Ancestry	23.89	6.00	.001
Education level	7.36	3.00	.061
Occupation	8.49	9.00	.485
Participant income per year	7.40	4.00	.116
Poverty Index – 2001 Census Income-to-Needs Ratio	1.46	3.00	.692
Work status	6.15	2.00	.046
How often spouse/partner has temper tantrums	92.45	3.00	.000
Experienced depression	3.97	1.00	.046
Experienced anxiety/panic	6.66	1.00	.010
Experienced PTSD	.599	1.00	.439
Experienced bipolar	9.31	1.00	.002
Experienced IED	51.87	1.00	.000
Experienced alcohol or drug abuse or dependence	29.1	1.00	.000

*Pearson's chi-square test of independence

Variable Descriptive Statistics. Table 8 displays the following data for each variable in the study: overall frequency for each group in sample, frequency for each group distinguished by IPV use (i.e., 'No IPV use,' 'Yes IPV use'), percent missingness, and the bivariate correlation with IPV use. This table used the same methodology as Table 7 by providing the frequency for a group as a percentage of the total study sample, then the frequency within that specific group for 'Yes IPV use' and 'No IPV use.' Three of the top four highest variable discrepancies between these two groups were variables in the family-of-origin violence block.

In all of the blocks, men in the 'Yes IPV use' group had a higher percentage of men positively endorsing the ACE variables than did men in the 'No IPV use' group. 'How frequently did anyone in the household do a thing(s) on List A [mild-moderate physical abuse] to you' had the highest discrepancy between the two groups of 23.2%. The second highest discrepancy of 20.8% was for 'how frequently did a parent(s) do thing(s) on List A [mild-moderate physical abuse] to each other,' i.e., witnessed parental IPV. The third highest discrepancy of 18.4% was a variable from the impaired parenting block, 'how frequently did you experience physical neglect by your parent(s).' The fourth highest discrepancy of 16.6% was for 'did woman-parental figure do a thing(s) on List A [mild-moderate physical abuse] to you,' i.e., parental physical abuse. The variable with the smallest discrepancy of 5% was the variable 'did growing-up parent(s) often get into physical fights.' That variable appeared to reflect the use of physical aggression outside of the family; the study sample's positive endorsement was 5.5% versus 14.8% for 'how frequently did a parent(s) do thing(s) on List A [mild-moderate abuse] to each other.'

Table 8

Variable Frequencies, Missingness, and Bivariate Correlation of Study Variables

Name	Total Sample No	Total Sample Yes	Total Sample % Yes	No IPV Use No	No IPV Use Yes	No IPV Use % Yes	Yes IPV Use No	Yes IPV Use Yes	Yes IPV Use % Yes	(H)/L[1]	Miss	Corr[2]
Block 1												
qCH28	747	547	42.3%	672	425	38.7%	75	122	61.9%	-23.2%	0.1%	.182***
qCH28A1	1069	225	17.4%	934	163	14.9%	135	62	31.5%	-16.6%	0.1%	.153***
qCH28A2	1010	283	21.9%	876	220	20.1%	134	63	32.0%	-11.9%	0.2%	.096***
qCH29	1102	192	14.8%	969	128	11.7%	133	64	32.5%	-20.8%	0.1%	.206***
Block 2												
qCH2C	1115	180	13.9%	958	139	12.7%	157	41	20.7%	-8.0%	0.0%	.084**
qCH3	976	318	24.6%	849	247	22.5%	127	71	35.9%	-13.3%	0.1%	.100***
qCH30	1043	251	19.4%	915	182	16.6%	128	69	35.0%	-18.4%	0.1%	.183***
qCH41	1075	203	15.9%	930	156	14.4%	145	47	24.5%	-10.1%	1.3%	.105***
qCH63	1219	71	5.5%	1043	52	4.7%	176	19	9.7%	-5.0%	0.4%	.085**
qCH66	1189	100	7.8%	1027	66	6.0%	162	34	17.3%	-11.3%	0.5%	.155***
qCH71	1102	102	8.5%	951	72	7.0%	151	30	16.6%	-9.5%	7.0%	.109**
qCH86	1032	194	15.8%	894	147	14.1%	138	47	25.4%	-11.3%	5.3%	.108***
Block 3												
qCN7_2	1252	32	2.5%	1073	15	1.4%	179	17	8.7%	-7.3%	0.8%	.168***
qECON	1139	151	11.7%	982	112	10.2%	157	39	19.9%	-9.7%	0.4%	.093***
qRANCEST	1029	266	20.5%	888	209	19.1%	141	57	28.8%	-9.7%	0.0%	.083**

1 (H) = higher, L = lower, 'Yes IPV use' is higher or lower than 'No IPV use'

2 Corr = bivariate correlation used Spearman rho, two-tailed bivariate correlation with Lifetime IPV use.

* p < .05, ** p < .01, *** p < .001.

Key:

qCH28 How frequently did anyone in the household do a thing(s) on List A [mild-moderate physical abuse] to you

qCH28A1 Did woman-parental figure do a thing(s) on List A [mild-moderate physical abuse] to you

qCH28A2 Did man-parental figure do a thing(s) on List A [mild-moderate physical abuse] to you

qCH29 How frequently did a parent(s) do thing(s) on List A [mild-moderate physical abuse] to each other

qCH2C	Your age if your parents divorced (by age 16)
qCH3	How many of your parents' partners did you live with for 6 or more months
qCH30	How frequently did you experience physical neglect by your parent(s)
qCH41	How frequently did woman-parental figure experience anxiety and/or depression
qCH63	Did growing-up parent(s) often get into physical fights
qCH66	Did parent(s) run around or desert the family
qCH71	How frequently did man-parental figure experience anxiety and/or depression
qCH86	How frequently did man-parental figure experience alcohol and/or drug use problems
qCN7_2	Your age when girlfriend got pregnant or miscarriage/stillbirth/abortion
qECON	Were you economically disadvantaged while growing up
qRANCEST	Participant is a minority

There were six interval variables. Three of which were developed utilizing two or more categorical items, for details refer to Appendix B, Variable Codebook. Table 9 provides the mean, standard deviation, minimum, and maximum statistics for the interval variables.

Table 9

Means and Standard Deviations for Continuous Variables

Name	Mean	SD	Min	Max
Block 2: Impaired Parenting				
qCH2C	1.39	3.85	0.00	16.00
qCH3	0.67	1.36	0.00	10.00
qCH30 *	0.31	0.71	0.00	3.00
qCH41 *	0.29	0.72	0.00	3.00
qCH71 *	0.16	0.55	0.00	3.00
Block 3: Individual adversities				
qCN7_2	0.05	0.40	0.00	6.00

* Two or more ordinal items that were averaged resulting in an interval.

Refer to Table 8 for variable description.

Binary Logistic Regression Analyses

Several statistics were utilized to support the identification of significant predictors and significant models. The variables identified as significant met the criteria $p < .05$. The odds ratio (*OR*) value was the statistic used to identify meaningful predictors. When the *OR* value is 1, it means the odds of that variable increasing the likelihood of

men's IPV use was not present. In other words, experiencing that particular ACE would not increase the likelihood of engaging in physical IPV. There are guidelines to support interpretation of *OR* values when assessing the magnitude of effect size for ordinal data, which constituted 60% of the variables in the present study: *OR* value about 1.5 = small, about 2.5 = medium, about 4 = large, and about 10 = very large (Rosenthal, 1996). Of interest, introducing a new block(s) to develop a hierarchical model can change the *OR* value and *p*-value of a variable.

To evaluate models, the Hosmer-Lemeshow chi-square test was used to establish whether each model was a good fit for the data. This statistic's predictive accuracy is over 90% with sample sizes greater than 500 (Hosmer, Hosmer, Le Cessie, & Lemeshow, 1997). This chi-square test only establishes whether a model is significant. It will not provide any data to help determine whether one model might be a better fit for the data than another model. R^2 can provide a statistical measure to indicate the amount of variation in men's IPV use explained by the ACE predictors in the model. In logistic regression this is done by utilizing a pseudo R^2. The Nagelkerke R^2 is an adjusted version of the Cox & Snell R-square, which covers the full range from 0 to 1. This is conceptually similar to the R^2 produced by linear regression models, but it is not as precise (Fields, 2018). After a block is added to create a new model, if it is a fit for the data then any incremental change in the model's pseudo R^2 result establishes the value-add of this block. This value-add can be further quantified by identifying the percent improvement in the pseudo R^2. For example, Nagelkerke R^2 in Model 1 was .085 and in Model 2B was .122. Model 2B Nagelkerke R^2 was a 43.5% improvement over Model 1's. To provide additional support to help determine if one model was a better fit for the data

overall, the Likelihood Ratio test was used. This test can assess the goodness of fit of two competing models. It was used to compare standalone blocks as well as hierarchical models. Unfortunately, this statistic was not available in SPSS. So, the models were recreated in Stata. However, it was only possible to do so with unweighted data. This was the only analysis using unweighted variables to support hypotheses testing.

Multiple types of variables were used in the analysis. Four variables were binary, five were categorial variables, and six were interval variables. Among the 15 variables used in the present study, the number of levels within a variable ranged from two to 17. Zero represented the response least likely to have impacted the participant. For example, a two-level variable qCH28A1 'did woman-parental figure do a thing(s) on List A [mild-moderate physical abuse] to you' 0 = no and 1 = yes. In the 17-level variable qCh2C 'your age if your parents divorced (by age 16),' 0 = never divorced or did not divorce by age 16, 1 = 16 years old, 2 = 15 years old, etc. A younger age was represented by a higher numbered level. The assumption was that the older an individual was at the time he experienced the ACE, the more capable they were at emotionally and cognitively processing the event. How each variable was constructed, including which items were used, and its levels are available in Appendix B, Variable Codebook. The model's table notes identified each variable's reference category for testing purposes.

Research Question 1. Research Question 1 stated: To what extent is male participants' exposure to family-of-origin violence associated with the likelihood of self-reported lifetime IPV use? It consisted of two hypotheses. There were four variables in Block 1, all of which explored the use of physical aggression within the participant's

childhood home. There was only one model for this research question. Three of the four predictors (75%) were significant, but the model was a poor model fit for the data.

The first hypothesis looked for the presence of significant variables by analyzing *OR* value and *p*-values, displayed in Table 10. The predictor qCH28 'how frequently did anyone in the household do a thing(s) on List A [mild-moderate physical abuse] to you' had a positive association which indicated that a greater frequency increased the likelihood of IPV use by a factor of *OR* = 1.27. This predictor did not specify the individual(s) who was aggressive, rather it was indicative of how often the participant experienced physical aggression himself at home from members in the household. It had a bivariate correlation with paternal physical abuse of 0.580 and with maternal physical abuse of 0.503. The predictor qCH28A1 'did woman-parental figure do a thing(s) on List A [mild-moderate physical abuse] to you' had a positive association such that a positive endorsement increased the likelihood of IPV use by a factor of *OR* = 1.94. The predictor qCH29 'how frequently did a parent(s) do a thing(s) on List A [mild-moderate physical abuse] to each other,' i.e., witnessed parental IPV, had an association that indicated a greater frequency increased the likelihood of IPV use by a factor of *OR* = 1.67. Because three predictors out of four were significant in Model 1, Research Question 1, Hypothesis 1 was partially accepted.

Table 10

Model 1, Hypothesis 1: Predictors for the Family-of-origin Violence Block

Name	Description	OR	*p*	95% CI	Wald	*B*	S.E.
Block 1: Family-of-origin Violence							
qCH28[a]	How frequently did anyone in the household do a thing(s) on List A to you	1.27	.029	1.02 - 1.58	4.76	.24	.11

qCH28A1[b]	Did woman-parental figure do a thing(s) on List A to you	1.94	.002	1.28 - 2.93	9.93	.66	.21
qCH28A2[b]	Did man-parental figure do a thing(s) on List A to you	1.08	.717	0.71 - 1.62	0.13	.08	.21
qCH29[a]	How frequently did a parent(s) do thing(s) on List A to each other	1.67	.000	1.30 - 2.13	16.34	.51	.13

Grey highlighting used for items when p < .05.
a Referent group: 'no.'
b Referent group: 'never' or 'not at all.'

The second hypothesis tested whether the family-of-origin violence block as a standalone model would predict men's self-reported lifetime IPV use. The model statistics are in Table 11. The pseudo R^2 statistic Nagelkerke R^2 = .085. This statistic suggested that the model explained 8.5% of the variance in IPV use. The Hosmer-Lemeshow test indicated poor model fit: χ^2 (4) = 9.72, p = .045. Due to the Hosmer-Lemeshow test identifying Model 1 as a poor fit for the data, Research Question 1, Hypothesis 2 was rejected.

Table 11
Model 1, Hypothesis 2: Model Summary for the Family-of-origin Violence Block

Nagelkerke R^2	.085
Hosmer Lemeshow's $\chi 2$	(4) = 9.72, p = .045
Likelihood Ratio Test*	(4) = 54.51, p = .000

Note: Observations = 1,188, IPV = 178
* Executed with unweighted data in Stata

Research Question 2. Research Question 2 stated: To what extent is male participants' exposure to impaired parenting associated with their likelihood of self-reported lifetime IPV use when controlling for family-of-origin violence? This question had four hypotheses. Block 2 consisted of eight ACE variables all representing potentially harmful parental behaviors and challenges that could be barriers to effective

parenting. Two models were used for this research question. The first model was Model 2A, consisted of Block 2.

The first two hypotheses explored the impaired parenting block as a standalone model, Model 2A. The first hypothesis tested the variable in the impaired parenting block. The *OR* values and *p*-values are displayed in Table 12. qCH30 'how frequently did you experience physical neglect by your parent(s)' had a positive association which indicated that a greater frequency increased the likelihood of IPV use by a factor of *OR* = 1.51. A positive endorsement of the predictor qCH66 'did parent(s) run around or desert the family' increased the likelihood of IPV use by a factor of *OR* = 2.07. The predictor qCH71 'how frequently did man-parental figure experience anxiety and/or depression' had a positive association which indicated that a greater frequency increased the likelihood of IPV use by a factor of *OR* = 1.43. Because three predictors out of eight in Model 2A were significant (37.5%), Research Question 2, Hypothesis 1 was partially accepted.

Table 12

Model 2A, Hypothesis 1: Predictor Summary for the Impaired Parenting Block

Name	Description	OR	*p*	95% CI	*Wald*	*B*	S.E.
Block 2: Impaired Parenting							
qCH2C[d]	Your age if your parents divorced (by age 16)	1.01	.633	0.96 - 1.06	.23	.01	.03
qCH3[c]	How many of your parents' partners did you live with for 6 or more months	1.13	.085	0.98 - 1.28	2.97	.12	.07
qCH30[b]	How frequently did you experience physical neglect by your parent(s)	1.51	.001	1.19 - 1.91	12.00	.42	.12
qCH41[b]	How frequently did woman-parental figure experience anxiety and/or depression	0.99	.916	0.77 - 1.25	.01	-.01	.12
qCH63[a]	Did growing-up parent(s) often get into physical fights	0.74	.420	0.34 - 1.55	.65	-.31	.38
qCH66[a]	Did parent(s) run around or desert the family	2.07	.013	1.16 - 3.68	6.10	.73	.29

qCH71[b]	How frequently did man-parental figure experience anxiety and/or depression	1.43	.009	1.09 - 1.86	6.90	.36	.14
qCH86[b]	How frequently did man-parental figure experience alcohol and/or drug use problems	1.06	.574	0.87 - 1.28	.32	.06	.10

Grey highlighting used for items when p < .05.
a Referent group: 'no.'
b Referent group: 'never' or 'not at all.'
c Referent group: 'none or bio-parents' or 'did not divorce/after age 16.'
d Referent group: 'did not divorce' or 'after age 16.'

The second hypothesis tested whether the impaired parenting block as a standalone model would predict men's self-reported lifetime IPV use. The model statistics are displayed in Table 13. The pseudo R^2 statistic Nagelkerke R^2 = .082. This statistic suggested that the model explained 8.2% of the variance in IPV use. The Hosmer-Lemeshow test indicated a poor model fit: χ^2 (4) = 21.14, p = .000. Due to the Hosmer-Lemeshow test identifying Model 2A as a poor fit for the data, Research Question 2, Hypothesis 2 was rejected. Interestingly, both Model 1 and Model 2A had similar Nagelkerke R^2 results of .085 and .082, respectively, and neither model was a good fit for the data.

Table 13
Model 2A, Hypothesis 2: Model Summary for the Impaired Parenting Block

Nagelkerke R^2	.082
R^2 change, Model 2A to Model 1	-.003
model's % change	-3.5%
Hosmer Lemeshow's $\chi 2$	(4) = 21.14, p = .000
Likelihood Ratio Test*	(8) = 54.40, p = .000
Compared Model 2A to Model 1	
Likelihood Ratio Test*	(4) = -.10, p = .000

Observations = 1,199, IPV use = 179
* Executed with unweighted data in Stata

The third and fourth hypotheses explored whether the impaired parenting block would have significant predictors and be a significant model when controlling for the

family-of-origin violence block, Model 2B. The was done by combining two blocks, family-of-origin violence and impaired parenting, to create a hierarchical model. The third hypothesis tested for the presence of significant variables by analyzing *OR* values and *p*-values, displayed in Table 14. Model 2B enabled testing for changes in the significant predictor in the family-of-origin block (Model 1), when controlling for impaired parenting. In Model 2B, four out of the 12 predictors (33%) were significant, two predictors in each block. Two of the three significant predictors in Model 1 continued to remain significant. qCH28A1's *OR* value decreased to 1.77 from 1.94 and qCH29's *OR* value decreased to 1.44 from 1.67. One predictor was no longer significant, qCH28 'how frequently did anyone in the household do a thing(s) on List A [mild-moderate physical abuse] to you' with $p = .081$.

In the impaired parenting block, two of the three significant predictors previously identified in Model 2A (standalone Block 2) continued to remain significant: qCH30's *OR* value decreased to 1.45 from 1.51 and qCH71's *OR* value decreased to 1.34 from 1.43. The predictor dropped to marginally insignificant: qCH66 'did parent(s) run around or desert the family' with $p = .055$. Because four predictors out of twelve were significant in Model 2B, Research Question 2, Hypothesis 3 was partially accepted.

Table 14
Model 2B, Hypothesis 3: Predictor Summary for Impaired Parenting when Controlling for Family-of-origin Violence

Name	Description	OR	*p*	95% CI	*Wald*	*B*	S.E.
Block 1: Family-of-origin Violence							
qCH28[a]	How frequently did anyone in the household do a thing(s) on List A to you	1.22	.081	0.97 - 1.52	3.04	.20	.11
qCH28A1[b]	Did woman-parental figure do a thing(s) on List A to you	1.77	.010	1.14 - 2.72	6.70	.57	.22

qCH28A2[b]	Did man-parental figure do a thing(s) on List A to you	1.10	.672	0.71 - 1.68	0.18	.09	.22
qCH29[a]	How frequently did a parent(s) do thing(s) on List A to each other	1.44	.022	1.05 - 1.97	5.21	.37	.16

Block 2: Impaired Parenting

qCH2C[d]	Your age if your parents divorced (by age 16)	1.01	.595	0.96 - 1.06	0.28	.01	.03
qCH3c[c]	How many of your parents' partners did you live with for 6 or more months	1.08	.296	0.93 - 1.24	1.09	.08	.07
qCH30[b]	How frequently did you experience physical neglect by your parent(s)	1.45	.003	1.13 - 1.84	9.01	.37	.12
qCH41[b]	How frequently did woman-parental figure experience anxiety and/or depression	0.90	.430	0.70 - 1.16	0.62	-.10	.13
qCH63[a]	Did growing-up parent(s) often get into physical fights	0.52	.122	0.22 - 1.19	2.39	-.65	.42
qCH66[a]	Did parent(s) run around or desert the family	1.80	.055	0.98 - 3.27	3.67	.59	.31
qCH71[b]	How frequently did man-parental figure experience anxiety and/or depression	1.34	.040	1.01 - 1.77	4.21	.29	.14
qCH86[b]	How frequently did man-parental figure experience alcohol and/or drug use problems	1.01	.929	0.82 - 1.23	0.01	.01	.10

Grey highlighting used for items when $p < .05$.
a Referent group: 'no.'
b Referent group: 'never' or 'not at all.'
c Referent group: 'none or bio-parents' or 'did not divorce/after age 16.'
d Referent group: 'did not divorce' or 'after age 16.'

The fourth hypothesis tested whether Model 2B, impaired parenting when controlling for family-of-origin violence, predicted men's self-reported lifetime IPV use. The model fit statistics are displayed in Table 15. The pseudo R^2 statistic Nagelkerke R^2 = .122. This statistic suggested that the model explained 12.2% of the variance in IPV use. This is considered a low effect size. Hosmer-Lemeshow test indicated a good model fit: χ^2 (6) = 7.55, p = .273. Due to the Hosmer-Lemeshow test identifying Model 2B as a good fit for the data, Research Question 2, Hypothesis 4 was accepted. The Nagelkerke

R^2 was a 43.5% improvement for Model 2B when compared to Model 1. These results supported the combining of two blocks to identify a meaningfully greater explanatory power than was provided by the family-of-origin violence block itself, in addition to identifying a significant model that included predictors from the family-of-origin violence block.

Table 15

Model 2B, Hypothesis 4: Model Summary for Impaired Parenting when Controlling for Family-of-origin Violence

Nagelkerke R^2	.122
R^2 change, Model 2B to Model 1	.037
model's % change	43.5%
Hosmer Lemeshow's $\chi 2$	(6) = 7.547, p = .273
Likelihood Ratio Test*	(12) = 70.61, p = .000
Compared Model 2B to Model 1	
Likelihood Ratio Test*	(8) = 16.21, p = - .000

Observations = 1,188, IPV use = 178

* Executed with unweighted data in Stata

Research Question 3. Research Question 3 stated: To what extent is male participants' exposure to individual adversities associated with their likelihood of self-reported lifetime IPV use when controlling for family-of-origin violence and impaired parenting? Research Question 3 had four hypotheses. There were three ACE variables included in Block 3, all of which identified participant experiences *not* directly associated with his family. Two models were used in this research question.

The first two hypotheses explored the individual adversities block as a standalone model, Model 3A. The first hypothesis looked for the presence of significant variables, and the *OR* values and *p*-values are displayed in Table 16. All three predictors in Model 3A were significant. A positive endorsement of predictor qCH7_2 'your age when

girlfriend got pregnant or miscarriage/stillbirth/abortion' increased the likelihood of IPV use by a factor of *OR* = 1.54. A positive endorsement of predictor qECON 'were you economically disadvantaged while growing up' increased the likelihood of IPV use by a factor of *OR* = 2.01. A positive endorsement of the predictor qRANCEST 'participant is a minority' increased the likelihood of IPV use by a factor of *OR* = 1.51. Because all three predictors (100%) were significant in Model 3A, Research Question 3, Hypothesis 1 was accepted.

Table 16

Model 3A, Hypothesis 1: Predictor Summary for the Individual Adversities Block

Name	Description	OR	*p*	95% CI	*Wald*	*B*	S.E.
Block 3: Individual Adversities							
qCN7_2[e]	Your age when girlfriend got pregnant or miscarriage/stillbirth/abortion	1.54	.006	1.13 – 2.08	7.66	.43	.16
qECON[a]	Were you economically disadvantaged while growing up	2.01	.001	1.33 – 3.02	11.11	.70	.21
qRANCEST[a]	Participant is a minority	1.51	.022	1.06 – 2.16	5.23	.42	.18

Grey highlighting used for items when p < .05.
a Referent group: 'no.'
e Referent group: '19 years, older, or n/a.'

The second hypothesis tested whether the individual adversities block as a whole would predict men's lifetime IPV use. The model statistics are displayed in Table 17. The pseudo R^2 statistic Nagelkerke R^2 = .038. This statistic suggested that the model explained 3.8% of the variance in IPV use, which was the lowest pseudo R^2 among the three standalone models. However, the Hosmer-Lemeshow test indicated good model fit: χ^2 (2) = 1.03, p = .598. This model was the only standalone model that was a good fit for the data. Due to the Hosmer-Lemeshow test identifying Model 3A as a good fit for the data, Research Question 3, Hypothesis 2 was accepted.

Table 17

Model 3A, Hypothesis 1: Model Summary for Individual Adversities Block

Nagelkerke R^2	.038
R^2 change, Model 3A to Model 1	-.047
model's % change	-55.3%
R^2 change, Model 3A to Model 2A	-.044
model's % change	-53.7%
Hosmer Lemeshow's $\chi 2$	(2) = 1.03, p = .598
Likelihood Ratio Test*	(3) = 36.39, p = .000
Compare Model 3A to Model 1	
Likelihood Ratio Test*	(-1) = -18.12, p = .000
Compare Model 3A to Model 2A	
Likelihood Ratio Test*	(5) = -18.01, p = .000

Observations = 1,297, IPV use = 194

* Executed with unweighted data in Stata

The third and fourth hypotheses explored whether the individual adversities block when controlled for the previous two blocks, family-of-origin violence and impaired parenting, would predict men's self-reported lifetime IPV use, Model 3B. The *OR* values and *p*-values are displayed in Table 18. Combining all three blocks into a single model enabled testing for changes in the previous model (Model 2B) when controlling for individual adversities. All four significant predictors in Model 2B continued to remain significant in Model 3B. However, a fifth predictor emerged as significant in the impaired parenting block. While there were changes in *OR* values, they were not materially substantial. Beginning with Block 1, the predictor qCH28A1 increased to 1.79 from 1.77 and qCH29 decreased to 1.40 from 1.44. In Block 2, qCH30 decreased to 1.38 from 1.45 and qCH71 increased to 1.38 from 1.34. The predictor that emerged as significant was qCH66 'did parent(s) run around or desert the family'; A positive endorsement increased the likelihood of IPV use by a factor of *OR* = 1.87. Of note, this

predictor had the highest *OR* value among the predictors in either hierarchal model, yet was marginally insignificant in Model 2B.

Of the three significant predictors previously identified in Model 3A (standalone Block 3), two predictors continued to remain significant in Model 3B. The predictor qCH7_2 decreased *OR* value to 1.49 from 1.54 and qRANCEST with almost no change in the *OR* value at 1.50 from 1.51. Because seven out of 15 predictors were significant (47%) in Model 3A, Research Question 3, Hypothesis 3 was partially accepted.

Table 18
Model 3B, Hypothesis 3: Predictor Summary for Individual adversities when Controlling for Impaired Parenting and Family-of-origin Violence

Name	Description	OR	*p*	95% CI	*Wald*	*B*	S.E.
Block 1: Family-of-origin Violence							
qCH28[a]	How frequently did anyone in the household do a thing(s) on List A to you	1.20	.121	0.95 - 1.50	2.41	.18	.12
qCH28A1[b]	Did woman-parental figure do a thing(s) on List A to you	1.79	.009	1.16 - 2.77	6.91	.58	.22
qCH28A2[b]	Did man-parental figure do a thing(s) on List A to you	1.15	.531	0.74 - 1.77	0.39	.14	.22
qCH29[a]	How frequently did a parent(s) do thing(s) on List A to each other	1.40	.037	1.02 - 1.93	4.35	.34	.16
Block 2: Impaired Parenting							
qCH2C[d]	Your age if your parents divorced (by age 16)	1.02	.476	0.96 - 1.07	0.51	.02	.03
qCH3c[c]	How many of your parents' partners did you live with for 6 or more months	1.05	.551	0.90 - 1.20	0.36	.04	.07
qCH30[b]	How frequently did you experience physical neglect by your parent(s)	1.38	.011	1.07 - 1.76	6.48	.32	.13

qCH41[b]	How frequently did woman-parental figure experience anxiety and/or depression	0.89	.375	0.69 - 1.14	0.79	-.11	.13
qCH63[a]	Did growing-up parent(s) often get into physical fights	0.52	.126	0.22 - 1.19	2.35	-.65	.43
qCH66[a]	Did parent(s) run around or desert the family	1.87	.041	1.02 - 3.40	4.16	.62	.31
qCH71[b]	How frequently did man-parental figure experience anxiety and/or depression	1.38	.026	1.03 - 1.83	4.93	.32	.14
qCH86[b]	How frequently did man-parental figure experience alcohol and/or drug use problems	1.00	.985	0.81 - 1.23	0.00	.00	.11
Block 3: Individual Adversities							
qCN7_2[e]	Your age when girlfriend got pregnant or miscarriage/stillbirth/abortion	1.49	.023	1.05 - 2.10	5.14	.40	.18
qECON[a]	Were you economically disadvantaged while growing up	1.33	.274	0.79 - 2.24	1.20	.29	.26
qRANCEST[a]	Participant is a minority	1.50	.050	0.99 - 2.23	3.83	.40	.21

Grey highlighting used for items when $p < .05$.
a Referent group: 'no.'
b Referent group: 'never' or 'not at all.'
c Referent group: 'none or bio-parents' or 'did not divorce/after age 16.'
d Referent group: 'did not divorce' or 'after age 16.'
e Referent group: '19 years, older, or n/a.'

The fourth hypothesis tested whether the Model 3B, individual adversities when controlling for family-of-origin violence and impaired parenting, would predict men's self-reported lifetime IPV use. The results are display in Table 19. The pseudo R^2 statistic Nagelkerke $R^2 = .138$ explained 13.8% of the variance in IPV use. The Hosmer-Lemeshow test indicated a good model fit: χ^2 (7) = 7.45, $p = .384$. Due to the Hosmer-Lemeshow test identifying Model 3B as a good fit for the data, Research Question 3,

Hypothesis 4 was accepted. Even though Model 3B did not add substantially to a change in the pseudo R^2 from Model 2B, it provided insight into the forms of ACE experiences that were associated with men's lifetime IPV use. It is important to note that the majority of the predictors' *OR* values were small. Two variables were in the small-to-medium range.

Table 19

Model 3B, Hypothesis 4: Model Summary for Individual Adversities when Controlling for Impaired Parenting and Family-of-origin Violence

Nagelkerke R^2	.138
R^2 change, Model 3B to Model 1	.053
model's % change	62.4%
R^2 change, Model 3B to Model 2B	.016
model's % change	13.1%
Hosmer Lemeshow's $\chi 2$	(7) = 7.45, p = .384
Likelihood Ratio Test*	(15) = 84.73, p = .000
Compare Model 3B to Model 1	
Likelihood Ratio Test*	(11) = 30.22, p = -.000
Compare Model 3B to Model 2B	
Likelihood Ratio Test*	(3) = 14.12, p = -.000

Observations = 1,188, IPV use = 178
* Executed with unweighted data in Stata

Regression Analysis Summary. The null hypothesis in the present study was explored by research question 1 to determine whether the ACE category family-of-origin violence is with associated men's lifetime IPV use. Power and control IPV theory posits that only family-of-origin violence is associated with men's IPV. Research question 2 and research question 3 represented alternative hypotheses. The proposed hypotheses in the present study were either accepted, partially accepted, or rejected, as shown in Table 20. A summary of the statistics for predictors and models are displayed in Table 21. The

present study identified significant ACE predictors and which models were a good fit for the data. In the final model, Model 3B, five predictors had a small association with IPV use and two predictors were in the small-to-moderate range. The inclusion of individual adversities did not result in a materially, substantially improved model when it was compared to Model 2B. However, Model 3B did add value because it provided insight into additional types of ACE experiences associated with men's lifetime IPV use. The value of the individual adversities predictors was supported when the individual adversities block was the only significant standalone model. The results of this study will be discussed further in light of theory, previous research results, and implications in Chapter 5, Discussion.

Table 20

Summary of Research Questions and Hypotheses

Hypotheses	Models	Predictors Included	Predictors Identified	Model* χ^2 *p*-value	Result
Research Question 1					
Null Hypothesis 1	Model 1	4	3		Partially accepted
Null Hypothesis 2	Model 1			.045	Rejected
Research Question 2					
Alternative Hypothesis 1	Model 2A	8	3		Partially accepted
Alternative Hypothesis 2	Model 2A			.000	Rejected
Alternative Hypothesis 3	Model 2B	12	4		Partially accepted
Alternative Hypothesis 4	Model 2B			.491	Accepted

Research Question 3

Alternative Hypothesis 1	Model 3A	3	3		Accepted
Alternative Hypothesis 2	Model 3A			.598	Accepted
Alternative Hypothesis 3	Model 3B	15	7		Partially accepted
Alternative Hypothesis 4	Model 3B			.384	Accepted

Identified predictors are those that were significant
*Hosmer Lemeshow $\chi 2$ *test*

- R1H1: Male participants' exposure to family-of-origin violence during childhood is associated with a greater likelihood of self-reported lifetime IPV use.
- R1H2: The family-of-origin violence model will have a significant contribution to explained variance in self-reported lifetime IPV use.
- R2H1: Male participants' exposure to impaired parenting during childhood is associated with a greater likelihood of self-reported lifetime IPV use.
- R2H2: The impaired parenting model will have a significant contribution to explained variance in self-reported lifetime IPV use.
- R2H3: Male participants' exposure to impaired parenting during childhood is associated with a greater likelihood of self-reported lifetime IPV use when controlling for the family-of-origin violence block.
- R2H4: The impaired parenting model will have a significant contribution to explained variance in self-reported lifetime IPV use when controlling for the family-of-origin violence model.
- R3H1: Male participants' exposure to individual adversities during childhood is associated with a greater likelihood of self-reported lifetime IPV use.
- R3H2: The individual adversities model will have a significant contribution to explained variance in self-reported lifetime IPV use.
- R3H3: Male participants' exposure to individual adversities during childhood is associated with a greater likelihood of self-reported lifetime IPV use when controlling for the family-of-origin violence and impaired parenting blocks.

R3H4: The individual adversities model will have a significant contribution to explained variance in self-reported lifetime IPV use when controlling for the family-of-origin violence and impaired parenting model.

Table 21

Summary of Predictor and Model Statistics

Name	Description	Model 1 OR	Model 2A OR	Model 2B OR	Model 3A OR	Model 3B OR
Hosmer Lemeshow $\chi 2$		$p < .05$	$p < .05$	$p > .05$	$p > .05$	$p > .05$
Block 1: Family-of-origin Violence						
qCH28	How frequency did anyone in the household do a thing(s) on List A to you	1.27 *		1.22		1.19
qCH28A1	Did woman-parental figure do a thing(s) on List A to you	1.94 **		1.76 **		1.79 **
qCH28A2	Did man-parental figure do a thing(s) on List A to you	1.07		1.09		1.14
qCH29	How frequently did a parent(s) do thing(s) on List A to each other	1.66 ***		1.44 *		1.40 *
Block 2: Impaired Parenting						
qCH2C	Your age if your parents divorced (by age 16)		1.01	1.01		1.01
qCH3	How many of your parents' partners did you live with for 6 or more months		1.12	1.07		1.04
qCH30	How frequently did you experience physical neglect by your parent(s)		1.51 ***	1.44 **		1.37 *
qCH41	How frequency did woman-parental figure experience anxiety and/or depression		0.98	0.90		0.89
qCH63	Did growing-up parent(s) often get into physical fights		0.73	0.52		0.52
qCH66	Did parent(s) run around or desert the family		2.06 *	1.79		1.86 *
qCH71	How frequently did man-parental figure experience anxiety and/or depression		1.42 **	1.34 *		1.37 *
qCH86	How frequently did man-parental figure experience alcohol and/or drug use problems		1.05	1.00		1.00
Block 3: Individual Adversities						
qCN7_2	Your age when partner got pregnant or miscarriage/ stillbirth/abortion				1.53 **	1.49 *
qECON	Were you economically disadvantaged while growing up				2.00 ***	1.33

qRANCEST Participant is a minority				1.51 *	1.49 *

*$p < .05$, **$p < .01$, ***$p < .001$.

[a] Model Statistics

	Model 1	**Model 2A**	**Hierarchical Model 2B**	**Model 3A**	**Hierarchical Model 3B**
Nagelkerke R^2	8.5%	8.3%	12.2%	3.8%	13.8%
model's % change, Model 1		-3.5%	43.5%	-55.3%	62.4%
model's % change, Model 2A				-53.7%	
model's % change, Model 2B					13.1%
Hosmer Lemeshow's $\chi 2$ *p*-value	.045	.000	.273	.598	.384

CHAPTER V: DISCUSSION

The purpose of this secondary data analysis was to use variables identified in a national study, the 2003 National Comorbidity Survey-Replicated (NCS-R) conducted in the continental United States, to explore the association between men's lifetime physical IPV use with ACE. This chapter opens with a discussion of the major findings for the association of IPV use with three ACE categories: family-of-origin violence, impaired parenting, and individual adversities. This included a discussion of previous literature, limitations, further directions, and theoretical implications of the findings. Three research questions were posited to explore the possible influence of the three ACE categories on men's lifetime IPV use:

- To what extent is male participants' exposure to *family-of-origin violence* associated with the likelihood of self-reported lifetime IPV use?
- To what extent is male participants' exposure to *impaired parenting* associated with their likelihood of self-reported lifetime IPV use when controlling for *family-of-origin violence*?
- To what extent is male participants' exposure to *individual adversities* associated with their likelihood of self-reported lifetime IPV use when controlling for family-of-origin violence and impaired parenting?

Contributions to the Literature

National IPV victim prevalence rates tended to report lifetime exposure (e.g., Stets & Straus, 1989). Yet, most of the research reporting on IPV use tended to focus on men who endorsed IPV in their most recent relationship. In the present study, IPV use included incidents while dating and/or during their current marriage-like

relationship. This presented a unique opportunity to both explore ACE's association with lifetime IPV use and to compare these outcomes to other studies' results, which tended to emphasize past-12-month IPV use. Only eight studies were identified that looked the association of lifetime IPV use with ACEs, and they were not as detailed as the present study. For example, in those previous studies, parental physical abuse was examined as a single variable instead of two variables, one for maternal physical abuse and another for paternal physical abuse (Abrahams et al., 2006; Cascio et al., 2017; Cho, 2012; Clarke et al., 1999; Kalmuss, 1984; McMahon et al., 2015; White & Widom, 2003; Whitfield et al., 2003). In the present study, the predictors in each ACE category were tested in a standalone model then that category (i.e., block) was included in a hierarchical model. This enabled identifying which categories and combination of categories were a fit the data and if combining categories added value. This approach also enabled identifying the significant variables within each category.

Overall, when looking a men's lifetime IPV use in a large community study, the results did not support power and control IPV theory. Power and control IPV theory posits that IPV use is solely a learned behavior associated with the combination of a father's use of physical aggression in the home and exposure to a culture that enmeshed gendered behaviors with authoritarian values (Delsol & Margolin, 2004; Pence & Paymar, 1993). There were four major findings in the present study:

1) While there were significant predictors in the family-of-origin violence category, this category did not result in a significant model. It was when the family-of-origin violence category was combined with the impaired parenting category that a significant model was identified.

2) There were seven significant predictors in the final model. Only one predictor's association with men's IPV use was consistent with power and control IPV theory: witnessed parental IPV. In the final model, there were four significant predictors that had a higher standardized (i.e., beta statistic) value then the witnessed parental IPV predictor, for example, maternal physical abuse and physical neglect.
3) ACE events not affiliated with a parents' behaviors, often circumstances beyond a parent(s) control, were associated with IPV use. These ACEs were identified in the individual adversities category (i.e. block), for example, girlfriend was pregnant.
4) Polyvictimization and its implications appeared to be an applicable area to explore in men's IPV offender education programs.

In this discussion on the implications of the research results, details were also discussed in context of prior research and theory. Since the majority of the present study's results were inconsistent with power and control IPV theory, both significant and insignificant predictors were discussed. The discussion on the implications for clinical social work practice explored the identification of two types of IPV: power and control IPV for victims utilizing shelter services and situational couple IPV, the latter group appeared to include most of the offenders and aggressors who voluntarily engage in therapy at a mental health agency. The implications of ACE's association with situational couple IPV was explored in some depth in the discussion on social work practice. The discussion on the implications for social policy was explored at the state level. Specifically, the barriers to expanding IPV offender education program curriculum beyond risk factors associated with power and control IPV theory. This was done by using the state of Oregon as an example. This section included looking at how suggestions to reviewing the state's

administrative rules to accommodate current research results were addressed. In the discussion on implications for public health, the identification of IPV as a public health issue for women was reviewed. How IPV was addressed by emergency departments and by some primary care physicians was explored. These discussion sections were followed with a conclusion section that reviewed the study results and possible implications of the continued dismissal of research supporting the identification of situational couple IPV when working with individuals from the community, i.e. not in need of shelter services.

Implications of Study Results

This section explored result details in the context of prior research on men's IPV use for the specific predictors. Each ACE category (family-of-origin, impaired parenting, individual adversities) was explored independently. Because the majority of the results in the family-of-origin block did not support power and control IPV theory, it was important to include a discussion of the predictors that were not identified as significant in the final model. Since impaired parenting is an emerging area of research, the insignificant predictors from this category in the final model were discussed. The only significant standalone model was individual adversities, all three of the predictors were significant. So, the one predictor from this ACE category that was insignificant in the final model was discussed.

Significant Predictors in Family-of-origin Violence. A meta-analysis identified the two most commonly studied ACE variables in IPV use research: paternal physical abuse (no distinction between maternal and paternal), and witnessed parental IPV (Godbout et al., 2019). Meta-analyses reported that witnessed parental IPV had an association with men's IPV use (Godbout et al., 2019; Smith-Marek et al.'s 2015; Stith et

al., 2000). This is consistent with the present study's result: witnessed parental IPV was associated with men's lifetime IPV use. Witnessed parental IPV was endorsed by 33% of participants who used IPV compared to 12% of participants who did not use IPV. The meta-analysis of both Stith et al. (2000) and Godbout et al. (2019) reported that there was no significant difference between witnessed parental IPV and parental physical abuse's association with IPV use. Systematic reviews reported the rate that witnessed parental IPV co-occurred with parental physical abuse ranged from 30% to 60% (Appel & Holden, 1998; Edleson, 1999; Lamers-Winkelman et al., 2012). For the most part, when research has separated parental physical abuse by maternal and paternal, maternal physical abuse has been identified as associated with men's IPV use. Unlike other meta-analyses (Godbout et al., 2019; Stith et al., 2000), rather than looking at a single variable for parental physical abuse, Smith-Marek et al. (2015) looked at studies that clearly distinguished either parent's use of physical abuse. They identified that maternal physical abuse had an association with IPV use. Men adjudicated for IPV were more likely than men not using IPV to report having been beaten by their mother (Rosembaum & Leisring, 2003). Among hospital emergency department (ED) patients who positively endorsed lifetime DV physical abuse (from siblings, parents, partners, children), 23.3% identified their mother as an abuser (Riedl et al., 2019). One study qualified this association; when maternal physical corporal punishment's level of use 'very often' co-occurred with almost all of the participant's friends and family having used physical IPV, the liklihood that individual endorsed IPV use was 90% (Wareham et al., 2009). The present study's results were consistent with the majority of prior studies' reports; maternal physical abuse had an association with men's IPV use. Of interest, 32% of men

who used IPV in the present study reported maternal physical abuse compared to 15% of men who did not use IPV.

Insignificant Predictors in Family-of-origin Violence. Twenty-nine percent of participants in Riedl et al.'s (2019) study identified their (step-)father as an abuser, which was slightly higher (by 6%) than those who identified their mother as an abuser. Smith-Marek et al.'s (2015) meta-analysis reported an association between paternal physical abuse and men's IPV use, with no statistical difference from maternal physical abuse's association with IPV use. The present study's result for paternal physical abuse was not consistent with those research results. Paternal physical abuse was not associated with lifetime IPV use, even though the frequency of physical abuse by mother and father were similar for participants who reported IPV use. It is possible this discrepancy in results between the paternal physical abuse in studies represented in the meta-analyses (Godbout et al., 2019; Smith-Marek et al., 2015; Stith et al., 2000) and the present study was due to study design differences. For example, Wareham et al. (2009) explored each level of the predictor and identified high levels of paternal physical abuse was assocated with IPV use. Whitfield et al. (2003) reported that the frequency of mild parental physical abuse's association increased the odds of IPV use: 'once, twice' *OR* value = 1.5, 'sometimes' *OR* value = 2.3, and 'often' *OR* value = 2.2. However, for moderate to severe parental physical abuse, the odds of committing IPV decreased with frequency: 'once, twice' and 'sometimes' both had an *OR* value of 2.3 and 'often' had an *OR* value = 1.6. In the present study, the predictor parental physical abuse was binary, in effect the frequency categories were consolidated. Another study design difference, the present study utilized a variable not typically included in IPV use research: 'how frequently did *anyone* in the

household do a thing(s) on List A [mild-moderate physical abuse] to you.' This predictor had a bivariate correlation over 0.5 with both paternal physical abuse and maternal physical abuse. Perhaps more importantly, the inclusion both maternal and paternal physical abuse as predictors in a single model was unusual because maternal physical abuse is not aligned with power and control IPV theory. It was likely that one or both of these inclusions in the present study resulted in paternal physical abuse not reaching significance. The present study's research results suggested that the association between family-of-origin violence with IPV use is nuanced.

Significant Predictors in Impaired Parenting. There was less prior research that explored this category of ACE's association with IPV: 17% of studies in a meta-analysis included a variable(s) reflecting neglect, which was associated with IPV use (Godbout et al., 2019). However when looking at individual studies, the association of neglect with IPV use was inconsistent. Dardis, Edwards, Kelley, and Gidycz's (2013) model included maternal neglect with maternal emotional abuse, paternal emotional abuse, and sexual abuse to explore ACEs association with IPV use. Neglect was developed by consolidating three items: not given regular meals or baths, not given clean clothes, and not provided needed medical attention. The only significant variable was maternal neglect, and the researchers intentionally did not include paternal neglect in the model. Roberts et al. (2011) used five items to develop a neglect variable; it was not associated with IPV use. Widom et al. (2014) did not identify neglect as increasing the likelihood of IPV use, but a history of severe neglect was associated with the participant causing more injury when using IPV. Renner and Whitney (2012) explored the association of severe neglect, prior to the 6th grade, with IPV use by stratifying IPV. They

identified a stronger association with bidirectional IPV than unidirectional IPV. In the present study, the predictor neglect consolidated four items: unsupervised, parents spend on themselves instead of children, meals not prepared so hungry, not provided needed medical attention. Maternal and paternal physical neglect were combined in a single predictor. This predictor was significant. One of the challenges in studying childhood neglect was the lack of consistency in how to define it (Straus & Savage, 2005). This issue was observed in IPV research; it likely contributed to the inconsistent association with IPV observed for ACE variables that often have the same name but were constructed differently.

Exploring parental mental health symptoms' (i.e., anxiety, depression, substance use) association with IPV use was not included in a meta-analysis or a systematic review (Capaldi et al., 2012; Godbout et al., 2019; Smith-Marek et al., 2015; Stith et al., 2000). This suggested that parental mental health is an emerging research area for IPV. Roberts et al. (2011) developed one variable 'parental mental health' that included both parents and suicide attempts or completion. It was not associated with IPV use. However in the present study, there was an association with IPV use for paternal anxiety and/or depression. This is an example of how model specification contributed to different results.

In the final model, the predictor with the highest association (beta statistic) with lifetime IPV use was 'did parent(s) run around or desert the family.' This ACE was not identified in prior research. It is likely that this variable represented another type of marital difficulties between the participant's parents that was not captured in witnessed parental IPV use. Witnessed parental verbal IPV was not a risk factor for physical IPV

use, however the co-occurrence of witnessed verbal parental IPV with witnessed parental physical IPV was associated with physical IPV use (Liu et al., 2018). In addition, IPV use was an inconsistent indicator of relationship satisfaction (Williams & Frieze, 2005). It is possible that there are multiple types of parental maritial stressors that negatively impact children's development.

Insignificant Predictors in Impaired Parenting. Consistent with Roberts et al.'s (2011) results, in the present study maternal anxiety and/or depression was not associated with IPV use. Roberts et al. reported that parental substance use was not associated with IPV use. However, a large effect size was identified with parental illegal drug use (Stith, Smith et al., 2004). The present study's results were similar; neither maternal substance use nor paternal substance use were associated with IPV use. Of interest, paternal substance use had a bivariate correlation of 0.413 with witnessed IPV use. It is possible that parental substance use was associated with an increased risk of experiencing a specific and/or co-occurring ACE events, or it could have a moderator or mediating role. For example, a father's substance use was associated with having experienced co-occurring parental physical abuse and neglect when compared to fathers who engaged in one of those two forms of ACE (Hartley, 2002), and paternal drug use increased the risk for the co-occurrence of witnessed parental IPV with parental physical abuse (Tajima, 2004). All three of those items (physical child abuse, witnessed parental IPV, neglect) were associated with IPV use in the present study. This is an area that needs further research to develop an understanding of maternal and paternal mental health's association with IPV use.

Among men in IPV offender re-education programs, prior research found no association between IPV use and parental divorce, number of caregiver changes, death of family members, institutional or foster placement, and number of times father lived away from the youth (Corvo, 2006). This was consistent with the results of similar predictors included in the present study. However, a father's infrequent presence to watch performances in school or sports activities was associated with IPV use (Leisring & Rosenbaum, 2003), and male youth with greater family support had higher self-control (Meldrum et al, 2020). It is possible that parental involvement's association with IPV use could be more nuanced than the parent's mere presence in the household. For example, parental involvement was a protective factor when witnessed parental IPV was not present (Kim, Choi, Trahan, Bellamy, & Pierce, 2020).

Significant Predictors in Individual Adversities. Exposure to ACE outside of one's family appeared to have been rarely explored in IPV use research. There was one example of individual adversities identified. Corvo (2006) reported that the number of times a respondent was hospitalized as a youth had an association with IPV use. In the present study, the predictor denoting when the participant had a partner who became pregnant was associated with IPV use. While it did not appear that an ACE variable for perceived discrimination had been explored in IPV use research, the premise that it is an ACE was supported by research studies with youth. Priest et al.'s (2013) systematic review noted a consistent association for discrimination with behavioral problems and poor mental health. A meta-analysis identified that a greater perception of racial/ethnic discrimination was associated with more depressive and internalizing symptoms, greater psychological distress, poorer self-esteem, greater engagement in externalizing behaviors,

and substance use (Benner et al., 2018). An observation was made in a meta-analysis that "overall, results support the idea that the pervasiveness of perceived discrimination is fundamental to its harmful effects on psychological well-being" for both youth and adults (Schmitt, Branscombe, Postmes, & Garcia, 2014, p. 921). An attempt was made in the present study to explore the possibility of experiencing discrimination as a youth by including a variable for self-identified as a minority. This was associated with IPV use.

Insignificant Predictor in Individual Adversities. Roberts et al. (2011) reported no association between poverty and IPV use. While economic disadvantage had the second strongest (beta value) association with IPV use, it was in the standalone model. More importantly, it was insignificant in the final hierarchical model.

Theoretical Implications. Perhaps the most significant finding from the present study was that the model comprised solely of four family-of-origin violence predictors was insignificant, even though three of the predictors were significant. While inconsistent with power and control IPV theory, having multiple predictors significantly associated with IPV use from this category would explain the consistent use of the Duluth offender module in attempts to reduce recidivism rates for IPV use. It was not surprising that a model comprised solely of variables associated with impaired parenting was insignificant; this was consistent with power and control IPV theory. When the variables from both family-of-origin and impaired parenting categories were consolidated to create a model, it was significant. Four out of the twelve predictors were significant: two in family-of-origin violence and two in impaired parenting. The present study's results were consistent with Wareham et al.'s (2011) conclusion when they studied IPV use using Akers' social learning framework: "Somewhat surprising, however, was a lack of

significant findings linking primary imitation [family-of-origin] with acts of IPV… For the most part, the effects of social learning measures on partner violence [men's IPV] were not dependent upon intergenerational transmission measures" (p. 170). The same finding was reported by Cochran et al. (2017) and Liu et al., 2018. The presence of predictors from three distinct ACE categories in a significant model was likely a contributing reason to why IPV offender education programs based on the Duluth offender module have not resulted in materially significant reductions in recidivism rates (Babcock et al., 2004; Stover et al., 2009; Scott et al., 2011). The present study's results supported the premise that couples in the community, as opposed to shelter-victims, are not experiencing power and control IPV. Those results were consistent with prior studies' identification of situational couple IPV. This, in turn, suggested the possibility that multiple cognitive strategies could be used to address the ramifications of ACE, which would likely support reductions in men's IPV use.

Polyvictimization Implications. The present study entailed developing multiple models, consistent with polyvictimization theory which posits that as more forms of ACE are endorsed by a participant, the stronger ACE's association would be with IPV use (Finkelhor et al., 2007). For example, the number of lifetime trauma events was positively correlated with the frequency of both emotional and physical IPV use (Macquire et al., 2015). McMahon et al. (2015) reported a polyvictimization variable that represented the shared effects of five forms of ACE (sexual abuse, physical abuse, emotional abuse, physical neglect, emotional abuse) was associated with IPV use. Another study reported that the number of objective trauma events was associated with emotional IPV use, and the number of subjectively impactful trauma events was

associated with physical IPV use (LaMotte, Gower, Miles-McLean, Farzan-Kashani, & Murphy, 2019). When looking at the association of ACE with psychological distress, represented by various mental health symptoms, "not only was the unique contribution of polyvictimization significant but it also accounted for much of the unique variability formerly attributed to individual aggregate categories" (Richmond, Elliott, Pierce, Aspelmeier, & Alexander, 2009, p. 144). The same finding was identified when looking at ACE's association with trauma symptoms (Turner et al., 2010). The present study's identification of insignificant models until categories were combined to create a hierarchical model was consistent with Turner et al.'s (2010) observation on polyvictimization: "Findings also suggest that assessing multiple exposures of a single form of victimization, such as accounting for multiple incidents of sexual assault, is perhaps less important than the co-occurrence of different victimization types" (p. 328).

Implications for Clinical Social Work Practice

The dominant theory on IPV use is power and control. It identified paternal physical aggression as associated with IPV use. In this theory, maternal use of physical aggression was a consequence of being a victim of her partner's physical aggression (Saunders, 1986). Consequently, this theory identified paternal physical aggression in the family-of-origin as a primary source of a man's subsequent use of IPV within the homes he created as an adult. Kalmuss (1984) reported that witnessed parental IPV and parental aggression were associated with IPV use. Of importance, when neither of those forms of family-of-origin violence were present, the probability that men would use IPV was 1%. The consistency of the association between witnessed parental IPV and parental physical

abuse with men's IPV use (see Stith et al., 2000) was used to endorse the validity of power and control IPV theory.

The present study included witnessed parental IPV, which was associated with lifetime IPV use. Paternal physical abuse was separated into two variables: maternal physical abuse and paternal physical abuse. This clarification identified that while paternal physical abuse was not associated with IPV use, maternal physical abuse was associated with IPV use. In addition, the study identified other ACE variables associated with IPV use that were dismissed by power and control IPV theory. Perhaps more pertinent for clinical social work practice, the results of the present study demonstrated that paternal physical aggression was not the primary predictor of IPV use in community populations. This is further supported by prior research: the imitation component of social learning theory was not supported among men attending an IPV offender program (Wareham et al., 2011) nor among young adults (Cochran et al., 2017). In addition, the present study supported polyvictimization theory; exposure to multiple forms of ACE can result in more severe symptomology. The present study's outcomes emphasize the value of addressing the impact of experiencing ACE in clinical social work practice.

Academic researchers have attributed the research that did not support power and control IPV as identifying the second type of IPV, situational couple IPV (Johnson, 1995; 2006). Making the distinction between two types of IPV was a helpful approach to categorize IPV research, even though the volatile behaviors of some men whose partners use shelter services (e.g., Dark, 2009) have likely limited the number of studies that worked with the partners of women who have worked with shelter-advocates.

1. IPV use is a learned behavior that stemmed from paternal physical abuse (Walker, 1984, 2009). The association between witnessed parental IPV and parental physical abuse with a partner's IPV use was stronger for victims who received support from shelter-advocates than for victims in community studies (Stith et al., 2000). In a community study, emotional regulation difficulties mediated the relationship between family-of-origin violence with IPV use (Oliveros & Coleman, 2019).
2. When men endorsed co-occurring authoritarian values and behaviors enmeshed with distinct gender roles (i.e., patriarchal attitudes), it resulted in controlling attitudes that are abusive and target women (Pence & Paymar, 1993). Women who utilized shelter services typically reported controlling partners (Johnson & Leone, 2005; Tolman, 1996). This included limited access to financial resources (Gelles, 1976; Aguirre, 1985; Johnson, 1992), which often hindered a victim's ability to leave the relationship (Anderson & Saunders, 2003). Whereas in community studies, there was no association with controlling behaviors and IPV use (Karakurt, 2008; Neidig, Friedman, & Collins, 1986; Tolman, 1996). Only 20% of IPV victims reported co-occurring controlling behaviors (Hathaway et al., 2000; Johnson & Leone, 2005), and these behaviors' association with IPV use was smaller than the association of negative emotions with IPV use (Anderson & Lo, 2011). Patriarchal attitudes were one of many risk factors for physical IPV (Capaldi et al., 2012; Shorey et al., 2011; Stith, Smith et al., 2004).
3. The use of physical IPV increased in severity and frequency over time (Pagelow, 1981). Okun (1986) reported that women who utilized shelters had experienced an average of 65 assaults annually (as cited by Straus, 1990). Thirty-two percent of

3,924 shelter victims utilized a protective order (Durfee & Messing, 2012). Whereas in the present community study, only 13% of men reported IPV use in multiple relationships. A 10-year study reported that men's IPV prevalence rate decreased from 28% to 7% (Kim et al., 2008). Fifty-nine percent of women reported only a single incident of IPV in their relationship (Thompson, Saltzman, & Johnson, 2003), and 6% to 8% reported ongoing physical IPV that escalated from mild-moderate to severe IPV (Caetano et al., 2005; Johnson, 1995).

The present study's findings aligned with prior social science research that suggested within community populations, a man's IPV use was not primarily based on a desire to dominate his partner. Instead, the present study aligned with cognitive neuroscience research, which supported the premise that for many men IPV use was one of the lingering effects of ACE that extended into adulthood. IPV offenders reported to shelter advocates, who facilitated IPV offender re-education programs, that they often "experience themselves as out of control or controlled by emotional outbursts while battering" (Pence & Paymar, 1993, p. 3). These reports suggested that a continued emphasis on power and control IPV left a substantial number of IPV victims without appropriate support and services. The most frequently reported reasons for IPV use among young adult men were to show anger, retaliate when feeling emotionally hurt, and a reaction to their partner's physical aggression (Follingstad et al., 1991). IPV offenders included similar reasons: defensive (63%), relieving negative emotions (57%), and experienced suffering due to partner's behavior(s) (41%; Rode, Rode, & Januszek, 2015). Notably, there appeared to be overlapping motives rather than a single motive during an argument that included physical aggression.

Suppose men's use of IPV was not an attempt to subdue a partner, as suggested by the present study's identification of seven different ACE variable's association with IPV use. Why did IPV use coincide with arguments? Reactive aggression was associated with impulsive retaliatory behaviors in response to a perceived threat or provocation (Dodge & Coie, 1987). Adverse life experiences have resulted in adaptive modifications in the brain, the limbic system for example, which manages an individual's fight-flight-freeze response (De Bellis & Zisk, 2014; Ganzel et al., 2010). Experiencing ACE has resulted in difficulty with emotional regulation as a child (Shields & Cicchetti, 1998) and as an adult (Chen, Coccaro, Lee, & Jacobson, 2012), in addition to a heightened risk for reactive aggression (Murray-Close et al., 2010). Reactive aggression was associated with physical IPV use (Chan et al., 2010) and emotional aggression towards a partner (i.e., emotional IPV; Murray-Close et al., 2010). Emotional aggression within the relationship has preceded the physical IPV (Cascardi & Vivian, 1995; Murphy & O'Leary, 1989).

Cognitive neuroscience research suggested that ACE could be used as a proxy for poor emotional regulation (Ganzel et al., 2010; Pine, 2003; Porges, 2007). ACE has been identified with various processes that appear associated with reactive aggression: a decreased accuracy in recognizing sad faces (Pollak, Cicchetti, Hornung, & Reed, 2000); more cognitive errors when dealing with aggressive versus non-aggressive stimuli, an increased fabrication in recalled memories, a decreased ability to withhold attention from irrelevant aggressive information, a shift in attention towards aggressive stimuli rather than away (Rieder & Cicchetti, 1989); higher levels of impulsivity (Brodsky et al., 2001; Shin, McDonald, & Conley, 2018); and decreased levels of self-control (Bunch, Iratzoqui, & Watts, 2018; Meldrum et al., 2020). An inability to redirect attention when

provoked was associated with physical aggression (Subramani, Parrott, Latzman, & Washburn, 2019). Those deficiencies suggested an impairment in cognitive executive control, which has been associated with IPV use (Cunradi, Ames, & Duke, 2011; Marsh & Martinovich, 2006).

Some men in the present study reported ACEs but no history of IPV use: 15% reported maternal physical abuse and 39% reported mild-moderate physical abuse from a household member(s). The latter was correlated with both maternal and paternal physical abuse. This has led to an interesting question: What distinguishes the men in the present study who experienced ACE items within the various categories and reported IPV use from those men who did not engage in that behavior? Neuroscience research in mental health has begun to shed light on a similar situation in mental health that could apply to IPV use. Sometimes nature was responsible for increased symptomology. A gene consists of two alleles that can be either long or short; a long allele contains incremental information. A short allele was identified as a variant since long alleles are the norm (Caspi et al., 2003). A variant allele(s) in the serotonin transporter gene was associated with depression (Kaufman et al., 2006). A blending of deficiencies in nature and nurture was also associated with mental health symptomology. Research utilizing fMRI has made it possible to identify neuroanatomical structural deficiencies in the human nervous system. The co-occurrence of ACE with a decreased volume in the left hippocampus, a component of the limbic system, was associated with trauma symptom severity (Woon & Hedges, 2008). Decreased volume in the amygdalae, another component of the limbic system, was associated with impulsivity and PTSD symptoms (Depue et al., 2014). ACE co-occurring with a serotonin allele variant increased the likelihood of chronic depression

(Brown et al., 2013). A variant dopamine gene co-occurring with maternal insensitivity was associated with externalizing behaviors (Bakermans-Kranenburg, & Van Ijzendoorn, 2006). When a dopamine gene variant co-occurred with impaired parenting, it was associated with sensation seeking (i.e., impulsivity, activity level, high-intensity pleasure; Sheese, Voelker, Rothbart, & Posner, 2007). As an increased number of variant genes co-occurred with an increase in impaired parenting practices, participants' self-control decreased (Belsky & Beaver, 2011). Those studies' results provide insight into some possible protective biological mechanisms present for participants in the current study who experienced ACE and did not self-report IPV use.

The outcomes of research in social sciences, including the present study, are consistent with research in cognitive neuroscience made available due to technology developments during the past 20 years, for example, fMRI and computer processing power. Therapists and IPV offender education programs have access to a tool enabling them to distinguish between power and control IPV and situational couple IPV (e.g., Tolman, 1999). Recent research suggested that situational couple IPV is what many clients and IPV offender program attendees are experiencing. When situational couple IPV is identified, therapists and program facilitators can probe for ACE and explain the biological and structural vulnerabilities. The brain-emotion-behavior model can frame reactive and aggressive behaviors, which act as if they are emotional reflexes. Next, providers can provide clients with psychoeducation and tools to rewire the neuropathways in their brains to enable the discontinuance of both emotional and physical aggression. For example, completing two weeks of self-control training reduced men's aggressive tendencies towards their partners (Finkel, DeWall, Slotter, Oaten, &

Foshee, 2009), conflict resolution skills and responsibility were protective markers for IPV (Spencer, Toews, Anders & Emanuels, 2019), and couples who reported no IPV use had the healthiest characteristics (Lewis et al., 2017). Blending the brain-emotion-behavior model with behavioral skill-building strategies provides a framework consistent with the lived experiences and current behaviors of most men who engaged in situational couple IPV.

However, in spite of the abundance of research that supported using the situational couple IPV model with community populations, shelter-advocates continue to possess the ability to implement barriers to expand the curriculum of IPV offender education programs, as elucidated by Mederos (1999):

> By achieving such success, this [domestic violence] movement enshrined both the negative and positive aspects of what began as a very creative and flexible effort to hold men accountable into somewhat rigid beliefs and practices about intervention with men who batter. In fact, the aversion to approaches that do not focus on accountability has crystallized into a fear that to focus on other issues with batterers means [it will result in] a wholesale abandonment of concern for safety for battered women and for holding offenders responsible for their conduct. (p. 135).

The policy implications that result from this mindset were explored by looking at social policy to address IPV at the state level.

Implications for Social Policy

It appeared that the initial observation on the presence of two types of IPV use was introduced in 1979 at the Conference on Intervention Programs for Men Who Batter

(Mott-McDonald Associates, 1981). As early as 1984, Neidig, Friedman, and Collins suggested that one type of IPV followed an escalation path and the other type utilized coercive control tactics (referred to in Neidig, et al., 1986). The present study's results were consistent with recent research in both social sciences and cognitive neuroscience which supported the value of having IPV offender programs address both types of IPV, situational couple IPV and power and control IPV. The primary avenue to address physical IPV use is following the arrest of men who have physically assaulted their partner (James & Gilliland, 2012). However, the IPV offender program's curriculum based on the Duluth offender module added minimal value to the adjudication process to reduce physical IPV (Feder & Wilson, 2005; Maxwell & Garner, 2012). Even so, expanding the IPV offender curriculum to support situational couple IPV continues to be opposed by shelter-advocates and their associates. For example, Dark (2009) described the IPV offender education provider's meeting in Boise Idaho, during which Cornerstone Counseling Center discussed their partnership with a local university researcher. They reviewed the demonstration study proposal for intact couples: IPV offenders and their partners (i.e., victims). The local shelter-advocates adamantly opposed this study. The executive director of the National Coalitions on Domestic Violence also opposed the proposal stating: "[It] is unique and dangerous and frightening. I don't know anyone who has done this work for very long who thinks couple counseling is a good idea." She hoped that the proposal was "not successful for the [sake of all the] men and women and children in Utah" (p.3). No further mention of this demonstration study was located – it appears that it was successfully blocked. Lenore Walker, one of the foremost experts on

DV during the timeframe of the Duluth offender module development, made the following observation:

> There is still an ongoing debate in the field [among shelter-advocates and some academic researchers] about whether the batterer is really unable to control his anger, as was perceived by the woman [victim], or if he chose to abuse her and therefore, is very much in control of where and when he uses violence [as perceived by most shelter-advocates]. (Walker, 2009, p. 3)

Current research, such as the present study, supported expanding the curriculum of programs based on the Duluth offender module. This would mean shifting from a primary emphasis of re-educating men on women's equality (i.e., addressing patriarchal attitudes) to providing an appropriate emphasis on information which has the potential to address offenders' personal circumstances. The IPV offender program curriculum would include material addressing the multiple risk factors associated with IPV, as identified by research (Capaldi et al., 2012; Shorey et al., 2011; Stith, Smith et al., 2004). The Washington State legislature commissioned an independent review in 2012 to assess the state's IPV offender curriculum, based on the Duluth offender module (Miller, Drake, & Nafziger, 2013). The subsequent report concluded that this curriculum had none to limited impact on future IPV use, i.e., recidivism (Miller et al., 2013). That state's administrative rules on the program's curriculum were subsequently modified. Washington state's IPV offender education programs can include: trauma-informed behavioral strategies, cognitive behavioral therapy, the use of motivational interviewing techniques (as opposed to adversarial confrontation), and identifying levels of care, one

through four, which can support the development of individualized learning objectives (Roberts, n.d.). Cannon et al. (2016) explained that while 87% of IPV offender re-education program directors surveyed identified coercive control strategies an important factor to address, they supported the addition of other material: 73%, violence and abuse from family-of-origin; 66%, managing emotions; and 61%, communication and conflict resolution strategies. This was clarified further, with support for: 48%, anger management; 47%, patriarchal values; and 41%, past trauma exposure. The Veterans Administration now utilizes non-gendered language when referring to IPV offenders and victims, and they engage both partners when addressing IPV use (U.S. Department of Veterans Affairs, 2019). In effect, these program managers and organizations supported expanding the curriculum's scope to address situational couple IPV.

To understand the challenges that can occur when attempting to expand an IPV offender education curriculum, the state of Oregon was used as an example. These challenges included direct barriers to reviewing research supporting changes to the administrative rules and indirect barriers through the reticence to support non-shelter-advocates to conduct IPV research. The Oregon Legislature passed Senate Bill 81 in 2001. This bill tasked the Oregon Department of Justice with creating Oregon administrative rules (OARs) for programs working with IPV offenders (Batter Intervention Program Advisory Committee, n.d.). Senate Bill 81 mandated that a statewide panel of DV experts develop the administrative rules. The Batterer Intervention Program Advisory Committee (BIP advisory committee) was established in 2002 by the state's Attorney General to support that office in developing the administration rules (Batter Intervention Program Advisory Committee, n.d.). The first multi-agency effort to

support IPV victims was the Duluth model implemented in 1980 (Asmus et al., 1991-1992). The National Coalition Against Domestic Violence (2006) described how the use of a DV expert panel was endorsed by the Violence Against of Women Act, passed by the U.S. Congress in 1994. This legislation included state-level funding initiatives that supported the creation of cross-disciplinary IPV response teams. A state's DV coalition, consisting of shelter-advocates across the state, was identified as the source of instructors to support the VAWA criminal justice system funding initiatives. Shelter-advocates' work is aligned with two policy facets: "Would this change in policy precipitate a cultural shift that ultimately would improve the quality of women's lives, and would the policy actually transform how society views male violence against women?" (Miccio, 2005, p. 241). These social policy objectives formed the criteria guiding the selection of re-educational material in the Duluth offender module. This module limited the information provided to IPV offenders and their victims. The identification of situational couple IPV was still an emerging area of research when Oregon Senate Bill 81 was passed. At that time, it made sense to base the OARs on power and control IPV theory.

In Oregon, at the May 5, 2014 (BIPAC) BIP advisory committee meeting, a committee member recommended reviewing the research paper commissioned by the Washington State legislature (i.e., Miller et al., 2013) to consider updating Oregon's BIP OARs. However, another committee member dismissed the findings of that research paper. This member stated "while one size does not fit all, one size fits most" (p. 2). This member then strove to support this position: The committee members were informed of that study's dismissal by Dr. Gondolof, an academic researcher who advocates limiting IPV offender programs to the Duluth offender module's curriculum. Next, a recommend-

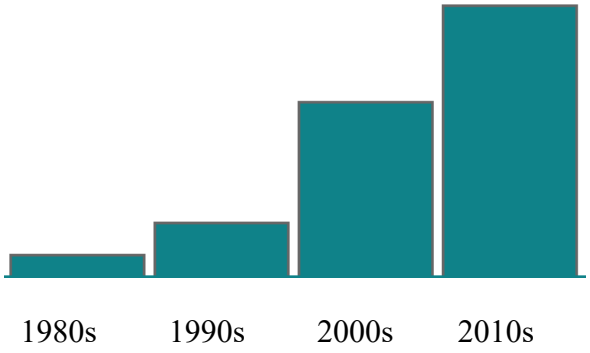
dation was made to daft a response in opposition to the report's conclusion and posited that Washington State's revised BIPs "are not effective" (BIPAC, 2014, November 13, p. 2). A question and response sequence explored this topic in a white paper developed by the BIP advisory committee to educate judges throughout Oregon on IPV (BIPAC, n.d.):

> [Question] What is the empirical support for the standards [i.e., BIP OARs]? [Response] Due to the relative newness of batterer intervention, researchers are still in the midst of determining what is most helpful in stopping abusers from abusing. These standards are based on looking at what programs around the country are using and the extensive experience and knowledge of a variety of statewide experts on domestic violence. The Attorney General's Batterer Intervention Task Force continues to monitor research on the issue and revisions to the standards reflect those findings. (p. 3)

It is unclear how a curriculum developed 40 years ago remained identified by the BIP advisory committee as 'relatively new.' Even so, to understand how much research was available to the developers of the Duluth offender module forty years ago, a search was conducted on August 30, 2020 based on the criteria identified by Eagly et al. (2012). There were 16,767 peer-reviewed articles identified. Figure 2 shows the progression of research on IPV by decade. The first identified peer-reviewed study was published in 1964: *The wifebeater's wife: A study of family interaction* authored by Snell, Rosenwald, and Robey. There were eight articles listed as peer reviewed by 1980 and 668 articles during the following ten years. As a point of contrast, there were 340 articles published in the first eight months of the year 2020. As noted in Figure 2, the research on IPV has

blossomed extensively since 1980, the Duluth offender module's development date (Domestic Abuse Intervention Programs, n.d.a).

Figure 1: Journal Articles on IPV



N=16,767 executed on August 30, 2020, peer reviewed

Article Summary:

0 articles up to 1960; 5 non-peer reviewed (not in total)
1 articles in the 1960s
6 articles in the 1970s; 9 non-peer reviewed (not in total).
668 ticles in the 1980s
1,801 articles in the 1990s
5,873 articles in the 2000s
9,085 articles in the 2010s
340 articles published the first 8 months of 2020.

Notes:

- The search criteria was based on Eagly et al.'s (2012) criteria, which included the index terms: battered females, partner abuse, domestic violence, intimate partner violence. Additional terms were included: batterer (which early research used to identify men), which added 64 articles as well as the emerging gender-neutral terms "partner aggression" and "partner violence," which added 260 articles.
- Search sequence: "battered females" OR "partner abuse" OR "domestic violence" OR "intimate partner violence" OR "physical partner aggression" OR "batterer"
- There was no consistency in terminology in IPV use, so this search did not capture all of the IPV studies executed over this timeframe. However, this search did provide an opportunity to see the growth in literature.

Those search results suggested that less than 25 articles were available to the Duluth (men's) offender module developers. It appeared that the only change to Oregon 's BIP administrative rules aligned with post-1980 research was the decrease in the length of the program to 36 weeks from 48 weeks (BIPAC, 2010, November 4). This change was executed to appease judges' concerns about the limited scope of the BIP's curriculum and the time utilized to cover it, to the consternation of some BIP advisory committee

members, who resisted this change because they preferred to see the program length extended (BIPAC, 2010 January 20; BIPAC, 2010, September 3). A BIP advisory committee member observed during the September 25, 2014 (BIPAC) meeting that "at times we get stuck around 'Does Batterer Intervention work?' Regardless of how each of us feels about that question, the BIP advisory committee is charged with making it [batterer intervention] work the best it can. It would be completely valid in the future to have a subcommittee to research/study the question" (p. 3). The present study's results aligned with prior research to support this member's suggestion. However, there was no further action reported on this topic.

Oregon Senate Bill 267 passed by the Oregon legislature in 2003 “requires that state agencies use ‘evidence-based programs’ for drug and alcohol treatment, some mental health treatment, adult recidivism prevention and juvenile crime prevention” (Crime Victims United, n.d, p.1). The BIP OARs permit research demonstration projects, and the BIP advisory committee was responsible for developing guidelines to support this activity (BIPAC, 2010, April 9). The present study’s findings highlight the importance of conducting research that is not bound by power and control IPV theory. However in Oregon, the barriers to do so when the researchers are not on the BIP advisory committee are insurmountable, as demonstrated by the Yamhill Project.

The Yamhill Project refers to an IPV demonstration program proposal. This study was aligned with situational couple IPV research. The principal investigator, Dr. Babcock, had years of experience conducting IPV research. The program's curriculum was based on research conducted by Dr. Gottman (P. Warford, personal communication, July 21, 2020) . All of the necessary stakeholders (e.g., victim services, criminal justice

system) in Yamhill County supported the proposal. Babcock, Armenti and Warford (2017) explained that the demonstration study was a replica of a prior study (i.e. pilot study) conducted with couples who reported physical IPV. These couples were recruited from the community. The proposed participants were male IPV offenders and his partner (the victim), when his partner planned to remain as an intact couple and both individuals wanted to learn strategies to support and enhance their relationship. Of note, this study's protocols for identifying appropriate participants appeared consistent with previous IPV research studies with intact couples that had also successfully addressed victim safety (e.g., DeBoer et al., 2012; McCollum & Stith, 2008; Stith, Rosen, McCollum & Thomsen, 2004).

Dr. Warford contacted Dr. Mankowski for the research demonstration project guidelines in the Fall of 2013, in order to submit a proposal (BIPAC, 2014, May 5). In June, the BIP advisory committee requested a presentation on active demonstration projects in Oregon, run by BIP advisory committee members; the BIP advisory committee had not subjected them to the review process, perhaps because no guidelines were developed (Babcock et al., 2017; BIPAC, 2014, June 26). One program, running for 18 months, was identified as an innovation rather than demonstration project. The other program, running for five years, was identified as consistent with the OARs (BIPAC, 2014, August 13). The meeting minutes did not note the presentations inclusion of outcome data, research supporting the variances to the OARs, nor the specific criteria used to categorize or approve the projects.

On January 16, 2015 (BIPAC) a presentation was made to the BIP advisory committee on the Yamhill County Demonstration Project. The county’s District

Attorney's office committed to providing oversight throughout the study. "This study has the potential of changing what is standard practice in battering intervention agencies around the country" (Babcock et al., 2017, p. 117). On February 5, 2015 (BIPAC), a BIP advisory committee member posited this influence as a reason to intensify their scrutiny of the proposal: "The larger context, political issues and characterization of the Duluth curriculum model should be considered since this research will be influential on a larger scale than Yamhill County" (p. 2). In contrast, there were BIP advisory committee members who appeared to support the project. They argued that there were "long standing concerns on the part of some members that there isn't enough evidence that BIP's work at all, thus why are we constrained to the standards in the OAR? Shouldn't we encourage people to try new programs" (p. 4)?

Babcock, Armenti and Warford (2017), the Yamhill Project's researchers, reported that they never did receive clear demonstration proposal guidelines. They were informed verbally of the BIP advisory's committee's decision to deny the proposal. The denial was attributed to discomfort with the researchers having any form of contact with women, the victims, (e.g., phone, email, postal mail) out of "an abundance of caution" (p. 119). There were concerns that the victim's partner (i.e., IPV offender) would retaliate against her for providing the researchers with information on their relationship. However, the BIP advisory committee does allow this contact in Duluth informed programs. For example, the BIP advisory committee supported the 'innovation' project in which it appeared that intact couples were allowed to attend (BIPAC, 2014, August 13). During a BIP facilitator training in Oregon, conducted a BIP advisory committee member, it was recommended that facilitators gather information on an IPV offender's coercive control

behaviors from his victim and request her permission to share it with the IPV offender's co-participants. This information would enable group members to "confront" the participant with his behaviors (Domestic violence facilitator training, 2020).

The BIP advisory committee has taken on a paternalistic-authoritarian role with IPV victims. The committee posited that victims who do not endorse the power and control model declined to do so because these women were concerned about "safety for themselves and/or their children" (BIPAC, n.d., p. 2). The committee did not reference any research studies to support this statement. Importantly, Enke, (1999/2007) and Miccio (2005) explain that this approach was inconsistent with the values of the shelter-advocates who developed the concept of IPV victim support services in the 1970s. Those shelter- advocates believed that a victim should be supported to self-identify next steps. Accordingly, shelter-advocates during this period would not criticize a woman's decision to return to the relationship. For, providing victims with respect and re-establishing their sense of control was crucial. No subsequent demonstration project proposals were submitted by anyone who was not a BIP advisory committee member.

Insight into the perspective of members of the BIP advisory committee who stifle any changes not aligned with power and control IPV theory was provided by the Duluth Model's cofounder, Ellen Pence. After she had completed her Ph.D. in Sociology (Domestic Abuse Intervention Programs, n.d.b), she shared her reflections on the ideological premise that she and her staff, shelter-advocates, held while working with IPV offenders,

> We all engaged in ideological practices and claimed them to be neutral observations…By determining that the need or desire for power was the

> motivating force behind battering, we created a conceptual framework that, in fact did not fit the lived experience of many of the men and women we were working with. . . Speaking for myself, I found that many of the men I interviewed did not seem to articulate a desire for power over their partner. Although I relentlessly took every opportunity to point out to men in the groups that they were so motivated and merely in denial, the fact that few men ever articulate such a desire went unnoticed by me and many of my coworkers. Eventually, we realized that we were finding what we had already predetermined to find. (Pence, 1999, p. 29)

Of interest, Dr. Pence went on to create an organization where she was working on implementing a program that she defined as "the Duluth model on steroids" to address mental health issues and distinguish between different types of IPV prior to her death (Stodgehill, 2010).

Based on the meeting minutes, white papers, and current BIP OARs themselves, the BIP advisory committee has consistently dismissed exploring changes to the IPV offender program curriculum in order to maintain consistency with the Duluth offender module, developed in 1980. This focus has decreased the possibility of reductions in physical aggression from attending an IPV offender education program. It also has ethical implications. For, thousands of offenders have paid out of pocket for educational classes that the Oregon state legislators endorsed. These classes do not represent current research and best thinking on IPV nor addressed offenders' behaviors and self-reported circumstances. In fact, facilitators dismiss offender's input when it has not aligned with the Duluth offender module (Pence, 1999). In addition, the current IPV offender

education program in Oregon does not meet the standards of Senate Bill 267 – while there are very few evidence-based programs available, evidence-informed programs can be and were developed.

It seems that the time has arrived in the state of Oregon to fold IPV offender program facilitator training, facilitator certification, and ideally, the program monitoring activities (e.g., complaints by program participants) under the umbrella of the Mental Health and Addiction Certification Board of Oregon (MHACBO). MHACBO (n.d.) has the mandate to manage the certification of Oregon's behavioral health workforce, currently identified as: substance abuse treatment providers, gambling addiction providers, recovery mentors, qualified mental health providers (Master's degree level therapists), and qualified mental health administrators (Bachelor's degree). MACBO has expertise gleaned from working with substance abuse counselors, which includes ensuring that program facilitators are knowledgeable on current research when certified for a specialized field including effective group facilitation practices (e.g., motivational interviewing). MACBO has established standards for certifying substance abuse program facilitators. It has demonstrated the ability to ensure that many of the statutes that the BIP advisory committee does not have the bandwidth to administer are executed. In addition, MACBO could provide a venue for program oversight. For example, IPV offender program attendees are not informed of any complaint process to address how they were treated or challenge whether they have met the requirements as stated in the OAR's, rather than the provider's interpretation of that criteria (Rick Baska, personal communication, February 13, 2018). The costs associated with this change this could be offset by increasing the marriage license fees so that they are on par with marriage

dissolution filing fees, for example, an increase from $50 (Tillamook County, n.d.) to $301 (Oregon Judicial Department, n.d.) Tillamook County.

In Oregon, transitioning the administration of the BIP OAR's to MACBO would have no impact on the victim support services and/or funding provided by the Violence Against Women Act, the state-level coalition, and local shelters, such as: victim safety planning, face-to-face advocacy, counseling, support during criminal court cases, and advising on orders of protection (Davis et al., 1994; Meade, 2012). The transition of responsibility to MACBO would reflect a practical step to reduce IPV use to enable an organization with no social policy or professional agenda to provide input into expanding the curriculum to address situational couple IPV. This transition would not impact addressing the immediate needs of victims of power and control IPV. In fact, becoming more proficient in separating the two types of IPV also has positive implications for public health; this was explored in the next section.

Implications for Public Health

Research supporting situational couple IPV, such as the present study, has implications for public health. In part, because funding to adequately support IPV victims in emergency departments (ED) and within medical practices of primary care physicians is limited. In addition, the strategies utilized in this environment typically focus on the needs of victims of power and control IPV. It appeared that this limitation has contributed to the difficulties in the application and consistency of protocols to support victims of both types of IPV, power and control IPV and situational couple IPV.

Durazo (2006) identified 1992 as the year when IPV emerged as a public health issue; the medical community became a component of the federal government's response

to address IPV. The Department of Health and Human Services began funding initiatives that increased the medical communities' response to DV. The American Medical Association issued guidelines to support screening for DV (e.g., IPV). The Surgeon General, U.S. Public Health Services, identified IPV as the leading cause of injuries to women ages 15 to 44. For, IPV was occurring more frequently than the combination of automobile accidents, muggings, and cancer deaths (see Micco, 2005). In at least 20 New York City ED's over eight years (2000 – 2007), 28% of women assault victims were documented as victims of IPV (Yau et al., 2013). A study cross-referenced 993 police charging reports for IPV by men from the year 2000 with four years of hospital records. Seventy-eight percent of those assault victims made a total of 5,738 visits (average 7.4 visits per victim) to a hospital during that period (Rhodes et al., 2011).

Because women IPV victims appeared to be high utilizers of hospital resources, linking victims to support services has been an ongoing area of interest. However, the implementation of universal screening in the ED for IPV remains a challenging prospect. A systematic review identified the components for successful IPV screening implementation: institutional support, effective protocols, thorough initial and ongoing training, and immediate access/referrals to onsite and/or offsite support services (O'Campo, Kirst, Tsamis, Chambers, & Ahmad, 2011). For example, following a positive IPV screen, personnel in the ED recommend that the patient/victim speak with the hospital's social worker or behavioral health provider and offered her a business card for the hospital's local DV agency partner (i.e., shelter-advocate; Clark, Wetzel, Renner, & Logeais, 2019).

The Affordable Health Care Act endorsed screening for IPV as a preventative care practice and pays for the screening (Women's preventative services initiative report, 2016). However, the assessments identified to support this legislation do not ask about controlling behaviors (Lin, 2019), the feature of power & control IPV to distinguish it from situational couple IPV. This suggested an underlying assumption that all women who utilize medical services and screen positive for IPV were victims of power and control IPV. Yet, there did not appear to be research to support this presumption. In addition, the Affordable Health Care Act's clinical guidelines states: "No studies definitively identified which intervention components resulted in positive outcomes" to address IPV use (Lin, 2019, p. 648D). Medical providers were often uncomfortable addressing IPV with patients (Husso et al., 2012). One barrier was the inability to provide a referral that supported the cessation of physical abuse (Alvarez, Fedock, Grace & Campbell, 2017). So, it is not surprising that IPV victims found it uncomfortable to discuss this topic with a provider (Robinson & Spilsbury, 2008), especially if she wanted to strengthen the relationship rather than help leaving it. Another component of a victim's discomfort was the uncertainty about the consequences of disclosing IPV to their provider, a mandated reporter (Rose et al., 2011). For, if children were present during an incident, the conservative approach is to make a report to DHS (T. Long, personal communication, February 18, 2019). It could be that this environment contributed to medical organizations' hesitancy to invest in the infrastructure to refer patients to service providers outside of their organization (O'Campo et al., 2011).

Studies that explored best practices and barriers to addressing IPV in an ED did not appear to ask victims what types of services they were interested in receiving nor

think that doing so would be helpful (Robinson & Spilsbury, 2008). For example, whether a victim was interested in counseling to strengthen her relationship. After reviewing support strategies in EDs for IPV victims, Hinsliff-Smith and McGarry (2017) stated: "With such a paucity of studies that include DVA [domestic violence abuse] survivors, it is difficult to draw conclusions as to what effective support mechanisms and interventions should be implemented but importantly, sustained within the ED setting" (p. 4024). A letter to the editor noted that when looking at primary care physician-based interventions "there are reasons to expand the domain of health care concern to the perpetrator" (Eth, 2019, p. 1) and recommended following the example set by the Veteran's Administration (U.S. Department of Veterans Affairs, 2019).

The present study added to the research on IPV by identifying ACE models and specific ACE predictors as associated with men's lifetime IPV use in a community setting. This suggested a promising avenue that could directly support IPV offenders and victims while indirectly supporting medical professionals. Including ACE when addressing IPV is the emerging interdisciplinary IPV approach. IPV use can be addressed by blending psychoeducation on cognitive neuroscience research with mental health emotional regulation strategies. This approach would provide physicians with an avenue for IPV victim services that is more closely aligned with the medical model than is the current focus, which limits medical providers to resources that address power and control IPV. The victims, men and women, identified as experiencing situational couple IPV through the use of a screener (see Tolman, 1999), could then be screened for ACEs and provided with information on the various ways that ACE can influence emotional regulation and physical health. This approach could make addressing IPV with patients

feel more accessible to medical professionals. For, ACE exposure has been associated with various physical health issues (De Bellis & Zisk, 2014; Danese et al., 2009; Felitti et al., 1998; Ports et al., 2019) and was common among adults utilizing ED services (Binnie, Le Brocque, Jessup & Johnston, 2020). Exploring exposure to ACE by identifying situational couple IPV would support the recommendation to elevate how IPV is identified in public health – from being categorized as a health issue to a *key determinant of ill-health* (Gear, Koziol-Mclain, & Eppel, 2019). Providing medical professionals with an avenue that supports their overall objective of addressing a patient's physical health is a robust reason to support addressing IPV than the current model, which appeared to be because the hospital's or clinic's policy recommended it.

Conclusion

The present study was designed to explore the influence of various forms of ACE on men's lifetime IPV use. The first research question in the present study was aligned with power and control IPV theory's premise that paternal physical aggression was associated with IPV use. The present study refined parental physical abuse by looking at both maternal physical abuse and paternal physical abuse. Then, the following two research questions explored whether other forms of ACEs were also associated with IPV use. An emerging area of research was included by looking at various aspects of impaired parenting, such as co-parenting in separate households, physical neglect, mental health, and substance abuse. A new area of research, individual adversities, was included by looking at exposure to ACEs outside of a parent's influence, such as a girlfriend became pregnant and perceived discrimination through a proxy variable, self-identified as a minority. The men in the present study were part of a national study on mental health in

which IPV use and various childhood experiences were among the hundreds of questions included in the survey.

The only outcome in the present study consistent with power and control IPV theory was the association of witnessed parental IPV with IPV use. When predictors associated with family-of-origin violence were used as a standalone model, that model was not associated with IPV use. This was a surprising outcome. In the final model, men's lifetime IPV use was associated with: maternal physical abuse and not paternal physical abuse, another unexpected outcome. For, the premise of the intergenerational transmission of physical abuse in power and control IPV theory hinges on an association between a father's use of physical abuse and/or IPV use against the participant's mother. Another revealing outcome occurred when the family-of-origin violence predictors were combined with the impaired parenting predictors to create a model. It was this combination that created a significant model. Three predictors in the final model from impaired parenting were associated with IPV use: physical neglect, paternal anxiety/depression, and a parent(s) running around or deserting the family. These results conflicted with power and control IPV theory's premise: ACEs associated with impaired parenting are not relevant when addressing men's IPV behaviors. The final category of ACEs included in the study consisted of predictors associated with individual adversities. When this category was used as a standalone model, that model was associated with IPV use. This was the only standalone model associated with IPV use. In the final model, two predictors in individual adversities were associated with IPV use: girlfriend was pregnant and self-identified as a racial minority. Again, these results were inconsistent with power and control IPV theory. The present study's results suggested that exposure to multiple

forms of ACE are associated with IPV use, which was consistent with polyvictimization theory. In total, these results support addressing multiple facets of childhood, rather than simply the implications associated with paternal physical abuse, when looking at how to influence behavioral changes by couples who report experiencing IPV. This would explain the report that "treatment approaches [such as IPV offender curriculum] augmented with a trauma component yielded improved results" (Karakurt, Koç, Çetinsaya, Ayluçtarhan, & Bolen, 2019, p. 229). The present study's results clarified that expanding the curriculum for IPV offender programs to address situational couple IPV is not only beneficial but necessary if the courts, law enforcement, and child protective services want to see results from IPV offender programs and reduce children's exposure to witnessed parental IPV.

While some aspects of the present study's results were surprising, they were also aligned with prior research on IPV use in social sciences and buttressed by inferential support from research in cognitive neuroscience research. This body of research enabled the identification of two types of IPV, situational couple IPV and power and control IPV. Addressing the impact of exposure to ACE, which has been associated with arguments that escalate due to modifications or the biological vulnerabilities in the limbic system and gene variants, is an example of the material to include in IPV offender education programs. Inclusion of material like this to enhance the program's curriculum supports victims experiencing situational couple IPV. In Oregon, the Yamhill County District Attorney supported curriculum changes because the likelihood of desistance of IPV using the Duluth offender module "is not good in the long term…he sees a high percentage of victims who are determined to reconcile with their partners. Because of this he finds it

constructive to provide both parties [offenders and victims] with tools to inform them of relationship health and to improve their relationship" (BIPAC, 2015, May 7, p. 1). Currently, many states, including Oregon, have not embraced developing a robust, research-informed IPV offender program by including best known practices and best thinking.

Very little research on IPV use was available to the Duluth offender module developers in 1980. That program was based primarily on the experiences of shelter-advocates who frequently "listened to heart-wrenching stories of violence, terror, and survival" described by the victims they served (Domestic Abuse Intervention Programs, 1984b, p.1). Naturally, when most of the victims that shelter-advocates work with are experiencing power and control IPV, often with tragic long-term ramifications, it is difficult for shelter-advocates to embrace the research on situational couple IPV, much less support changes to the IPV offender program's curriculum. Consequently, reductions in IPV use from attending a 36-week IPV offender program in Oregon is currently unlikely. Perhaps more importantly, research contradicting the position of shelter-advocates continues to accumulate across disciplines. If shelter-advocates and their associates continue to maintain this stance, at some point they will lose their credibility with the criminal justice system and state and federal legislators. When this happens, shelter-advocates and state level coalitions will risk losing their leadership role in shaping the discourse on IPV and potentially risk losing current victim service's funding streams.

Limitations

There are limitations to consider when reviewing the results of the present study.

Regression Analysis Strategy. Due to the ACE items included NCS-R, the ACE variables in the present study were primarily binary and ordinal rather than continuous. In addition, the majority of variables were non-normally distributed and zero-inflated. Multiple IPV items were utilized to develop the present study's outcome variable, so the outcome variable had to be binary. The outcome variable's structure limited the analysis strategy to binary logistic regression.

Variable Availability. This was a secondary data analysis, so the variables utilized in the present study were limited to those available in the parent study. There was an inability to examine ACE items of interest associated with power and control IPV theory, for example, sexual assault and community violence. This limitation informed the development of the research questions and hypotheses. In addition, 99 participants had missing responses for the dating IPV use question. Some of those participants might have endorsed IPV use while dating but not during their current relationship.

Lack of Casual Relationship. The dataset used in the present study was a sub-set of a pre-existing, cross-sectional survey. There are predictive limitations associated with cross-sectional studies: "The primary limitation of the cross-sectional study design is that because the exposure and outcome are simultaneously assessed, there is generally no evidence of a temporal relationship between exposure and outcome" (Carlson & Morrison, 2009, p. 78). It would require a longitudinal study to establish a valid cause and effect relationship between the significant ACE predictors identified by the present study with IPV use.

IPV Sample Applicability. The present study's results can be considered for community populations. IPV use results can vary when men are differentiated as partners

of women using shelter services versus women victims not using those services (Stith et al., 2000). This means that the present study's results could have implications for therapists in private practice, who work with couples and individuals, and for IPV offender education programs. It is unlikely that the present study provides insight on strategies to use with the partners of women who utilize services from IPV victim support agencies, i.e., experiencing power and control IPV. In addition, research results have the potential to differ because community participants can be recruited from various populations: through local newspaper ads, attending substance abuse treatment programs, attending IPV offender education programs, and national community studies. It was also possible that the timeframe used for the IPV outcome variable or age of the participant influenced the results: dating, past-12 months, anytime in the current relationship, and over the participant's lifetime. Evidence suggested that when studying IPV use, the results are more nuanced when participants are separated into sub-groupings. For example, IPV use's association with predictors varied when participants who reported a one-time IPV event are differentiated from those who reported two or more events (Stults, Javdani, Greenbaum, Kapadia, & Halkitis, 2016), and when unidirectional IPV was differentiated from bidirectional IPV (Cunradi et al., 2011; Renner & Whitney, 2012). Future studies that are able to define what questions participants are asked should consider refining them to support the identification of different frequencies, forms, types, and number of relationships for physical IPV.

Predictor Variable Construction. Variables for ACE were constructed differently between studies. For example, gendered biases are evident in IPV research, as demonstrated by looking at the father's use of physical aggression and not the mother's

(Godbout et al., 2019; Stith et al., 2000) or looking at maternal parenting behaviors and not paternal parenting behaviors (Dardis et al., 2013). In the present study, the results for physical neglect and witnessed parental IPV might have been more nuanced had parents been identified separately for these two items. The use of binary or ordinal construction can influence results (Whitfield et al., 2003). Godbout et al. (2019) reported that "[ACE] measures varied too widely between studies to examine the effect of employing specific instruments" (p. 102). ACE variables can be developed using: official records (e.g., child protection services; Kim, Mennen, Trickett, 2017), questionnaires, assessments or screening tools, surveys, and interviews (Godbout et al., 2019). There can be different results when participants are asked to identify subjective versus objective trauma events' association with IPV (LaMotte et al, 2019). There were a multitude of possible differences between studies. This causes difficulty when making comparisons between the present study's outcomes with prior research results.

Multicollinearity. Multicollinearity was of particular concern when looking at family-of-origin variables. This issue can make parsing specific associations more challenging. For example, if the participant's mother had not experienced physical abuse from her partner, perhaps her stress level would be lower and she would have more patience with her children, decreasing maternal physical abuse's association with IPV use. In the present study, the variable exploring how often the participant experienced physical abuse in the home was correlated with both maternal and paternal parental physical abuse.

Reporting Errors. The NCS-R relied on the perception of a single informant, who was over the age of 18. When a study relied on a single informant's recall at a fixed

point in time, there was an increased risk for error because one's perception can be "distorted by the respondent's selective recall" (Wetherington & Kessler, 1986, p. 80). Perception of previous experiences can be highly influenced by one's current momentary stress, mood, or circumstances (Wetherington & Kessler, 1986). The NCS-R relied solely on participant recall to identify a specific ACE, and his age at the time of the first incident without collecting corroborating data from a third party, such as the participant's parents, siblings, or child protective services. Errors have been identified in a youth's ability recall exposure to ACE (see Delsol & Margolin, 2004). It would seem reasonable to consider that recall error would extend into adulthood. Recall error suggests that meta-analyses should consider differentiating variable results based on the ACE data source. When men self-reported IPV use, as was done in the present study, it was impossible to verify participants' reporting accuracy. A prior study on IPV found that some men misrepresented their values; they lied about their coercive control beliefs (Milner & Gold, 1986). This could conceivably extend to denying IPV use. These factors could have resulted in participants underreporting IPV use. For example, in the present study, men might not report IPV use in dating relationships because there was 'No IPV use' his current relationship.

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Appendix A: Respondents Booklet

LIST A

- Pushed, grabbed or shoved
- Threw something
- Slapped or hit

LIST B

- Kicked, bit or hit with a fist
- Beat up
- Choked
- Burned or scalded
- Threatened with a knife or gun

Appendix B: Variable Codebook (unweighted)

R = Reverse coded original item
C = Item used to identify all participants to responded to questions, a base item was created and coded as 0
Positive was used for non-binary variables to identify number of men who expereienced that ACE
* Variable included in the Study

SEX			
1 =	Men	1208	
2 =	Women	1319	

Women were removed from the analysis

REMOVE			
0 =	No	1201	
1 =	Yes	7	0.6%

MR42A	ordinal		Freq do things on list A to current spouse/partner
MR44A	ordinal		Freq do things on list B to spouse/partner
			Both items combined, then if > 20 removed (none identified)
			-8 Don't know = IPV present
MR5	interval	count	# relationships you did list things on list A to your date
			-8 Don't know = IPV present
MR7	interval	count	# relationships you did things on list B to your date
			-8 Don't know = IPV present

participant refused (-9) to respond to at least one of the four

Outcome Variable

qLifeIPV	Lifetime IPV use			
0 =	None	986		
1 =	Yes	215	17.9%	
Valid		**1201**		

MR42	ordinal		Freq do things on list A to current spouse/partner
			-8 Don't know = IPV present
MR44	ordinal		Freq do things on list B to spouse/partner
			-8 Don't know = IPV present
MR5	interval	count	# relationships you did list things on list A to your date
			-8 Don't know = IPV present
MR7	interval	count	# relationships you did things on list B to your date
			-8 Don't know = IPV present

(1) Yes = participant endorsed at least one of the four

Level 1: FAMILY-OF-ORIGIN VIOLENCE

*	**qCH28**	How frequently did anyone in the household do a thing(s) on List A to you		
	0 =	Never	682	56.8%
	1 =	Rarely	260	21.6%
	2 =	Sometimes	187	15.6%
	3 =	Often	70	5.8%
	Valid		**1199**	
	Missing		2	0.2%
	Total		1201	
	Positive		517	43.0%

CH28	ordinal		R	Freq someone did thing from List A to you when growing up
				-8 Don't know = (1) Rarely

Levels	*	**qCH28A1**	Did woman-parental figure do a thing(s) on List A to you		
1		0 =	No	999	83.2%
2		1 =	Yes	200	16.7%
		Valid		**1199**	

Missing		2	0.2%
Total		1201	

CH28	binary	C	Someone did thing from List A to you (family)
CH28A1	nominal		Who did thing on List A to you:1st mention
CH28A2	nominal		Who did thing on List A to you:2nd mention
CH28A3	nominal		Who did thing on List A to you:3rd mention
CH28A4	nominal		Who did thing on List A to you:4th mention

Levels	*	qCH28A2	Did man-parental figure do a thing(s) on List A to you		
1		0 =	No	925	77.0%
2		1 =	Yes	274	22.8%
		Valid		**1199**	
		Missing		2	0.2%
		Total		1201	

CH28	binary	C	Someone did thing from List A to you (family)
CH28A1	nominal		Who did thing on List A to you:1st mention
CH28A2	nominal		Who did thing on List A to you:2nd mention
CH28A3	nominal		Who did thing on List A to you:3rd mention
CH28A4	nominal		Who did thing on List A to you:4th mention

Levels		qCH28A4	How frequently did a sibling(s) do thing(s) on List A to you		
1		0 =	No	1037	86.3%
2		1 =	Yes	162	13.5%
		Valid		**1199**	
		Missing		2	0.2%
		Total		1201	

CH28	binary	C	Someone did thing from List A to you (family)
CH28A1	nominal		Who did thing on List A to you:1st mention
CH28A2	nominal		Who did thing on List A to you:2nd mention
CH28A3	nominal		Who did thing on List A to you:3rd mention
CH28A4	nominal		Who did thing on List A to you:4th mention

Levels	*	qCH29	How frequently did a parent(s) do thing(s) on List A to each other		
1		0 =	Never	995	82.8%
2		1 =	Rarely	110	9.2%
3		2 =	Sometimes	67	5.6%
4		3 =	Often	27	2.2%
		Valid		**1199**	
		Missing		2	0.2%
		Total		1201	
		Endorsed		204	17.0%

CH29	ordinal	R	Freq parent did things on List A to each other when growing up -8 Don't know= (1) Rarely

Level 2: IMPAIRED PARENTING

Levels		qCH2	Your age if a parent(s) died		
1		0 =	16 years, older, or has not died.	1127	93.8%
2		1 =	15 years old	5	0.4%
3		2 =	14 years old	5	0.4%
4		3 =	13 years old	8	0.7%
5		4 =	12 years old	7	0.6%
6		5 =	11 years old	4	0.3%
7		6 =	10 years old	3	0.2%
8		7 =	9 years old	2	0.2%

9	8 =	8 years old	4	0.3%
10	9 =	7 years old	2	0.2%
11	10 =	6 years old	2	0.2%
12	11 =	5 years old	8	0.7%
13	12 =	4 years old	4	0.3%
14	13 =	3 years old	9	0.7%
15	14 =	2 years old	1	0.1%
16	15 =	1 year old	9	0.7%
	Valid		**1200**	
	Missing		1	0.1%
	Total		1201	
	Endorsed		73	6.1%

CH1	binary		C	Lived with both biological parents until 16
CH2A	interval	age	R	Your age when your mother died
CH2B	interval	age	R	Your age when your father died

age = participant endorsed at least one of the two (CH2A, CH2B)
-8 Don't know = (1) age 15

Levels	*	qCH2C	Your age if your parents divorced (by age 16)		
1		0 =	or did not divorce by age	998	83.1%
2		1 =	16 years old	5	0.4%
3		2 =	15 years old	4	0.3%
4		3 =	14 years old	6	0.5%
5		4 =	13 years old	14	1.2%
6		5 =	12 years old	21	1.7%
7		6 =	11 years old	8	0.7%
8		7 =	10 years old	12	1.0%
9		8 =	9 years old	9	0.7%
10		9 =	8 years old	16	1.3%
11		10 =	7 years old	7	0.6%
12		11 =	6 years old	18	1.5%
13		12 =	5 years old	16	1.3%
14		13 =	4 years old	13	1.1%
15		14 =	3 years old	9	0.7%
16		15 =	2 years old	23	1.9%
17		16 =	1 year old	21	1.7%
		Valid		**1200**	
		Missing		1	0.1%
		Total		1201	
		Endorsed		202	16.8%

CH1	binary		C	Lived with both biological parents until 16
CH2C	interval	age	R	Age parents divorced

-8 Don't know = (1) age 16

Levels	*	qCH3	How many of your parents' partners did you live with for 6 or more months		
1		0 =	parents	877	73.0%
2		1 =	ONE	31	2.6%
3		2 =	TWO	128	10.7%
4		3 =	THREE	81	6.7%
5		4 =	FOUR	48	4.0%
6		5 =	FIVE	13	1.1%
7		6 =	SIX	15	1.2%
8		7 =	SEVEN	3	0.2%
9		8 =	EIGHT	2	0.2%

10	9 =	NINE	0	0.0%
11	10 =	TEN OR MORE	2	0.2%
	Valid		**1200**	
	Missing		1	0.1%
	Total		1201	
	Endorsed		323	26.9%

CH1	binary	skip	C	Lived with both biological parents until 16
CH3_1	interval	count		# adult males lived with for 6+ mths in childhood
CH3_2	interval	count		# adult females lived with for 6+ mths in childhood

Levels	**QCH6**	Did you live away from home for 6+ months before the age of 16		
1	0 =	No	1112	92.6%
2	1 =	Yes	87	7.2%
	Valid		**1199**	
	Missing		2	0.2%
	Total		1201	

CH6	binary	R	lived away from home for 6+ months before the age of 16

Levels	*	**qCH30**	How frequently did you experience physical neglect by your parent(s)		
1		0 =	Not at all	945	78.7%
2		1.00 =	A little	127	10.6%
3		1.25 =		2	0.2%
4		1.33 =		5	0.4%
5		1.50 =		11	0.9%
6		1.67 =		5	0.4%
7		1.75 =		2	0.2%
8		2.00 =	Some	56	4.7%
9		2.25 =		2	0.2%
10		2.33 =		2	0.2%
11		2.50 =		9	0.7%
12		2.67 =		1	0.1%
13		2.75 =		2	0.2%
14		3.00 =	A lot	30	2.5%
		Valid		**1199**	
		Missing		2	0.2%
		Total		1201	
		Positive		254	21.1%

CH30_1B	ordinal	Freq left unsupervised at too early age in childhood
CH30_1C	ordinal	Went without needed things due to parents spending on selves
CH30_1D	ordinal	Freq went hungry because parents didn't fix meals in childhood
CH30_1E	ordinal	Freq parents failed to provide medical treatment when sick/hurt

value = averaged the number of items participant endorsed
question reframed to negative, lables relfect this change

Levels	**qCH38**	Was your bio-mother the woman who spent the most time raising you		
1	0 =	Yes	1122	93.4%
2	1 =	No	77	6.4%
	Valid		**1199**	
	Missing		2	0.2%
	Total		1201	

CH38	nominal	What woman spent most time raising you

Levels	**qCH40**	How frequently did you experience emotional neglect by woman parental figure		
1	0 =	Not at all	781	65.0%

2	1.00 =	A little	326	27.1%
3	1.33 =		15	1.2%
4	1.50 =		13	1.1%
5	1.67 =		14	1.2%
6	2.00 =	Some	29	2.4%
7	2.33 =		7	0.6%
8	2.50 =		4	0.3%
9	2.67 =		3	0.2%
10	3.00 =	A lot	5	0.4%
	Valid		**1197**	
	Missing		4	0.3%
	Total		1201	

Endorsed		416	34.6%

CH39_1	ordinal		How emotionally close with mother/woman who raised you
CH40A	ordinal		How much love did mother/woman give you
			-8 Don't know = (1) A little
CH40F	ordinal		Amount of effort mother/woman put in your upbringing
			-8 Don't know = (1) A little

value = averaged the number of items participant endorsed
question reframed to negative, lables reflect this change

Levels	*	**qCH41**	How frequently did woman-parental figure experience anxiety and/or depression		
1		0 =	Not at all	961	80.0%
2		1.0 =	A little	85	7.1%
3		1.5 =		5	0.4%
4		2.0 =	Some	73	6.1%
5		2.5 =		8	0.7%
6		3.0 =	Most	48	4.0%
		Valid		**1180**	
		Missing		21	1.7%
		Total		1201	

Endorsed		219	18.2%

CH41	binary	skip		Growing up-mother/woman had periods of sadness for 2+ wks
CH41A	ordinal		R	Frequency of mother/woman's depression during childhood
				(1) All combined with (2) Most to create: Most
CH46	binary	skip		Growing up-woman constantly anx/nerv for 1+ mth
CH46A	ordinal		R	Mother/woman had anxiety all/most/some/little of childhood
				(1) All combined with (2) Most to create: Most

value = averaged the number of items participant endorsed

Levels	*	**qCH56**	How frequently did woman-parental figure experience alcohol and/or drug use problems		
1		0 =	Not at all	1124	93.6%
2		1 =	A little	19	1.6%
3		2 =	Some	21	1.7%
4		3 =	Most	31	2.6%
		Valid		**1195**	
		Missing		6	0.5%
		Total		1201	

Endorsed		71	5.9%

CH52	binary	skip		Growing up-woman had problem with alcohol or drugs
CH56	ordinal		R	Mother/woman had alcohol/drug problem during childhood
				(4) All combined with (3) Most to create: Most
				-8 Don't know = (1) A little

Levels	qCH62	At least one growing-up parent lied a lot		
1	0 =	No	1137	94.7%
2	1 =	Yes	54	4.5%
	Valid		**1191**	
	Missing		10	0.8%
	Total		1201	

CH62	binary	R	Growing up-woman lied a lot
CH92	binary	R	Growing up-man lied a lot

(1) Yes - endorsed one or both items

Levels *	qCH63	Did growing-up parent(s) often get into physical fights		
1	0 =	No	1115	92.8%
2	1 =	Yes	82	6.8%
	Valid		**1197**	
	Missing		4	0.3%
	Total		1201	

CH63	binary	R	Growing up-woman often got into physical fights
CH93	binary	R	Growing up-man often got into physical fights

(1) Yes - endorsed one or both items

Levels *	qCH66	Did parent(s) run around or desert the family		
1	0 =	No	1094	91.1%
2	1 =	Yes	102	8.5%
	Valid		**1196**	
	Missing		5	0.4%
	Total		1201	

CH66	binary	R	Growing up-woman ran around with men or desert family
CH96	binary	R	Growing up-man ran around with men or desert family

(1) Yes - endorsed one or both items

Levels	qCH68	Was your bio-father the man who spent the most time raising you		
1	0 =	Yes	982	81.8%
2	1 =	No	277	23.1%
	Valid		**1259**	
	Missing		2	0.2%
	Total		1261	

CH68	nominal	What man spent most time raising you

Levels	qCH69	How frequently did you experience emotional neglect by the man-parental figure		
1	0 =	Not at all	396	33.0%
2	1.00 =	A little	465	38.7%
3	1.33 =		59	4.9%
4	1.50 =		54	4.5%
5	1.67 =		47	3.9%
6	2.00 =	Some	68	5.7%
7	2.33 =		14	1.2%
8	2.50 =		6	0.5%
9	2.67 =		10	0.8%
10	3.00 =	A lot	14	1.2%
	Valid		**1133**	
	Missing		68	5.7%
	Total		1201	

Positive		737	61.4%

CH69_1	ordinal		How emotionally close were you with father/man when growing up
CH69_2A	ordinal		How much love did father/man give you
CH69_2B	ordinal		How much effort did your father/man put in your upbringing

value = averaged the number of items participant endorsed
question reframed to negative, labes relfect this change

Levels	*	qCH71	How frequently did man-parental figure experience anxiety and/or depression		
1		0 =	Not at all	1003	83.5%
2		1.0 =	A little	44	3.7%
3		1.5 =		3	0.2%
4		2.0 =	Some	32	2.7%
5		2.5 =		4	0.3%
6		3.0 =	Most	23	1.9%
		Valid		**1109**	
		Missing		92	7.7%
		Total		1201	

Positive		106	8.8%

CH71	binary	skip		Growing up-father/man had periods of sadness for 2+ wks
CH71A	ordinal		R	Frequency of father/man's depression during childhood (1) All combined with (2) Most to create: Most -8 Don't know = A little
CH76	binary	skip		Father/man had anxiety during childhood
CH76A	ordinal		R	Man anx/nerv for 1+ mth in all/most/some/little childhood (1) All combined with (2) Most to create: Most

value = averaged the number of items participant endorsed

Levels	*	qCH86	How frequently did man-parental figure experience alcohol and/or drug use problems		
1		0 =	Not at all	933	77.7%
2		1 =	A little	47	3.9%
3		2 =	Some	48	4.0%
4		3 =	Most	101	8.4%
		Valid		**1129**	
		Missing		72	6.0%
		Total		1201	

Positive		196	16.3%

CH82	binary	skip		Father/man had alcohol/drug problem during childhood
CH86	ordinal		R	Man had alcohol/drug prob all/most/some/little of childhood (1) All combined with (2) Most to create: Most -8 Don't know = (1) A little

Level 3: INDIVIDUAL ADVERSITIES

Levels	qCN3	Age of your 1st sexual intercourse IF before age of 13		
1	0 =	13 years old, older, never	1141	95.0%
2	1 =	12 years old	27	2.2%
3	2 =	11 years old	6	0.5%
4	3 =	10 years old	4	0.3%
5	4 =	9 years old	2	0.2%
6	5 =	8 years old	9	0.7%
7	6 =	7 years old	2	0.2%
8	7 =	6 years old	4	0.3%

9	8 =	5 years old	3	0.2%
10	9 =	4 years old	0	0.0%
11	10 =	3 years old or younger	2	0.2%
	Valid		**1200**	
	Missing		1	0.1%
	Total		1201	
	Positive		59	4.9%

CN3 interval age R Age of 1st sexual intercourse

Levels	* **qCN7_2**	Your age when girlfriend got pregnant or miscarriage/stillbirth/abortion		
1	0 =	or n/a.	1147	95.5%
2	1 =	18 years old	10	0.8%
3	2 =	17 years old	19	1.6%
4	3 =	16 years old	7	0.6%
5	4 =	15 years old	3	0.2%
6	5 =	14 years old	1	0.1%
7	6 =	13 years old or younger	3	0.2%
	Valid		**1190**	
	Missing		11	0.9%
	Total		1201	
	Positive		43	3.6%

CN7_2 binary skip Got somenone pregnant who had miscarriage/stillbirth/abortion
CN7_2A interger age R Age 1st miscar/stillbirth/abortion with someone you got pregnant

Levels	**qDE5_1**	A language other than English was spoken at home		
1	0 =	Both parents born in the US	993	82.7%
2	1 =	One parent born in the US	87	7.2%
3	2 =	Neither parent born in the US	115	9.6%
	Valid		**1195**	
	Missing		6	0.5%
	Total		1201	
	Positive		202	16.8%

DE5_1 interval count R # parents born IN U.S.:

Levels	**qDE7**	A language other than English was spoken at home		
1	0 =	No	1031	85.8%
2	1 =	Yes	170	14.2%
	Valid		**1201**	
	Missing		0	0.0%
	Total		1201	

DE7 binary R Speak language other than English at home when growing up

Levels	**DE20_12**	Number of times you times moved to new neighborhood/town when growing up		
1	0 =	NONE	459	38.2%
2	1 =	ONE	271	22.6%
3	2 =	TWO	112	9.3%
4	3 =	THREE	123	10.2%
5	4 =	FOUR	55	4.6%
6	5 =	FIVE	46	3.8%
7	6 =	SIX	33	2.7%

8	7 =	SEVEN	21	1.7%
9	8 =	EIGHT	17	1.4%
10	9 =	NINE	3	0.2%
11	10 =	TEN	17	1.4%
12	11 =	ELEVEN	1	0.1%
13	12 =	TWELVE	9	0.7%
14	13 =	THIRTEEN	2	0.2%
15	14 =	FOURTEEN	2	0.2%
16	15 =	FIFTEEN	23	1.9%
	Valid		**1194**	
	Missing		7	0.6%
	Total		1201	

Positive		735	61.2%

DE20_12 interval count # times moved to new neighborhood/town when growing up

Levels	qDE20	Year that you left school prior to 12th grade		
1	0 =	12th grade or higher	1026	85.4%
2	1 =	11th grade	56	4.7%
3	2 =	10th grade	37	3.1%
4	3 =	9th grade	21	1.7%
5	4 =	8th grade	29	2.4%
6	5 =	7th grade	14	1.2%
7	6 =	6th grade	7	0.6%
8	7 =	5th grade	4	0.3%
9	8 =	4th grade or lowe	7	0.6%
	Valid		**1201**	
	Missing		0	0.0%
	Total		1201	

Positive		175	14.6%

DE20 interval grade R Highest grade of school/college completed

Levels *	qECON	Were you economically disadvantaged while growing up		
1	0 =	No	1044	86.9%
2	1 =	Yes	153	12.7%
	Valid		**1197**	
	Missing		4	0.3%
	Total		1201	

CH19 binary R Welfare 6+ months
CH61 binary R woman had trouble holding a job
CH91 binary R man had trouble holiding a job

(1) Yes - endorsed one, two, or all items

Levels	qMHTMT	Number of different types of professionals you saw for MH and 1st hospitalization		
1	0	NONE	1106	92.1%
2	1	ONE	32	2.7%
3	2	TWO	41	3.4%
4	3	THREE	9	0.7%
5	4	FOUR	5	0.4%
6	5	FIVE	3	0.2%
7	6	SIX	2	0.2%
8	7	SEVEN	1	0.1%
9	8	EIGH	1	0.1%
	Valid		**1200**	

Missing		1	0.10%
Total		1201	

Positive		94	7.8%

SR2	binary	skip	C	Overnight stay in hosp/facility for mental health/drug-alc use -9 Refused and -8 Don't know = (0) None
SR7	interval	age	R	Age 1st hospitalized overnight for mental health/sub usea
SR12A	interval	age	R	Age 1st session of psych counsel/therapya
SR19	interval	age	R	Age 1st talk to psychiatrist about emotion/mental healtha
SR27	interval	age	R	Age 1st saw medical doctor for mental health/sub usea
SR31	interval	age	R	Age 1st clinic/specialist referral for ment health/sub usea
SR40	interval	age	R	Age 1st saw psychologist about mental health/sub usea
SR48	interval	age	R	Age 1st saw social worker for mental health/sub usea
SR57	interval	age	R	Age 1st saw counselor for mental health/sub usea
SR5B	interval	age	R	Age hospitalized overnight for mental health/substance usea
SR66	interval	age	R	Age 1st saw other ment health prof for ment health/sub usea

number = participant responded at least one of the item in the range from SR7 to SR66
-8 Don't know = 0, items asked about lifetime use

Levels	*	**qRANCEST**	Participant is a minority		
1		0 =	No	952	79.3%
2		1 =	Yes	249	20.7%
		Valid		**1201**	
		Missing		0	0.0%
		Total		1201	

RANCEST	nominal		Race/Ancestry

Levels	**qSC10_4D**	You have a learning disorder(s)		
1	0 =	No	962	80.1%
2	1 =	Yes	44	3.7%
	Valid		**1006**	
	Missing		195	16.2%
	Total		1201	

SC10_4D	binary	R	Have learning disability

Levels	**qSD2**	Age that you first thought seriously about committing suicide		
1	0 =	19 years, older, or has not died.	936	77.9%
2	1 =	18 years old	5	0.4%
3	2 =	17 years old	10	0.8%
4	3 =	16 years old	5	0.4%
5	4 =	15 years old	10	0.8%
6	5 =	14 years old	7	0.6%
7	6 =	13 years old or younger	3	0.2%
8	7 =	12 years old	7	0.6%
9	8 =	11 years old or younger	2	0.2%
10	9 =	10 years old	2	0.2%
11	10 =	9 years old or younger	1	0.1%
12	11 =	8 years old	0	0.0%
13	12 =	7 years old	2	0.2%
	Valid		**990**	
	Missing		211	17.6%
	Total		1201	

Positive		54	4.5%

SD2	binary	skip		Seriously thought about committing suicide
SD2a	interval	age	R	Age first thought seriously about committing suicide

qCH28A3	A non-family member did thing on List A to you
<3%	n=14

CH28	binary	skip	C	Someone did thing from List A to you (family)
CH28A1	nominal			Who did thing on List A to you:1st mention
CH28A2	nominal			Who did thing on List A to you:2nd mention
CH28A3	nominal			Who did thing on List A to you:3rd mention
CH28A4	nominal			Who did thing on List A to you:4th mention

qMMH	Your age when you first received medication for mental health
<3%	n=17

SR13	binary	skip		Received meds for emotions/mental health from professional
SR13a	interval	age	R	Age 1st prescription for emotions

qSUICIDE	Your age the 1st time if you ever attempted suicide
<3%	n=31 (lifetime)

SD6	binary	skip		Ever attempted suicide
SD8	interval	age	R	Age 1st time attempted suicide
SD21	interval	age	R	Age 1st time attempted suicide

Appendix C: Items Identified for Variable Creation

FAMILY-OF-ORIGIN PHYSICAL AGGRESSION

(Note: due to data cleaning activities, the final item abbreviation (e.g., qCH29) in the Appendix often will not match indicator abbreviation used in the tables, but item description will match.)

While you were growing up, during your first 18 years of life (unless specified earlier):

WITNESSED PARENTAL PHYSICAL AGGRESSION

- CH29 Freq parent did things on List A to each other when growing up [Appendix F]
- PT50_1B How many times witness physical fights at home Restricted
- PT50_1 Did you ever witness serious physical fights at home Restricted
- dPT50_1A How old first time witness physical fights at home Restricted
- PARENT INVOLVED IN PHYSICAL FIGHTS (combined)
  - CH63 Growing up-woman often got into physical fights (y/n)
  - CH93 Growing up-man often got into physical fights (y/n)

PHYSICAL ABUSE BY HOUSEHOLD MEMBER

- CH28 Freq someone did thing from List A to you when growing up [Appendix F]
- CH28A1-A4 Who did thing on List A to you: (up to 4 people identified)
- yPT41yth Ever badly beaten by parents Restricted
- How many times beaten in lifetime Restricted

SEXUAL ABUSE

- PT45 How old first time raped Restricted
- PT 46 How old first time sexually assaulted Restricted
- PT42. Were you ever badly beaten up by a spouse or romantic partner Restricted (before age 19)

yPT47yth. Has someone ever stalked you

IMPAIRED PARENTING

EMOTIONAL NEGLECT

- CH39_1 How emotionally close with woman who raised you when growing up (scale 1-4)
- CL40a How much love did woman give you (scale 1-4)
- CH40f Amt of effort woman put in your upbringing (scale 1-4)
- CH69_1 How emotionally close were you with man when growing up (scale 1-4)
- CH69_2a How much love did man give you (scale 1-4)
- SU2a Age 1st drank 12 drinks per year [1 = >14 and <16, 2 = <14]

- CH30_1a Freq made to do chores too diffic/dang for age in childhood
- CH69_2b How much effort did your man put in your upbringing (scale 1-4)
- MR1_2 How old were you when you had your first date?
- SU87a Age 1st opportunity to use alcohol

PHYSICAL NEGLECT

- Experienced childhood neglect (unsupervised, parents spent on themselves)
  - CH30_1b Freq left unsupervised at too early age in childhood (scale 1-4
  - CH30_1c Freq went without needed things due to parents spending on selves (scale 1-4)
- CH30_1d Freq went hungry/parents didn't fix meals in childhood (scale 1-4)
- CH30_1e Freq parents failed to get medical tmt when sick/hurt as child (scale 1-4)

PARENTAL MENTAL HEALTH

- CH56 Growing up-woman had problem with alcohol or drugs (y/n) [combined with]
  - CH56 Growing up-substance use interf lot/some/little/none w/ life (scale 1-4, from a lot to some)
- CH82 Growing up-man had problem with alcohol or drugs (y/n) [combined with]
  - CH90 Growing up-substance use interf lot/some/little/none w/ life (scale 1-4, from a lot to some)
- CH41 Growing up-mother/woman had extended periods of sadness (y/n) [combined with]
  - CH41a Frequency of mother/woman's depression during childhood (scale 1-4, from a lot to some)
- CH46 Growing up-woman constantly anx/nerv for extended period (y/n) [combined with]
  - CH46a Woman anx/nerv for 1+ mth in all/most/some/little childhood (scale 1-4, from a lot to some)
- CH71 Growing up-father/man had extended periods of sadness (y/n) [combined with]
  - CH71a Frequency of father/man's depression during childhood (scale 1-4, from a lot to some)
- CH76 Growing up-man constantly anx/nerv for extended period (y/n) [combined with]
  - CH76a Man anx/nerv for 1+ mth in childhood (scale 1-4, from a lot to some)
- CH42 During worst depression-woman had other symptoms (y/n)
- CH44 Received professional treatment (y/n)
- CH44a Growing up-woman was hospitalized for depression (y/n)
- CH45 Growing up-depression interfered a lot with her life activities (y/n)
- CH47 Worst nervous episode-woman had other symptoms (y/n)
- CH49 Growing up-woman got prof treatment for nervousness (y/n)
- CH50 Growing up-nervousness interfered a lot with life/activities (y/n)

- CH67 Growing up-woman attempted to commit suicide (y/n)
- CH72 During worst depression-man had other symptoms (y/n)
- CH74 Growing up-man received prof treatment for depression (y/n)
- CH75 Growing up-depression interfered a lot with his life activities (y/n)
- CH77 Worst nervous episode-man had other symptoms (y/n)
- CH79 Growing up-man received prof treatment for nervousness (y/n)
- CH80 Growing up-nervousness interfered a lot with life/activities (y/n)
- CH97 Ever your [growing-up] man attempt commit suicide (y/n)

NEGATIVE ROLE MODEL

- Parent(s) involved in crime
  - CH64 Growing up-woman involved in crime (burglary/selling stolen property) (y/n)
  - CH94 Growing up-man involved in crime (burglary/selling stolen property) (y/n)
- Parent(s) lied a lot (0 = neither parent, 1 = one parent, 2 = both parents ??)
  - CH62 Growing up-woman lied a lot (y/n)
  - CH92 Growing up-man lied a lot (y/n)

PARENTAL ABSENCE

- Bio-woman NOT woman who raised you
  - CH38 What woman spent most time raising you (not birth mother AND mother not dead)
- Bio-man NOT man who raised you
  - CH68 What man spent most time raising you (not birth father AND father not dead)
- CH2c Your age when your parents divorced before age 16
- CH1 Lived with both biological parents until age 16
- CH11 & CH12 Reason did not live with parents until age 16

PARENT DEATH

CH2_1 Parent Died (y/n)

- CH2a Your age when your mother died (before age 16)
- CH2b Your age when your Father died (before age 16)

- # of adults lived with 6+ months, bio-parents split before age 16
  - CH3_1 # adult males lived with for 6+ mths in childhood
  - CH3_2 # adult females lived with for 6+ mths in childhood
- Growing up-parent ran around or desert the family
  - CH66 Growing up-woman ran around with men or desert family
  - CH96 Did man ever run around with women or desert the family
- In foster care
  - CH1_1 Did not live with parents because in foster care (#7)

Did not live with parents: because Other (#0])

- CH2F How old when went under foster care Restricted
- CH2g How old when left home (before age 16) (#8) Restricted
- CH6c and CH6ca total amount of time away from home before age 16 [month/years]

INDIVIDUAL ADVERSITIES

MENTAL HEALTH

- SUICyth Age made first attempt suicide
- zMHeal number of professionals seen for MH as a youth (no hospitalization).
- zSR13yth age first received medication for mental health.
- zMHsvc As youth, number of MH/A&D providers & hospitalizations
- As youth, number of times hospitalized for mental health/substance abuse (summed items)
    - G59A Age 1st hospitalized overnight for worry/anxious/nervo
    - D87 Hospitalized overnight for sadness
    - 16 Other Mental Health Disorders:
        - m48
        - IR71A
        - PD65a
        - SP41A
        - SO39a
        - AG38A
        - G59A
        - IED33A
        - SR7
        - SU119_1
        - N47A
        - O70A
        - AD28A
        - AD43_1H
        - OD26A
        - SA47A

- D37a Age 1st depressed episode
- D37b1 Estimate age 1st depressed episode
- G26a Age 1st worry/anxious/nervous episode + other probs
- G26b1 Estimate Age 1st worry/anxious/nervous episode + other probs

DISCRIMINATION

- Born outside of US (self/parents/gparents)
    - DM1_7 Number of parents not born in US (y/n)
    - DE4 County you were born in (US/Other)
- DE7 Speak language other than English at home when growing up
- RANCEST Participant is a minority
- Age at Immigration
- AS4 Interaction hard due to difficulty with English language (can't locate)
- CN11_2 Sexual experience mostly with what gender

- DS1iF Frequency threatened/harassed (unable to locate)
- DS1hF Frequency called names/insulted (unable to locate)
- DS4 Disliked due to race (scale 1-4) (unable to locate)
- DS5 Treated unfairly due to race (scale 1-4) (unable to locate)

POVERTY

- Economic Disadvantage
  - CH19a # yrs from birth - 18 family received gov't assistance
  - H50 Received welfare growing up (can't locate)
  - H50a How much time on welfare before age 18 (can't locate)
  - CH61 V05865 Woman had trouble holding a job
  - CH91 V05900 Man had trouble holding a job

OTHER

- In youth, experienced miscarriage/stillbirth/abortion/child's death
  - CN6b Age of first abortion
  - CN5b Age first miscarriage/stillbirth
  - CN7c_1 How old were you when child died
  - CN7_2 Age 1st miscar/stillbirth/abortion with someone you got preg
  - CN3a3a Age first unwanted pregnancy
  - CN3a3b Estimate Age first unwanted pregnancy
- DE20_12 # times moved to new neighborhood/town when growing up (0 to 15)
- zCD37yth Age 1st police trouble for aggressive behavior
- zSC10_4d Learning disorders
- DE20 Highest grade of school/college completed
- H12 Condition of health through age 16 (fair/poor) (can't find)
- CN3 Age of 1st sexual intercourse Restricted
- PTOTHYTH PTSD items <3% endorsed, first exposure during youth

TRAUMA EVENTS

yPT36yth Were you ever involved in a life-threatening automobile accident?
yPT37yth Did you ever have any other life- threatening accident, including on your job?
yPT38yth major natural disaster, like a devastating flood, hurricane, or earthquake?
yPT39yth man-made disaster, like a fire started by a cigarette, or a bomb explosion?
yPT40yth you ever have a life-threatening illness?
YPT48yth someone very close ever died unexpectedly
PTothyth number of misc trauma experienced as identified by for DSM diag of PTSD

COMMUNITY VIOLENCE

- PT43 Ever beaten by anyone else (NON-FAMILY)

- PT44 mugged Restricted
- yPT51yth you saw someone badly injured or killed / unexpectedly see dead body
- yPT50yth Did anyone very close ever have an extremely traumatic experience, like being kidnapped, tortured or raped?
- CH28b-e number who did thing on List A to you: (other non-family) [Appendix F]
- CC72 Age when [participant] threat [someone] with gun happened.
- CC79 Age threatened someone with other weapons 431
- CC80 Age 1st time threatened someone with other weapon
- CD16c use weapon on other person as child or teen (y/n)
- CC73 Age 1st time threatened someone with gun [1 = > 11 years old; 2 = < 12 years old]
- CD16b As child or teen repeatedly get in physical fights (y/n) (unclear is victim or aggressor)

VITA

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Born, Oregon, U.S.A.

1987-2007	Intel Corp., Finance, Portland, Oregon
1994-2007	Meditation Support, Art of Living, Washington, County, OR
1995	Business, B.A. Concordia University Portland, Oregon
2003 - 2004	Rape Advocate, Sexual Assault Resource Center, Beaverton OR
2004 - 2006	Community Review Board Member, Washington County OR
2008-2009	Intel Corporation, Finance, Miami, Florida
2008 - 2010	Instructor (beading), Spectrum, Miami, FL
2010	Trauma Specialist, Trauma Resolution Centre, Miami FL.
2011	M.S. Social Work Florida International University Miami, FL
2012-Current	Ph.D. Candidate Florida International University Miami, FL
2012-2014	Research Assistant Florida International University Miami, FL

2013 – 2015 Committee member of the Family Violence Prevention Caucus, American Public Health Association.

2014 and 2015 Program Committee, the Women's Health Caucus, American Public Health Association.

2015 Moderator, session on Intimate Partner Violence, Women's Health Caucus, American Public Health Association, November 2015, Chicago, IL.

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2016-2018	Ontrack, Inc. Mental Health, SUD Co-occurring Therapist Medford, Oregon
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Intel Achievement Award recipient (highest corporate award) for developing and co-leading prelaunch program, a process improvement project that protected Intel's patents for chip-set development.

PUBLICATIONS, PRESENTATIONS AND POSTERS

Ruggiano, N., Shtompel, N., Whiteman, K., & Sias, K., (2017). The role of transportation in health self-management among older adults with chronic conditions. *Behavioral Medicine, 43*(1)*,* 61- 70. doi: 10.1080/08964289.2015.1065788.

Sias, K. (October, 2016). *Interpreting the Sequelae of Adverse Childhood Experiences in Neuroscience Research.* Poster at Society for the Study of Human Development National Conference, Houston, TX.

Sias, K. & Ruggiano, N. (April, 2015). *Addressing Intimate Partner Violence in Urban Environments: A New Paradigm.* Presentation at Urban Affairs Association National Conference, Miami, FL.

Schotthoefer, L., Ruggiano, N., Chirito, F., Lukic, A., O'Driscoll, J. & Sias, K. (April, 2015). *Growing Older in Miami: Perspectives and Concerns from a Diverse Sample of Urban Baby Boomers*. Presentation at Urban Affairs Association National Conference, Miami, FL.

Sias, K. (April, 2014). *The enmeshment of social policy strategies with the treatment of intimate partner violence*. Presentation at Graduate School Scholarly Forum, Florida International University.

Ruggiano, N., Sias, K., Shtompel, N. & Fortuna, K. (March, 2014). *The role of transportation in health self-management among older adults with chronic conditions living in south Florida*. Presentation at Urban Affairs Association National Conference, San Antonio, Texas.

Sias, K. (November, 2013). *A new analysis approach to social problems: A case study looking at domestic violence*. Poster presented at American Public Health Association National Conference, Boston, MA.