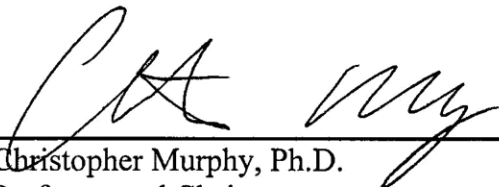


APPROVAL SHEET

Title of Dissertation: Partner Aggression in a Digital Age: Prevalence and Predictors of Cyber Psychological Abuse

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Doctor of Philosophy 2017

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April 26, 2017

ABSTRACT

Title of Document: PARTNER AGGRESSION IN A DIGITAL AGE: PREVALENCE AND PREDICTORS OF CYBER PSYCHOLOGICAL ABUSE.

Jacqueline Cooper Reyner, Ph.D., 2017

Directed By: Christopher M. Murphy, Ph.D., Professor of Psychology.

Along with the growth of information communication technologies, cyberaggression has emerged as an important focus of study. This research largely concerns cyberbullying among children and adolescents, with little known about adult intimate partner abuse perpetrated through information communication technologies. The current investigation examined the prevalence of cyber psychological abuse (CPA) perpetration and victimization among adult internet users. This study also investigated the relationships between CPA and traditional forms of partner abuse and whether technology use and previously established risk factors for traditional intimate partner violence predicted CPA. Factors hypothesized to predict CPA included demographics (age, female sex) history of child maltreatment, psychological factors (problematic alcohol use, problematic drug use, difficulties in emotion regulation), and relationship-related factors (attachment insecurity, relationship jealousy, communication skills, and relationship satisfaction). Participants were 243 adult internet users in an intimate relationship during the past 12-months. Participants were recruited through Amazon's Mechanical Turk and completed an online assessment battery. Descriptive analyses indicated approximately three quarters of participants (75.3% for perpetration; 71.2% for victimization) reported at least one instance of

CPA during the past year, with 10% reporting at least one instance of severe CPA victimization or perpetration. Individuals reporting higher CPA perpetration and victimization reported greater daily cellular phone use and greater daily social media use. CPA victimization and perpetration were both positively correlated with traditional forms of abuse, including physical assault, emotional abuse, and sexual coercion. Multivariate hierarchical regression analyses suggested that each set of risk factors for traditional forms of intimate partner abuse contributed significant unique variance to the prediction of CPA. Unique predictors of perpetration included older age, greater child physical and sexual abuse, greater problems with alcohol, more difficulties with emotion regulation, more behavioral jealousy, and less relationship satisfaction. Unique predictors of CPA victimization included greater child physical abuse and child sexual abuse, more problems with alcohol, more behavioral jealousy, and less relationship satisfaction. Results suggest that CPA is common among adult internet users and that it co-occurs with traditional forms of abuse. Clinical implications involve the need for screening and intervention practices for safe technology use in populations at risk for partner violence.

PARTNER AGGRESSION IN A DIGITAL AGE: PREVALENCE AND
PREDICTORS OF CYBER PSYCHOLOGICAL ABUSE

By

Jacqueline Cooper Reyner

Dissertation submitted to the Faculty of the Graduate School of the
University of Maryland, Baltimore County, in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
2017

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2017

Dedication

See ville, der daco.
Tousan bus es inero.
Nojo demes trux
Summit cowsen, summet dux

I dedicate this work to my family,
whose unwavering support and humor
sustains me through the most difficult of times.

Acknowledgements

I am deeply grateful to my mentor and committee chair, *Dr. Christopher Murphy*, whose guidance, wisdom, and generosity have been instrumental to this project as well as to my development as a clinician and researcher. Your unyielding support and belief in my potential propelled me through the challenges of graduate school. I would also like to acknowledge the other members of my dissertation committee: *Drs. Laura Ting, Shari Waldstein, Eileen O'Brien, and Nicole Else-Quest*. Thank you for your feedback during the development of this manuscript and support during my graduate school tenure.

Thank you to *Dr. Robert Deluty*, Associate Dean of the Graduate School at UMBC. Robert, I will always be grateful for your kind words and encouragement, which inspired me and helped me to keep pursuing my goals. My sincere thanks to you and the Graduate School for awarding me with the Dissertation Fellowship, which allowed me to have dedicated time to complete this manuscript.

My sincere gratitude to my graduate school friends and colleagues, especially *Caitlin Thompson, Mollie Sprung, and Katie Wright*. Thank you for countless study dates, coffee breaks, and laughs. Your friendship has been invaluable to me throughout this journey and I am so proud of you.

Thank you to the Psychology Department at UMBC, who provided the funding for this project. My sincere thanks to Nicole Mooney for her administrative support and guidance.

I would also like to thank all the individuals who participated in this research. Thank you for taking the time to share of yourself in order to advance understanding of partner abuse.

My gratitude to my dearest friend, *Genevieve Scott*, whose passion and dedication to improving women's lives inspires me to do the same. To *Scott Mahoney*, whose industriousness and positivity motivate me to "think big" and strive for excellence. And to *Paul and Laura Mager*, who bring out the happiest version of myself. Thank you to you and my other wonderful friends for sharing in this journey with me.

Finally, thank you to my family, without whom I would never have made it through graduate school. Thank you *Peter and Eleanor Reyner*. Your unconditional love gives me the courage to set my goals high. Thank you *Elizabeth and Barney Lihn* for your support and love over the years. Thank you *Nancy Reyner*, for inspiring me to use my creative side in my work. And thank you to the late *Arthur Levy*. I miss you and know you would have been very proud.

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Chapter 1: Introduction

Overview

In recent years, the explosion of information communication technology, particularly of the internet, social networking, and cellular telephones, has changed the nature of communication, allowing individuals who use these technologies to communicate more frequently, more easily, and in more different places (Chaulk & Jones, 2011). With the emergence of these technologies, their role in social interactions and relationships has begun to be examined, under the premise that ICTs have changed the nature of how individuals communicate within their social networks (Wilson, Gosling & Graham, 2012).

Whereas there are benefits of new technologies and increased connections to one's social network, there are also dangers associated with the use of new communication technologies. To date, the majority of the literature in this area has focused on cyberbullying among children and adolescents and has detailed the extent, nature, correlates, and consequences of cyberbullying. There is by far less known about cyberaggression between adults, which, unlike the cyberbullying literature, may be referred to with many different terms, such as cyberharassment (Melander, 2010), cyberstalking (e.g., Menard & Pincus, 2011; Reynolds, Henson, & Fisher, 2012; Sheridan & Grant, 2007) cyberaggression (Schnurr, Mahatmya, & Basche, 2012), or cyber psychological abuse (Leisring and Giumetti, 2014). Overall, this research shows that the various forms of cyberaggression can be quite damaging to victims and that there are several overlapping risk factors among the different types of cyberaggression (Sheridan & Grant, 2007).

Intimate partners are an important population to study with regard to cyberaggression, as former intimate partners are among those who frequently perpetrate online aggression (Alexy et al., 2005; Southworth et al., 2007; Sheridan & Grant, 2007). Initial research has noted the ways technologies are used to stalk, harass, or otherwise abuse intimate partners, noting that the use of technology creates a new climate of partner abuse (Finn & Banach, 2000; Melander, 2010; Alexy et al., 2005; Draucker & Martsof, 2010; Southworth et al., 2007). Further, research suggests that a high proportion of young adults (71% perpetration and 75% victimization) experience at least one form of cyber abuse in intimate relationships (Melander, 2010; Schnurr et al., 2012; Zweig et al., 2013).

This research provides some preliminary information on the prevalence of cyber abuse in intimate partners and how technology is used in partner abuse; however, this area of research is nascent and there is a clear need to examine this new form of partner abuse with regard to its risk factors and correlates. Issues that remain unanswered in the literature are a more nuanced understanding of the relationship between traditional aggression and cyberaggression between intimate partners, the risk factors for intimate partner cyber abuse, and whether the risk factors for partner cyber abuse are the same as for traditional partner aggression. Additionally, the majority of the literature on cyberaggression generally examines children, adolescents, or college students, limiting the generalizability of findings to these populations.

The present study examined the prevalence of and correlates of cyber psychological abuse between intimate partners in an adult sample of internet users. Specifically, the present study examined whether demographic and previously established risk-factors for IPV are also risk factors for cyber psychological abuse between intimate

partners. The literature review begins with a general introduction to intimate partner violence and an overview of the established risk factors for IPV perpetration that will be examined in the present study. Following this, an overview on cyberaggression is presented, including its definition and unique aspects. The literature on the various types of cyberaggression (e.g., cyberbullying, cyberstalking) and their risk factors are then reviewed. Finally, the existing literature specific to cyber abuse between intimate partners is outlined.

Review of the Literature

Traditional Forms of Intimate Partner Abuse.

The word “violence” with regard to IPV is typically limited to physical assault resulting in the threat of one’s bodily integrity; however, the overarching context of intimate partner violence is most often one of control, coercion, and emotional abuse (Murphy & Eckhardt, 2005), thus the term “intimate partner abuse” will be used in the current study to reflect these different forms, and intimate partner violence (IPV) will be used to reflect physical assaults and threats to bodily integrity. Additionally, the different forms of abuse often co-occur. Physical violence, for example, often occurs along with emotional and/or sexual abuse (Murphy & Eckhardt, 2005). As such, the present study views intimate partner abuse as comprising of four forms, based on the behaviors and intentions of the abusive partner: physical assault (from mild to severe), psychological/emotional abuse, sexual coercion/violence, and stalking when it occurs between intimate partners (Murphy & Eckhardt, 2005; Barnett, Miller-Perrin & Perrin, 2005). The term “intimate partner” throughout the present paper is broadly interpreted and refers not only to current and former married partners, but also dating, cohabitating, and same-sex couples (Barnett,

Perrin & Perrin, 2005). These four different forms of partner abuse are briefly described below.

Physical violence involves intentionally directing unwanted physical force toward the body of a partner and aggressive behaviors (Straus et al., 1996; Murphy & Eckhardt, 2005). Examples of such behaviors include: scratching, pushing, shoving, biting, choking, slapping, burning, and the use of weapons against one's partner. Typically, these behaviors are conceptualized as occurring on a continuum of severity, from minor (e.g., pushing or grabbing) to severe (e.g., using a gun or knife on a partner) (Straus et al., 1996).

Sexual Violence and Coercion consists of a few different sexually aggressive behaviors. The most obvious component, consistent with the legal definition of sexual assault, is often referred to as "sexual violence" (Murphy & Eckhardt, 2005), meaning both threats of physical force and the use of physical force in the attempt to obtain sexual activity (i.e., vaginal, oral, or anal intercourse) (Murphy & Eckhardt, 2005). Sexual aggression as it relates to intimate partners can also refer, however, to "sexual coercion", or "behaviors intended to compel the partner to engage in unwanted sexual activity" (Straus et al., 1996, p. 290). Examples include attempts to obtain sex through manipulation, verbal insistence, deception, or other verbal threats or degrading comments. Also included in sexual aspects of partner abuse are other behaviors, such as pressure to engage in unwanted sexual activity with other people, withholding sex in a degrading manner, and emotionally abusing a partner through sexually degrading comments (Murphy & Eckhardt, 2005).

Psychological and emotional abuse often co-occur with physically abusive behaviors and can have as much or even more emotionally damaging effects than physical abuse for battered women (Follingstad, Rudledge, Berg, Hause, & Polek, 1990; Lynch, Grraham-Bermann, 2000; Murphy & Eckhardt, 2005; O’Leary, 1999). There have been several definitions noted in the literature. Psychological abuse overall refers to “coercive verbal emotional and psychological behaviors (e.g., insulting or swearing at the partner) and nonverbal behaviors that are not directed at the partner’s body (e.g., slamming doors or smashing objects)” and they are often are perpetrated with the intention of inflicting emotional harm (Murphy & O’Leary, 1989, p. 40; Murphy & Cascardi, 1999).

More recently, there have also been additional behaviors and types of abuse noted under the umbrella of emotional abuse that extend beyond the behaviors of the Conflict Tactics Scales (Barnett et al., 2005). For example, the Multidimensional Measure of Emotional Abuse (MMEA; Murphy & Hoover, 1999; Murphy, Hoover, & Taft, 1999) was developed with the intention of differentiating between different forms of emotional abuse that are common in both dating and cohabiting relationships. The MMEA assesses four distinct but correlated forms of psychological abuse. The first, Hostile Withdrawal, consists of behaviors intended to punish the other partner by withdrawing attention, affection, or communication). These behaviors often increase the partners’ insecurities about the relationship (Murphy & Eckhardt, 2005). Examples include refusing to talk about a problem and acting cold and distant when angry. The second form, Restrictive Engulfment, encompasses isolating the partner from his or her social contacts or other important activities, monitoring and/or tracking the partners’ whereabouts. (Murphy &

Hoover, 1999; Murphy & Eckhardt, 2005). These behaviors often serve to increase the partners' dependence on the abusive partner. The third dimension is Denigration, which involves actions and comments that are intended to damage the partners' sense of self-worth through belittling, humiliating, or degrading them (Murphy & Hoover, 1999; Murphy & Eckhardt, 2005). The fourth dimension, Dominance/Intimidation, encompasses actions that are not physical assault, but are similarly intended to produce fear and submission (Murphy & Eckhardt, 2005). Examples include threats of physical harm, violent actions toward objects (e.g., punching a wall), or intimidating looks and gestures.

Stalking traditionally refers to “harassing or threatening behavior that an individual engages in repeatedly, such as following a person, appearing at a person’s home or place of business, making harassing phone calls, leaving written messages or objects, or vandalizing a person’s property” (Tjaden & Thoennes, 1998). Whereas some victims of stalking have no prior intimate relationship with the stalker, when the victim-offender relationship involves current or former intimate partners, it can be classified under the umbrella of intimate partner abuse (Barnett et al., 2005). Furthermore, the research indicates a very strong connection between stalking and other types of intimate partner abuse (Southworth, 2005). For example, the Department of Justice (2001) reported that of women stalked by a current or former partner, that same partner physically assaulted (81%) or sexually assaulted them (31%).

Predictors of Traditional Partner Abuse Perpetration.

Studying the risk factors and predictors of intimate partner abuse perpetration is critical to informing both theory, prevention and intervention in the partner violence field.

As such, there is a substantial body of research and literature summarizing risk factors for perpetration (e.g., Capaldi et al., 2012; Barnett et al., 2005). While there are several theories for what causes the perpetration of IPV (e.g., see Barnett et al., 2005 for a review), models that incorporate more comprehensive and biopsychosocial factors have only emerged in more recent years (Murphy, 2013; O’Leary et al, 2014). The present review of the risk factors for IPV is limited to previously established demographic, developmental, relational and psychological/behavioral predictors of adult IPV perpetration that will be examined in the present study.

Demographic predictors. In studies of the predictors of IPV perpetration and victimization, several demographic variables have been examined, such as age, gender, racial/ethnic group, and socioeconomic status. Of note, these demographic factors are more often studied as control variables in the prediction of IPV than they are studied as predictors in and of themselves (Capaldi et al., 2012). Regarding age, younger adults perpetrate more IPV (Kim, Laurent, Capaldi & Feingold, 2008). Findings regarding racial-ethnic group identification suggest that minority group membership is predictive of IPV perpetration; however, associations between race/ethnicity and IPV tend to be eliminated when other demographic factors are taken into account, such as income (Ramisetty-Mikler, Caetano, & McGrath, 2007; Vest, Catlin, Chen & Brown, 2002). Similarly, a recent review of risk factors for IPV noted that the association between SES and IPV is minimized when controlling for the effects of other psychosocial factors that predict IPV (Capaldi et al., 2012).

Several studies have examined whether males or females are more likely to perpetrate IPV. Regarding physical aggression, there are several empirical studies

showing either relatively equal reports of IPV perpetration between males and females (e.g., Robertson & Murachver, 2007; Straus & Ramirez, 2004) or greater reports physical IPV perpetration among women (e.g., Archer, 2000; DeMaris, , 1992; Magdol, Moffitt, Caspi, Fagan & Silva, 1997; Schumacher et al., 2008). However, it is important to note that the gender differences may depend on the type of IPV, as most of the above studies did not report on rates of sexual aggression or coercion. Additionally, in perpetrating physical violence toward a partner, men are significantly more likely to cause physical injury (Archer, 2000; Ehrensaft et al. 2004; Felson & Cares, 2005). Despite the research demonstrating the effects of age and other demographic variables, it is important to note that these are risk factors, but have not been demonstrated to be causal factors in IPV perpetration; Thus, intimate partner violence can and does occur among individuals of any age, racial-ethnic group, socioeconomic status, and in either gender. However, that there are associations between these demographic factors and IPV means that they are still important factors to consider when conducting research on predictors of aggression between partners.

Childhood factors. By far, two of the most studied and consistently strong risk factors for perpetration of partner violence are having a history of maltreatment in childhood (physical abuse, sexual abuse, or neglect) and witnessing partner violence in one's family of origin (Barnett et al., 2005; Capaldi et al., 2012; O'Leary, Tintle & Bromet, 2014; Ehrensaft et al., 2003; Widom et al., 2014). Predominately, the associated theoretical model with regard to these factors is the social learning perspective (Bandura, 1986). A social learning explanation for IPV proposes that when children are mistreated by their parents or caregivers, they then learn aggressive behavior patterns that manifest

in adulthood (Ehrensaft et al. 2003). There is an extensive body of literature supporting the links between perpetration of IPV and both of these factors, although most of the supporting studies have relied on retrospective reports of one's family of origin making causal links difficult to determine (Capaldi et al., 2014). Meta-analyses and empirical reviews of the literature show small to moderate effect sizes between both exposure to parental violence and the various types of child maltreatment as they predict perpetration of IPV in adulthood (Capaldi et al., 2012; Stith et al., 2000). Longitudinal studies suggest that harsh physical discipline as well as overall child abuse and neglect predict perpetration of IPV in adulthood (Swinford et al., 2000; White & Widom, 2003). Similarly, with regard to witnessing interparental violence, the association with perpetration of IPV is well documented in the literature and those who report a history of parental violence report greater perpetration of IPV even after controlling for other variables that are related to IPV perpetration such as childhood adverse events, race/ethnicity, and other demographic variables (Roberts, Gilman, Fitzmaruice, Decker, & Koenan, 2010). What's more, some longitudinal studies suggest that a history of child abuse and neglect may predict more severe IPV perpetration. For example, Widom, Czaja, & Dutton (2014) conducted a longitudinal study following children age 0-11 into middle adulthood and found that while child abuse and neglect did not predict physical, sexual or psychological IPV, it did predict whether one later physically injured a partner. Similarly, in another longitudinal study, Ehrensaft and her colleagues (2003) found that childhood physical abuse longitudinally predicted inflicting injury on one's partner in adulthood.

Given these associations, considering prediction of IPV in the context of early childhood developmental experiences is important, as children who witness or are victim to violence may learn these patterns of interaction and later repeat them, as social learning theory would suggest (Bandura, 1986). It has also been suggested that both child maltreatment and witnessing violence between caregivers have in common a disrupted relationship with one's caregivers, which leads to increased risk of perpetrating IPV later in life through the pathway of emotion regulation deficits and problematic social information processing, which serve as mediating variables to increase the risk for perpetrating IPV later in life (Ehrensaft et al., 2003).

Psychological and behavioral predictors. In recent years, the focus of explanation for IPV has shifted from a cultural perspective explaining IPV as a form of power and control to a more multifaceted perspective that includes individual-level factors and behavioral traits of the perpetrator as they explain IPV perpetration (Barnett et al., 2005). As such, several individual psychological, personality, and behavioral factors have been studied in relation to IPV perpetration, and it is believed that these variables may be mediating factors through which the aforementioned childhood experiences impact IPV perpetration (O'Leary, 1988). Indeed, proximal psychological variables are more associated with physical IPV than developmental experiences in one's family of origin (Stith, Smith, Penn, Ward, & Tritt, 2004). Of these variables, some of the most commonly studied and established psychological predictors of IPV perpetration are antisocial or other criminal behavior, personality disturbances, anger and hostility, and various psychological disorders such as depression, substance abuse, and post-traumatic stress disorder (PTSD). Of note is that while there are links between these individual

characteristics and IPV perpetration, it is widely accepted that those who commit IPV are a heterogeneous population, in terms of the aforementioned demographic characteristics as well as personality factors (Ehrensaft et al., 2006; Ehrensaft et al., 2004). Not surprisingly, there have been attempts to classify abusive partners on these characteristics. For example, Holtzworth-Munroe and Stuart (1994) proposed three subtypes of men who are abusive toward their partners based on the severity of the violence, extent of the violence, and personality characteristics. The first type, family only, show signs of aggression only in their family or intimate relationship. The second, dysphoric/borderline, are characterized by moderate to severe violence and are the most depressed and emotionally dysregulated, and may show borderline personality traits. The third type, generally violent/antisocial, are characterized by general patterns of antisocial behavior and other types of violence. They also are characterized by greater use of substances, and moderate to severe marital violence (Holtzworth-Munroe & Stuart, 1994).

Associations between conduct problems or antisocial behavior and IPV perpetration have been found consistently in different samples and in both cross-sectional and longitudinal studies. In samples of IPV perpetrators referred to treatment, there have been higher rates of antisocial behavior found than in the general population (Murphy & Eckhardt, 2005; Remington, Murphy, Scott, & Simoneti, 1999; Remington & Murphy, 2001). For example, in the New Zealand birth cohort longitudinal study, one of the strongest predictors of IPV perpetration was antisocial problem behavior in childhood and adolescence (Magdol et al., 1997). Similarly, Capaldi, Dishion, Stoolmiller and Yoerger (2001) found that IPV in young adulthood was predicted by antisocial behavior

in late adolescence. Importantly, the association between antisocial behavior and IPV perpetration remains strong, even when studies control for other relevant factors such as interparental IPV, gender, and depressive symptoms (Ehrensaft et al., 2003; Andrews, Foster, Capaldi & Hope, 2000; Kim & Capaldi, 2004). While most studies examine antisocial behavior as it relates to physical violence, it is also the case that antisocial traits are also associated with psychological IPV, even after controlling for depression (Kim & Capaldi, 2004). As such, it comes as no surprise that a recent review noted that antisocial behavior is a robust predictor of later IPV (Capaldi et al., 2012).

While most of the focus on personality problems has been on antisocial personality disorder and characteristics, research has also found that Borderline Personality Disorder and Borderline Personality Organization (BPO) as linked to IPV perpetration, with BPO representing a pattern of traits typified by unstable emotion regulation, an unstable sense of self with intolerance of abandonment, intense anger, and a tendency to have unstable relationships in general (Gunderson, 1984; Dutton & Starzomski, 1993). Dutton found that in a sample of partner-violent men, self-reported BPO was related to their female partners' report of both psychological and physical aggression (Dutton & Starzomski, 1993; Dutton, 1996). Since then, while there are very few studies of other Personality Disorder diagnoses as they predict IPV, there is myriad evidence that characteristics associated with such personality disturbances (e.g., emotion regulation problems, jealousy, attachment insecurity), predict IPV in samples of partner violent individuals, although most of these studies are conducted in clinic samples that are not representative of all men and women involved in abusive relationships (Ehrensaft et al., 2006). For example, Edwards and his colleagues (2003) found that both APD and

Borderline Personality Disorder were correlated with physical aggression in intimate relationships in a sample of men convicted of nonviolent crimes. In one of the few studies that used a large prospective study with a community sample, Ehrensaft and colleagues (2006) found that both Cluster A symptoms (“odd/eccentric” symptoms such as mistrust of others, suspiciousness, and distorted cognitions”) as well as Cluster B Symptoms (“dramatic/erratic” symptoms such as emotion dysregulation, anger, and aggression) in one’s early 20’s predicted later perpetration of IPV.

In a related vein, there has been some research to support the notion that these proximal personality and emotional factors are the pathway by which adverse developmental experiences predict IPV perpetration in adulthood (Dutton, VanGinkel, & Ktazomski, 1995; Simons et al., 1995; Capaldi et al., 2012; White & Widom, 2003). One longitudinal study, for example, demonstrated that the link between harsh physical discipline and IPV perpetration was partially mediated by adolescent and young adult problem behaviors (Swinford et al., 2000). Similarly, Ehrensaft and colleagues (2004) found that the relationship between childhood adversity and intimate partner violence was mediated by symptoms of personality disturbance. Similarly, Murphy & Blumenthal (2000) found that in women, interpersonal problems with dominance mediated the relationship between violence in one’s family of origin and perpetration of physical aggression toward a relationship partner.

Other individual emotional factors have also been studied as risk factors for IPV perpetration, such as emotional dysregulation, anger, hostility, attachment insecurity, and jealousy, all factors that can be components of personality disturbance, but which can also occur independently. Anger has received much attention in the partner violence field.

Reviews of empirical studies and meta analyses consistently find that anger and hostility have moderate associations with IPV perpetration (Murphy & Eckhardt, 2005; Schumacher et al., 2001; Norlander & Eckhardt, 2005; Eckhardt, Barbour, & Stuart, 1997). For example, Norlander and Eckhardt (2005) found that using both observational and self-report measures, partner-violent men reported more anger and hostility than those who were nonviolent. However, it should also be noted that there are several limitations to the studies of IPV and anger, including lack of established definition and measurement of anger (Eckhardt & Murphy, 2005).

Beyond anger, depression has also been associated with increased risk of IPV, although there have been fewer studies than with anger/hostility, with some findings that increased depressive symptoms are found in IPV perpetrators than in individuals in the general population (Murphy, Meyer, & O’Leary, 1993; Hamberger & Hastings, 1991; Schumacher et al., 2001). However, the lack of strong support for this association may be in part due moderation by gender, as some studies report an association between depression and IPV only for women (Capaldi & Crosby, 1997; Kim et al., 2008).

These individual components, however, may be only one piece of the picture of how emotional factors relate to IPV perpetration. It has been suggested that due to the high overlap between negative emotions such as anger, hostility, depression, jealousy, and anxiety, the distinction between them as they predict IPV may be somewhat arbitrary, and an overall experience of “negative affectivity” may better reflect the emotional complexities that predict IPV perpetration (Murphy & Eckhardt, 2005; Watson & Clark, 1992). Indeed, one prospective study found that in women but not men, at age 21, negative emotionality predicted IPV perpetration at age 24 (Herrenkohl et al. 2004).

Alcohol and substance use are also well-established predictors of IPV perpetration (Barnett et al., 2005; Eckhardt & Murphy, 2005), although their relationship to IPV is not directly causal (Capaldi et al., 2012; Foran & O’Leary, 2008). While its exact role in the prediction of IPV has yet to be determined, alcohol use has been linked to IPV perpetration in both genders (Foran & O’Leary 2008). Two meta analyses have demonstrated that the effect sizes for the impact of alcohol use on IPV perpetration are significant and range from small to moderate (Foran & O’Leary, 2008; Stith, Smith, Penn, Ward, & Tritt, 2004). Clinical samples of partner violent men show high rates of alcohol problems (Eckhardt & Murphy, 2005). Similarly, clinical samples of individuals in treatment for alcohol problems show prevalence rates of IPV that are four to six times higher than in the general population in the year prior to treatment (O’Farrell & Murphy, 1995; O’Farrell, Murphy, Stephan, Fals-Stewart & Murphy, 2004). There has been some disagreement, however, about whether comparisons between clinical and nonclinical samples may overestimate the role of alcohol in predicting IPV. Community samples do show an association between alcohol and IPV. For example, Kantor and Straus (1987) used a nationally representative sample and found that mens’ reports of wife assault were three times higher in those who drank regularly than in those who did not drink. More recently, White and Chen (2002) used a community sample to examine the effects of problem drinking on IPV in both men and women. After controlling for overlapping risk factors such as age, marital status, education, and history of witnessing IPV, for both men and women, problematic drinking was a risk factor for both IPV perpetration and victimization. Despite the support in community samples for this effect, one recent meta-analysis found that the magnitude of the effect was stronger in clinical versus community

samples (Foran & O’Leary, 2008). Thus, it is clear that while the size of the effect may be small in representative samples, alcohol is an important predictor to consider when conducting partner violence research.

Although less frequently studied, use of drugs other than alcohol also plays a role in IPV perpetration (Capaldi et al., 2012; Feingold, Kerr, & Capaldi, 2008; Moore et al., 2008; Whitaker, Le & Niolon, 2010). For example, Feingold, Kerr & Capaldi (2008) conducted a longitudinal study of men in the community. They found that after controlling for SES and antisocial behavior, meeting at least one criterion of dependence for a number of different substances was associated with increased risk of perpetration of IPV. This was the case especially for marijuana and hallucinogens, with smaller associations regarding alcohol. Indeed, a recent meta-analysis of 96 studies found an average effect size of $d = .27$ regarding the relationship between drug-related problems and physical and psychological aggression between intimate partners (Moore et al., 2008), especially regarding Cocaine use ($d = .39$). This meta analysis also found that effect sizes were similar for both genders, but larger for married/cohabitating couples and Black participants. Taken together, the research on psychological and behavioral factors suggests that these factors often co-occur in partner-violent individuals and that none of them is the sole cause of IPV perpetration; however, they play an important role, as they are more proximal and could be the mediators by which other developmental factors such as a history of family violence lead to later perpetration of IPV.

Relational predictors. Ultimately, the responsibility for the cessation of abuse lies with the person committing the violence. However, IPV occurs as part of a dyadic relationship, and thus factors that are related to the dyad and the relationship itself are

important in order to fully understand the factors that lead to IPV. To date, key relational factors to date have included jealousy, poor communication skills, attachment insecurity, and relationship commitment (Barnett et al., 2005).

Attachment insecurity refers to “any set of psychological factors that have anxiety or fear as a component of intimacy”. Thus, AI encompasses “all fearful attachment patterns as an attachment insecurity spectrum.” (Dutton & White, 2012, p. 476). Those who support the attachment model of IPV have argued that AI is a proximal factor linking developmental factors such as child maltreatment and parental rejection to IPV. They believe that attachment insecurity influences IPV through the mechanisms of decreased emotion regulation and faulty appraisal of threats, leading to problems in relationships such as dependence and fear of abandonment (Dutton & White, 2012; Holtzworth-Munroe, Stuart, & Hutchinson, 1997; Murphy et al., 1994).

Supporting this theory, Dutton (1994) found in a sample of partner-abusive men and matched controls that paternal rejection rather than physical child abuse was the main contributing factor to a discriminant function of IPV perpetration. Since Hazan and Shaver’s (1987) seminal study that adult attachment styles mirrored those of infants, several researchers have examined adult attachment as it relates to perpetration of IPV, lending further support to the role of attachment insecurity. For example, Babcock, Jacobson, & Gottman (2000) compared nonviolent unhappily married husbands to violent husbands and found differences in their classification on the Adult Attachment Inventory (AAI), with violent husbands more likely to be classified as insecure. In a similar study, Holtzworth-Munroe and colleagues (1997), using multiple measurements, found that violent men were more likely to have insecure, preoccupied and disorganized attachment

as well as more jealousy and less trust in the marriage. Additionally, the attachment insecurity and IPV link have been replicated in samples other-than partner violent men, such as partner violent women and college students (Bookwala & Zdaniuk, 1998; Goldenson, Geffner, Foster, & Clipson, 2007).

Other relational risk factors showing very robust prediction of IPV in both men and women are relationship conflict and relationship dissatisfaction (Capaldi et al., 2012). Evidence suggests that IPV occurs in situations when there is considerable conflict, disagreement, and argument (Eckhardt & Murphy, 2005; Cascardi & Vivian, 1995; Schumacher et al., 2001). Schumacher (2001) conducted a meta-analysis of studies of male to female intimate partner violence and found that relationship discord, conflict, or dissatisfaction was related to IPV in every study that included it as a predictor (e.g., Murphy & O'Leary, 1989; O'Leary et al., 1994, Pan et al., 1994; Leonard & Senchak, 1993; Sagrestano et al., 1999). However, the effect sizes of this association ranged from small to large (Schumacher et al., 2001). It is also important to note that this relationship may be bidirectional, such that IPV may also foster conflict and relationship dissatisfaction in couples (Murphy et al. 2005; O'Leary, Malone & Tyree, 1994). Indeed, Murphy and O'Leary (1989) found that among couples without a history of physical IPV, while marital distress was correlated with physical aggression cross-sectionally, it did not predict physical IPV over time.

Lastly, it has been suggested that individuals who are violent toward their partners use violence in part because they lack the communication skills to resolve conflicts in a healthy manner (Holtzworth-Munroe et al., 1997). While evidence supporting the role of assertiveness is equivocal (Ali & Naylor, 2013), the research has reliably demonstrated

that individuals who commit IPV demonstrate poorer communication skills than those who are not partner-violent when asked to interact with each-other in the laboratory (Schumacher, 2001; Berns et al., 1999; Burman, John and Margolin (1992 Holtzworth-Munroe, Smutzler, & Stuart, 1998). For example, Berns et al. (1999) videotaped interactions of 47 couples discussing a problem in their marriage and found that partner-violent men (and their female partners) showed significantly more negative communication as well as less positive communication than both nonviolent but distressed couples and nondistressed couples. In general, however, the available evidence suggests that partner-violent individuals exhibit a cyclical pattern of mutual contempt, negativity, disgust, and hostility, thus leading to a spiral of negative escalating conflict behaviors involving both partners (Eckhardt & Murphy, 2005; Jacobson et al., 1994). Indeed, the available evidence suggests that physical and psychological aggression in relationships tend to be reciprocal (Archer, 2000). It is also worth noting here that these negative patterns of communication may not apply to all individuals who abuse their partners. Johnson (1995) draws a distinction between common couple violence characterized by occasional outbursts that may be mutually violent, and more extreme violence called intimate terrorism, characterized by patriarchal control of one's partner. These negative communication patterns may apply only to the former.

Introduction to Cyberaggression.

The aforementioned demographic, psychological/behavioral, and relational factors are important to consider when conducting partner violence research, as they illustrate the multifactorial nature of the perpetration of IPV in both genders. However, in recent years, the role of information communication technology is also an important

factor with regard to partner violence as well as other types of aggression. Information communication technologies (ICTs) broadly refer to the “complex and heterogeneous set of goods, applications and services used for producing, distributing, processing and transmitting information” (Marcelle, 2000, p. 1). ICTs are therefore technological tools that aid in receiving information and communicating with others. ICTs have become integral to the way in which individuals, businesses, and societies interact (Brown, 2012; Grant, 2012). What’s more, since the birth of ICTs during the Industrial Revolution, their rates of growth and rates of adoption by the public have exponentially increased and are not likely to slow down (Grant, 2012; Spitzberg & Hoobler, 2002).

One important area of growth are what are sometimes referred to as the “new” or “emerging” ICTs, which are digital technologies such as the internet (including social media), multimedia, and wireless communication technologies. These technologies are pervasive in the United States and much of the world, are likely to be socially relevant in the next decade, and their use is growing among young people (Dimond, Fiesler, & Bruckman, 2011; Stahl, 2011; Lenhart & Madden, 2007). With regard to cellular telephone use, for example, 89% of adults in the US own a cellular telephone, three quarters of smart-phone users (73%) send and receive text messages, and 42% of cellular telephone subscribers have a “smartphone” with access to the internet (CTIA, 2011; Davie, 2012; Smith, 2011). Smartphone adoption is only estimated to increase (Davie, 2012). Similarly, personal computer and internet use are also very high and growing. There is at least one computer per US resident with 77% of American Households owning a computer in 2010 (U.S. Economics and Statistics Administration, 2011; Roberts & Andrews, 2012). Internet use is even higher. Seventy-eight percent of

American adults report they use the internet with the average American spending 35 hours on the internet each month (Zickuhr & Smith, 2012). Young people especially are high internet users, with 96% of college students reporting they use the internet at least once per week (Finn, 2004).

Individuals in the US use these new digital technologies including the internet for a variety of different functions: searching for information, watching media, using email, shopping and banking, and contributing to their own web content through blogs, other content sites, and social networking (Brown & Bagley, 2012). Social networking websites (SNSs) such as Facebook, LinkedIn and Twitter, are by far the “fastest developing personal networking tool” and have become the largest sites on the internet today, as SNSs account for over 22% of all time spent online (Brown & Bagley, 2012; Lin & Lu, 2011, p 1152; Sauerbier, 2012). Estimates are that between 59% and 75% of internet users utilize at least one SNS, with Facebook by far the most common (92% of SNS users) (Hampton, Goulet, Rainie, & Purcell, 2011; Social Networking Fact Sheet, 2014). Just as with the internet in general, SNS use is higher among young people, with 83% of internet users between the ages of 18 and 29 and 70% of internet users between 30 and 49 years old maintaining a social media profile online as of 2011 (Madden & Zickuhr, 2011).

With the development of new ICTs, individuals may now communicate through new means, including text messages, e-mails, public SNS postings, private SNS messages, blog comments, and other chat and video applications such as Skype or Google Talk. Given the quick spread of these newer ICTs, it is no surprise that research has begun to focus on their role in interpersonal communication. ICTs provide a “new

milieu for social interaction” (Draucker & Martsolf, 2010). Information Communication Technologies have been shown to increase social capital, facilitate communication among family and friends, and increase sharing of information about the activities, interests, and opinions of others that would not readily be accessible in person (Hasebrink et al., 2009; Ellison et al., 2007). This increased ease of communication can bring a stronger sense of safety and connectedness with others (David-Ferdon & Hertz, 2007). What’s more, use of ICTs such as Social Networking Sites, have been associated with having more friends, as well as more close friends (Hampton, Goulet, Rainie, & Purcell, 2011).

ICTs also impact romantic relationships (Wilson, Gosling, & Graham, 2012; Burke et al., 2011; Carpenter & Spottswood, 2013). For example, adolescents commonly use ICTs for daily communication with their partners (Stonard et al., in press). Furthermore, a recent study by the PEW foundation found that 27% of all internet users and 45% of internet users between 18 – 29 years of age who were married or in a committed relationship reported that the internet (e.g., smartphone and computer internet use) had an impact on their relationship, with most of these individuals reporting that the impact was positive (Lenhart & Duggan, 2014). There are several benefits of ICTs to intimate relationships. Research suggests that electronic communication can increase emotional intimacy (Cooper & Sportolari, 1997). Similarly, greater use of ICTs including cell phone, text, and SNS interactions between romantic partners has been associated with more love and commitment in the relationship, lower levels of relationship uncertainty, and greater relationship satisfaction (Jin & Pena, 2010; Morey et al., 2013; McGlynn, 2006).

Use of ICTs, particularly social media, can also negatively impact relationship functioning. While most individuals who report that the internet impacted their relationships note that the impact was positive, 20% of those individuals said the impact was mostly negative and 4% said it was both good and bad (Lenhart & Duggan, 2014). SNS use in particular has been linked to privacy concerns, relationship jealousy particularly among women and those with anxious attachment, and the inability to heal after termination of a romantic relationship (Boyd & Ellison, 2007; Chaulk & Jones, 2011; Muscanell et al., 2013; Marshall, Bejanyan, Castro, & Lee, 2013; Muise, Christofides & Desmarais, 2009; Marshall, 2012). Overall, the use of ICTs including SNSs tends to have many benefits but also are related to negative emotions in relationships, especially immediately after termination of an intimate relationship.

The rapid growth and widespread use of new ICTs has created a new environment for social interactions within many types of interpersonal relationships, including among intimate partners. Despite the benefits ICTs offer, there are dangers associated with the use of new technologies, as they create new forms and/or methods of perpetrating and being victim to interpersonal aggression, such as bullying, stalking, harassment, and intimate partner abuse. With the advent of the newer ICTs and the recognition of their dangers, therefore, cyberaggression has recently emerged as topic of investigation.

Given that cyberaggression is a new area of research, there is considerable discrepancy and confusion regarding the different definitions and terms involved. It is widely noted that there is a need for more uniform definitions and validated measures (Kowalski et al., 2014; Langos, 2012; Modecki, Barber, & Vernon, 2013; Melander, 2010; Zalaquett & Chatters, 2014). Broadly however, cyberaggression refers to “the use

of newer communication technologies such as social networking websites (e.g., Facebook), and text messaging to facilitate repeated harassing behavior by an individual or group with the intention of harming others” (Melander, 2010, p. 16; Juvonen & Gross, 2008; Sheridan & Grant, 2007; Spitzberg & Hooper, 2002). Within this definition, when the behavior occurs willfully, repeatedly, with a power imbalance, and with intent to harm, it is referred to as cyberbullying (Langos, 2012; Mishna et al., 2011). The term cyberbullying is often associated with younger individuals such as children or adolescents although it may occasionally refer to cyberaggression between young adults such as college students (Kraft & Wang, 2010; Melander, 2010b). In adults, types of cyberaggression include cyberstalking (Drebing et al., 2014), cyberharassment (Melander, 2010), and “cyber psychological abuse” (Leisring, 2014). There is often considerable overlap between definitions in each of these terms (Melander, 2010). As there is a very small body of research involving cyber abuse specifically between intimate partners, the literature review for the present study discusses cyberaggression broadly, then narrows to discuss the few studies regarding cyber abuse between intimate partners.

Runions (2013) and others have noted the ways in which cyberaggression in its various forms is different from in-person aggression. These differences have even led some researchers to suggest that the internet medium may promote cyberaggression (Finn, 2004). For one thing, cyberaggression lacks the social cues that exist during more traditional communications such as facial expressions, body posture, and voice tone (Dehue, Bolman, & Vollnick, 2008; Kowalski et al., 2014; Melander, 2010b; Runions, 2013). For example, an individual who sends a threatening text or e-mail communication

cannot see or hear the victim and the victim cannot see or hear the tone of voice of the sender. Thus, the sender may not immediately see the emotional response of the victim or know whether the intent of the message was communicated correctly (Dehue et al., 2008; Runions, 2013). The lack of cues may also lead to individuals being more likely to initially perpetrate or retaliate aggressive behaviors because they are less inhibited, as individuals generally feel more secure and safe saying things electronically that they would not otherwise express in face-to-face communication (Li, 2006; Melander, 2010; Hinduja & Patchin, 2008). Furthermore, the nature of the internet may increase the potential for deception (Meloy, 1998; Menard & Pincus, 2012). Thus, it would be easier, for example, for a perpetrator to cause harm by pretending to be someone he/she is not in order to communicate with, or about, the victim, or pretend to be the victim or create false communications or impressions of communications from the victim.

In addition, cyberaggression is quick, easy, and portable, allowing for continuous contact between individuals (Melander, 2010; Zweig et al., 2013; Runions, 2013). Thus, access to victims can occur immediately and at any time regardless of the physical distance between the individuals, creating more of an opportunity for abusive behaviors on impulse, and possibly creating more continuous or more extensive vulnerability in victims (Kowalski & Limber, 2007). What's more, messages and other acts that can be harassing are not always private; there is increased opportunity in cyberaggression for the harmful act to be public or easily seen by one's social network (Slonje & Smith, 2008; Zweig et al., 2013). For example, group texts and photo messages can be sent to large numbers of people at once, or humiliating messages can be posted to one's social media profile for one's whole network of friends, family, and colleagues to see. This type of

broad and immediate access to a victim's social network is virtually impossible with traditional forms of communication. (Runions, 2013).

These unique aspects of cyberaggression suggest a need to study cyberaggression independently of in-person aggression. It remains unclear whether cyberaggression is a new construct or whether new ICTs simply provide the medium by which to perpetrate existing forms of aggression, perhaps even exacerbating existing aggression (Melander, 2010b). This debate is common to research across the different types of cyberaggression, such as cyberstalking (e.g., Sheridan & Grant, 2007), and cyberbullying (e.g., Drebing et al., 2014.) Regardless of whether cyberaggression is a new type of aggression or a new form of existing aggression, its unique features suggest the need for further research into its prevalence, consequences, and predictors.

Cyberbullying.

By far, the most research and public attention in cyberaggression to date relates to cyberbullying in school-aged children, adolescents, and young adults. Due to the multiple definitions of cyberbullying, it is difficult to estimate the prevalence of cyberbullying victimization and perpetration (Doane, Pearson, & Kelley, 2014). Depending on the sample, time-frame of reference, and definition of cyberbullying, estimates of cyberbullying victimization in youth and adolescents generally range from 20% to 40% (Tokunaga, 2010), with some estimates even higher, up to 72% (Juvonen & Gross, 2008) . Estimates of perpetration in adolescents are similarly variable, ranging from 5 – 35% (Cappadocia et al., 2013; Kowalski & Limber, 2007). Among young adults, recent studies have found slightly lower estimates than in children: between 10% and 29% of college students have been cyberbullied (Smith & Yoon, 2013; Hinduja &

Patchin, 2010; Zalaquett & Chatters, 2014). Perpetration rates range from 8% to 52%, again, depending on the sample and definition (Doane et al., 2014; Dilmac, 2009; Gibb & Devereux, 2014). There is also considerable overlap between cyberbullying perpetration and victimization, as between 3% and 10% of adolescents report both (Cappadocia et al., 2013). Cyberbullying is associated with negative consequences that can be quite harmful for both victims and perpetrators. Both cyberbullies and those who have been victimized experience negative mental health outcomes, such as emotional distress, depressive symptoms, suicidal ideation and suicidal attempts (Cappadocia et al., 2013; Ybarra, Mitchell, Wolak, & Finkelhor, 2006; Hinduja & Patchin, 2010; Hinduja & Patchin, 2008; Bonanno & Hymel, 2013; Modecki et al., 2013, ABC News, 2007), What's more, cyberbullying has been shown to have such negative effects over and above the effects of traditional bullying, sometimes causing even more emotional harm than traditional bullying (Gilroy, 2013; Blais, 2008).

Due to the prevalence and negative effects of cyberbullying, its predictors have been studied in the hopes of informing prevention and intervention efforts. Among demographic variables, gender, age, and race/ethnicity have been studied with relation to cyberbullying and these studies have produced mixed findings, making conclusions very difficult to form. With regard to gender, there are findings in support of no relation between gender and cyberbullying perpetration (Hinduja & Patchin, 2008), and evidence that both males (Slonje & Smith, 2008) and females (Kowalski & Limber, 2007) perpetrate more cyberbullying. There is mixed support for whether there are differences between racial/ethnic groups, although not all studies of cyberbullying examine the behavior by racial/ethnic group membership. Those that have examined cyberbullying by

race/ethnicity have either found that Caucasian individuals perpetrate more cyberaggression (Ybarra & Mitchell, 2004) or have failed to find any differences (Hinduja & Patchin, 2008). Similarly, while traditional bullying research suggests that bullying behavior declines with age, studies have found that cyberbullying perpetration is associated with being older in adolescents (Smith et al., 2008), but younger in samples of college students (Gibb & Devereux: 2014; Kraft & Wang, 2010), or has failed to find any relationship between age and cyberbullying (Slonje & Smith, 2008). These studies have, for the most part, been correlational, and longitudinal studies would be needed to further parse out any relation between age and cyberbullying perpetration.

A few studies have also looked at psychosocial variables as they correlate and predict cyberbullying behavior, both in adolescents and college students. Cross-sectional studies have found that increased cyberbullying perpetration is associated with mental health problems such as depression, phobic anxiety, suicidal ideation, substance use, and paranoia, (Schenk et al., 2013; Kowalski et al., 2014; Hinduja & Patchin, 2008). Increased cyberbullying perpetration is also associated with negative emotional states such as anger, hostility, and decreased self-esteem (Kowalski et al., 2014; Schenk et al., 2013; Modecki et al., 2013).

Of the psychosocial variables, cyberbullying is most often associated with other types of interpersonal aggression. Antisocial behavior, problem behavior, and psychopathy have all been positively correlated with cyberbullying perpetration with moderate effect sizes overall, and this association has been demonstrated in longitudinal as well as cross-sectional studies (Hinduja & Patchin, 2008; Kowalski et al., 2014; Modecki et al., 2013; Sticca et al., 2012) In the same vein, several studies have found an

association between cyber and traditional bullying in both cross-sectional and longitudinal studies (Hinduja & Patchin, 2008; Juvonen & Gross, 2008; Kowalski et al., 2014; Smith & Slonje, 2010; Sticca et al., 2013). Additionally, those who perpetrate cyberbullying behavior are also likely to engage in antisocial, illegal and rule-breaking behavior (Hinduja & Patchin, 2008; Schenk et al., 2013; Sticca et al., 2013). Last, cyberbullying may occur in the context of adolescent dating violence, as teenagers who are in an intimate relationship (or who have previously been in a relationship) may also engage in monitoring or harassing behavior through ICTs (Stonard et al., in press). In fact, some adolescents report that romantic breakups resulted in feelings of rejection that they report prompted cyberbullying behaviors (Hoff & Mitchell, 2009). Consistent with this finding, Hinduja & Patchin (2011) discovered that those who perpetrated cyberbullying were about four times more likely to report cyber dating abuse perpetration.

Last, unlike in-person bullying, cyberbullying perpetration has also been associated with several variables related to the use of ICTs, including more frequent internet use (Hinduja & Patchin, 2008; Erdur-Baker, 2010), more online communication with others (Sticca et al., 2013), more computer proficiency (Hinduja & Patchin, 2008), and risky internet usage (Erdur-Baker, 2010; Kowalski et al., 2014). The effect sizes, however, have been small to moderate (Kowalski et al., 2014). Overall, despite the differences in methodologies, it is clear that cyberbullying does occur frequently, causes harm to young people, and is associated with several important variables, including traditional types of aggression such as in-person bullying and teen dating violence.

Cyberstalking.

While the bulk of the literature in the cyberaggression field involves cyberbullying, researchers have recently begun to study other types of cyberaggression such as cyberstalking in adults (Alexy et al., 2005; Spitzberg & Hooper, 2002). Cyberstalking is defined as “use of the Internet, e-mail and other electronic communication devices to stalk another person (Violence Against Women Office, 2001, p 1) with some definitions adding the component of requiring that the act make a reasonable person afraid for his/her safety (U.S. Department of Justice, 2000; Fisher, Cullen, & Turner, 2000). More specifically, components identified thus far have included: “seeking and compiling information the victim in order to harass, threaten, and intimidate the victim online or offline, repeated unsolicited emailing and instant messaging, electronic sabotage such as spamming and sending viruses to the target; identity theft; subscribing the victim to services; purchasing goods and services in the victim’s name; impersonating another online; sending or posting hostile material, misinformation and false messages, and tricking other internet users into harassing a victim” (Sheridan & Grant, 2007, p. 627; Southworth et al., 2007).

Similar to cyberbullying, there are no reliable data on prevalence rates of cyberstalking and estimates vary depending on cyberstalking is defined (Parsons-Pollard & Moriarty, 2009; Alexy et al., 2005; Finn, 2004; Reynolds, Henson, & Fisher, 2012; Drebing et al., 2014). The only National-level study on cyberstalking victimization shows that in adults, 26.1% of the victims of traditional stalking also reported cyberstalking victimization (Baum et al., 2009). Most other estimates come from college student samples of victims of cyberstalking. These samples place the range of victimization

estimates from 1% to 31.5% (Reyns et al., 2012; Finn, 2004; Spitzberg & Hooper, 2002; Sheridan & Grant, 2007), with a few studies finding rates of up to 82% when very broad definitions are used (Reyns et al., 2012; Drebing et al., 2014). While these estimates vary widely, they do suggest that cyberstalking occurs more than traditional stalking, which is reported in 2-13% of males and 8-32% of females (Spitzberg & Cupach, 2007; Strawhun et al., 2013; Reyns et al., 2012). There is very little existing data on rates of cyberstalking perpetration, with only one study showing that 4.9% of a very large (n = 974) college students reporting perpetration of cyberstalking when it was defined as ever having contacted, harassed, made unwanted sexual advances toward, threatened to harm someone online after they told you to stop, or having attempted identity fraud. Like cyberbullying, cyberstalking behaviors are likely to increase as individuals use new information communication technologies more (Alexy et al., 2005; Finn, 2004; Parsons-Pollard & Moriarty, 2009). Cyberstalking using SNSs may be particularly high. For example, Strawhun and her colleagues (2013) found that 84% of college students surveyed had friended another individual on a social networking website after that individual told the respondent to cease doing so. A related concept, technology-based sexual coercion, is also reportedly high in college students, with 1/5 of college students reporting that they have engaged in such behavior, for example, coercing someone online to send them a nude photo (Thompson et al., 2013).

Similar to cyberbullying, cyberstalking behaviors can be damaging to victims, and can be just as emotionally upsetting as traditional stalking (Finn, 2004; Parsons-Pollard & Moriarty, 2009). Those who report being a victim of cyberstalking commonly report negative emotional and physical consequences such as nightmares and other sleep

disturbances, anxiety, a sense of helplessness and distrust in others, fear for one's safety, and poorer overall well-being (Drebing et al., 2014; National Center for Victims of Crime, 2007). In some cases, the consequences of cyberstalking may be deadly, as there are several anecdotal reports of cyberstalking victimization escalating to bodily harm or homicide (Kennedy, 2000; Lamberg, 2002).

In contrast to the cyberbullying research, there is limited information on who perpetrates cyberstalking and other types of cyberaggression between adults. The available evidence suggests that predictors of cyberstalking behavior are overlapping with those that predict cyberbullying and traditional IPV perpetration. Just as in cyberbullying, increased internet use is related to greater perpetration of cyberstalking (Strawhun et al., 2013). Regarding demographic factors, just as with cyberbullying, there are discrepancies regarding whether males or females perpetrate more cyberstalking, with findings in both directions (Reyns et al., 2012; Strawhun et al. 2013; D'Ovidio, Robert & Doyle, 2003). While the research is preliminary, studies that have examined other demographic characteristics as they predict cyberstalking between adults have failed to find any significant differences in cyberstalking, with the exception that those who did not identify as heterosexual were more likely to perpetrate as well as be victim to cyberstalking (Reyns et al., 2012).

Regarding psychosocial factors that predict cyberstalking, despite the evidence that antisocial behavior and alcohol abuse predict *cyberbullying*, the initial research has failed to examine antisocial behavior as it predicts cyberstalking. However, there are associations between cyberstalking perpetration and the perpetration of other types of aggressive acts, such as in-person stalking, physical and sexual relationship violence, and

psychological aggression, (Strawhun et al., 2013; Sheridan & Grant, 2007; Other studies have shown that victimization and perpetration of cyberstalking are correlated, although the direction of this relation is unclear (Menard & Pincus, 2007; Strawhun et al., 2013).

Also similar to the IPV and cyberbullying literature, emotional and personality dysregulation are related to cyberstalking perpetration. For example, cyberstalkers are more likely than traditional stalkers to threaten to hurt themselves, suggesting that histrionic personality styles can predict cyberstalking (Alexy et al., 2005). Emotional dysregulation as it relates to cyberstalking perpetration may differ by gender of the perpetrator, however. Strawhun and her colleagues (2013), examined whether jealousy, relationship violence, attachment style, and anger predicted cyberstalking. They found that for women, more interpersonal jealousy and anger uniquely and significantly predicted cyberstalking perpetration. For men, however, fearful attachment style (but not dismissive, secure, or preoccupied attachment styles), and physical aggression in intimate relationships uniquely predicted cyberaggression above the other predictors. Similarly, Menard & Pincus (2007) conducted analyses of predictors of cyberstalking perpetration in college students separately by gender and found that for men, narcissistic vulnerability predicted cyberstalking, but for women, insecure attachment and alcohol expectancies predicted cyberstalking perpetration. These findings imply that the motivations for engaging in cyberstalking may be different for men and women (Strawhun et al., 2013), particularly with regard to relationship jealousy. Lastly, developmental factors have been shown to predict cyberstalking perpetration. Childhood trauma, particularly reporting a history of child sexual abuse, has been associated with increased cyberaggression perpetration in college students, (Menard & Pincus, 2012).

Overall, it is clear from these initial studies that there are several overlapping factors in these three variables: cyberstalking in adults, cyberbullying in adolescents and young people, and IPV in general, such as a history of childhood maltreatment, other antisocial behaviors, and dysregulated emotions. It is also important to note, however, that with regard to both cyberstalking and cyberbullying, that the research primarily has used samples of college students, thus limiting the generalizability of findings (e.g., Alexy et al., 2005; Menard & Pincus, 2012; Reyns et al., 2012; Strawhun et al., 2013).

Cyber Abuse Between Intimate Partners

The literature on ICTs and relationships, and the various types of cyberaggression such as cyberbullying and cyberstalking point to a clear need to examine the nature and correlates of cyberaggression specifically within intimate relationships. For example, there is evidence that cyberbullying may occur in the context of adolescent dating violence, as young people who were cyberbullied were approximately three times more likely to experience teen dating violence than those who were not victims of cyberbullying (Hinduja & Patchin, 2011). Similarly, Zweig and colleagues (2013) found that teenagers who perpetrated cyberbullying were almost four times as likely to report perpetrating dating abuse. In a similar vein, in the stalking literature, there is evidence that both traditional stalking and cyberstalking often occur in the context of former intimate partner relationships (Alexy et al., 2005; Drebing et al., 2014; Spitzberg & Cupach, 2006; Sheridan & Grant, 2007; Southworth, 2007; WHOA, 2009). These connections suggest that intimate partners are an important population to study with regard to cyber abuse. Some researchers (e.g., Strawhun et al., 2013; Southworth et al.,

2007) have made a call for further examining cyber abuse between intimate partners as a valuable avenue of future research.

Some research has highlighted the extent of the problem of cyber abuse in dating relationships among adolescents and adults, with most of these studies examining the prevalence of these behaviors in college students. Finn (2004) examined cyber abuse in college students and split victimization experiences by the relationship with the victim. He found that while the greatest cyberharassment came from strangers, 25.4% of college students reported getting repeated messages via email or instant messaging from a “significant other” that were threatening, insulting, or harassing. Reyns et al., (2012) found that 17.4% of an undergraduate sample reported cyberstalking by an intimate partner, 16% reported internet harassment, 21.7 reported unwanted contact, 9.2 reported unwanted sexual advances online, and 18.4% reported threats of violence. More recent estimates suggest that the prevalence of cyber abuse between college student intimate partners may be even higher. While they did not measure perpetration, Bennett and her colleagues (2011) found that three quarters of college students were victimized by at least one type of electronic dating aggression (behaviors that were hostile, intrusive, humiliating, or exclusive). Leisring and Giumetti (2014) found that 93% of college students reported perpetrating and being victimized by at least one form of minor cyber psychological abuse, with 12-13% reporting severe cyber psychological abuse in their intimate relationships.

Ways in which technology is used in partner abuse. Recognizing the need for a focus on cyber abuse specifically between intimate partners, there is a growing literature on the ways in which communication technologies are used to stalk, harass, or otherwise

abuse intimate current or former intimate partners specifically. Noting the anecdotal evidence that survivors report abuse via technology from domestic violence agencies, Southworth and her colleagues established the Safety Net Project at the National Network to End Domestic Violence (NNEDV) in order to educate victims of sexual and domestic violence, their advocates, and the public on the strategic use of technology to increase personal safety and privacy (Southworth, 2007). They were one of the first to examine the ways that information communication technology is related to IPV specifically with regard to intimate partner stalking (Safety Net, 2004). Based on anecdotes from victims and stories in the news, they noted that the ways intimate partners may use technology as part of stalking. Some of these ways included: reviewing telephone records, intercepting calls, using caller ID to locate victims in hiding, collecting location information from fax machines and TTY, converting cellular telephones into listening devices, using GPS or cellular devices to track their (ex)partners' location, using computer spyware and keystroke logging hardware to track computer activity, and using free Websites or paid information brokers online to obtain information about a victims' whereabouts, and using email and instant messages to threaten or impersonate survivors (Southworth et al., 2007; Tucker, Cremer, Fraser & Southworth, 2005).

The ways that ICTs are used in partner abuse were examined in two qualitative studies, both in college students. In the first study, Draucker and colleagues (2010) interviewed men and women between 18-21 years of age who experienced various forms of dating violence as adolescents and found that technology was used in the context of dating violence for eight purposes (1) establishing a relationship with a partner, (2) day-to-day [nonaggressive] communication with a partner, (3) arguing with a partner, (4)

monitoring or controlling the activities or whereabouts of a partner, (5) perpetrating emotional or verbal aggression against a partner, (6) seeking help during a violent episode, (7) limiting a partners' access to oneself, and (8) reconnecting with a partner after a break-up or violent episode. The participants reported using cell phones, text messages, social networking websites, and emails to do these tasks, with cell phones being the most frequently used technology. While all of the eight ways that technology was used were not inherently abusive (e.g., establishing a relationship with a partner online is not ipso facto abusive), this research highlights some of the ways technology is used in the context of adolescent dating violence and adds the component of social media, which was not addressed by Southworth and her colleagues (2007).

In a second study, Melander (2010) conducted focus groups with college students to examine the role of technology in the perpetration of college students' experiences of partner violence using Johnson's typology of violence as a theoretical framework. She found that study participants described a number of different psychologically abusive behaviors. Examples included: posting incriminating photos and videos, controlling and monitoring behaviors such as monitoring the other partners' location and activity via social media or phones, privacy violations (e.g., going online and changing the partners' mailing address to his own), and monitoring the social network of one's partner to isolate them. What's more, she found that just as in traditional forms of violence, intimate partner cyber abuse can be mutual. Lastly, her focus groups suggested two themes unique to online relationship aggression versus traditional violence: the abuse perpetrated online is quicker and easier than offline aggression, and it is also more public and thus has the potential for greater harm with regard to publically embarrassing a partner and

heightening their sense of vulnerability (Melander, 2010). The findings from these studies highlight and clarify that technology does play a role in the perpetration of partner abuse, especially with regard to emotional or psychological abuse.

In addition to the above studies on the ways technology relates to intimate partner aggression, one other study has examined how technology, particularly social media websites (e.g., Facebook) are involved in partner abuse. Lyndon and colleagues (2011) examined whether young adults monitored or harassed their ex-partners on Facebook and whether these individuals also perpetrated cyberstalking (“cyber-obsessional pursuit”) and engaged in traditional stalking. They found that college students did use Facebook for harassment of their ex-partners, and specifically did so by covert provocation (e.g., posting pictures or comments about the partner in a passive or ambiguous manner), public harassment (i.e., intentional behaviors to harass such as spreading false rumors or posting embarrassing photos of a partner) and/or venting (e.g., writing mean things about partner on their “wall”). They also found that individuals who reported stalking behavior did so online, offline, and on Facebook. It is unclear whether this study would generalize to individuals who are currently in an intimate relationship, as this study examined only ex-partners.

Overall, while the majority of the literature is in college and young adult samples, it is clear that there are a variety of ways that technology is used in the perpetration of cyber abuse between intimate partners, from more minor behaviors such as posting ambiguous messages on social media that are meant to provoke a partner, to more severe behaviors, such as monitoring or tracking a partner or ex-partner’s whereabouts using cell phones, the internet, or social media.

Correlates of cyber abuse among intimate partners. The above research provides some initial information on the prevalence and types of cyber abuse between intimate partners. Given the importance of studying cyber abuse in this population, there has been a small but growing body of research on the risk factors, predictors, and correlates of cyber abuse in intimate relationships. It is important to examine such risk factors and correlates of these behaviors for a few reasons. For one thing, research on the various types of cyberaggression suggests that it can be quite damaging (Hinduja & Patchin, 2007). Secondly, the research in other types of cyberaggression (e.g., cyberstalking) suggests that there may be some factors that differ in their relationship to cyber versus traditional forms of aggression (Menard & Pincus, 2012). Learning the risk factors associated with cyber abuse in intimate partners is important both for discovering who perpetrates this kind of abusive behavior, why it occurs, and how to develop the most effective intervention and prevention efforts to target and reduce these behaviors. Additionally, if cyber abuse is related to in-person IPV, interventions for partner abuse may need to target the online environment and address communications technology safety. In fact, there are programs designed to increase technology safety in victims, and social media sites (e.g., Facebook) have developed guides for intimate partner abuse survivors regarding the safe use of technology.

The most commonly examined correlates of cyber abuse specifically among intimate partners are traditional forms of partner abuse and gender. Regarding traditional abuse, studies in adolescent samples have generally found positive associations between cyber abuse and traditional types of partner abuse, both with regard to victimization and perpetration. For example, Cutbush and colleagues (2012) found that in adolescents,

electronic dating abuse perpetration, (defined as “the psychological perpetration among dating partners via the use of technology or electronic media, including: cell phones, texting, instant messaging, social networking sites, email, web chat, and blog”), in 9th graders was positively associated with all four forms of traditional dating violence that were measured: psychological, physical, and sexual dating violence perpetration and victimization, as well as stalking perpetration and victimization. Similarly, in a sample of 7th – 12th grade youth, Zweig and her colleagues (2013, p. 1063) found that cyber dating abuse victimization, defined as “control, harassment, stalking, and abuse of one’s dating partner via technology and social media” was positively associated with psychological abuse, sexual coercion, and physical violence victimization. In a more recent longitudinal study of adolescents, traditional and cyber dating abuse were positively associated with each other at baseline (Temple et al., 2016). Additionally, when the authors examined variables predicting cyber abuse victimization one year after the baseline assessment, they found that adolescents who reported being victimized by and perpetrating physical and cyber abuse at baseline were more likely to report cyber abuse victimization 1 year later when controlling for demographic variables and traditional psychological abuse (Temple et al., 2016). The only variable predicting cyber dating abuse perpetration one year after the initial assessment, after controlling for previous traditional physical and psychological abuse and demographic variables, however, was cyber dating abuse perpetration at baseline. The authors concluded that cyber dating abuse is reciprocal among adolescents and that cyber dating abuse co-occurs with other forms of dating abuse.

Research also suggests that cyber abuse is related to traditional forms of partner aggression among young adult populations (i.e., older than 18 yrs). For example, in a sample of young adult dating couples, Schnurr and colleagues (2012) found that individuals' own cyberaggression perpetration (as reported by their partners) was correlated to their self-reported perpetration of psychological but not physical intimate partner violence. Melander (2010) found positive correlations between cyber aggression perpetration and both sexual partner violence and physical and/or psychological intimate partner violence in college students. In a recent study of college students in intimate relationships, Leisring and Giumetti (2014) found that cyber psychological abuse perpetration and victimization were positively associated with self-reported emotional abuse, psychological aggression, and physical assault perpetration and victimization. Of note, they also found that minor cyber psychological abuse victimization and minor cyber psychological abuse perpetration were correlated with one another, suggesting that victimization and perpetration of minor cyber abuse co-occur.

Regarding research examining gender or sex differences in intimate partner cyber abuse, there have been equivocal findings, perhaps related in part to underdeveloped measures and differences in the samples. In a national sample of 9th graders, Cutbush and her colleagues (2010) found electronic dating aggression perpetration was associated with traditional dating violence as well as living in the South (compared to living in the West), and peer aggression, but not gender, race, or mother's educational level. However, using a study-specific measure of cyber dating abuse, Zweig and colleagues (2013) found that adolescent girls reported higher levels of both cyber abuse victimization and perpetration with their partners than boys. Also using a study-specific measure of cyber abuse

between partners, Melander (2010) found that females reported significantly more cyber abuse perpetration toward intimate partners than males. Using a different self-report measure of cyber abuse consisting of behaviors that were hostile (e.g., sending mean texts), intrusive (e.g., monitoring one's partner online), humiliating (e.g., posting embarrassing photos), and exclusive (e.g., blocking one's partner on social media), male college students have reported greater cyber abuse victimization by relationship partners; however, females anticipated more distress by these behaviors (Bennett et al., 2011; Kellerman et al., 2013;). Furthermore, when asked about motives for perpetrating cyber abuse, while males were more likely to report "humorous motives" for perpetrating cyber abuse, females were more likely to discuss jealousy and insecurity and self-protection/privacy issues as the primary reasons they engaged in these behaviors. Finally, Leisring and colleagues (2014) found that while there were no differences between males and females in victimization or perpetration for minor cyber psychological abuse, males reported greater victimization and perpetration of severe cyber psychological abuse behaviors, such as posting inappropriate pictures of one's partner online without their consent.

Beyond associations with traditional forms of partner abuse, there is very little research focusing on correlates and risk factors for cyber abuse among intimate partners, and virtually no studies of individuals older than young adults. As part of a larger study on factors that predict emerging adults' perpetration of traditional intimate partner violence, Schnurr and her colleagues (2012) found that among a sample of college students in heterosexual romantic relationships, cyber abuse perpetration was related to greater dominance, but was not related to age, length of the relationship, parent's average

income, or mental health problems as measured by the Brief Symptoms Inventory (BSI; Derogatis, 2000).

Kellerman and colleagues (2013) focused on the protective role of good emotion regulation skills and social support. In their sample of undergraduates, they found that social support from one's friends and good emotion regulation skills both served as moderators between one's family environment and electronic abuse victimization and perpetration among both friends and dating partners; however, this buffering effect was not found regarding electronic cyber dating abuse perpetration, suggesting that electronic abuse perpetration may be more impairing among relationship partners than among friends or acquaintances.

In an additional study, Melander (2010) examined correlates of cyber aggression perpetration (as measured by a study-specific cyberaggression measure) in a sample of 607 college students based on predictors expected by routine activities theory. She believed that proximity of the target and offender (i.e., housing location, athletic participation, and Greek involvement), exposure (accessibility of the target to the offender as measured by time spent online, number of text messages received, online dating history, and types of technology used), attractiveness and vulnerability of the target to the offender (as measured by history of physical and sexual abuse, childhood neglect, witnessing interparental violence, self-esteem, and drug and alcohol use), and guardianship (others joining in or intervening in an online argument with a partner) would all be related to cyberaggression perpetration. She found that more cyberaggression perpetration in romantic relationships was associated with: being female, non-white, greater participation in college athletics, spending more time online, receiving

more text messages, experiencing more sexual abuse in childhood, and more online guardianship (others intervening in public cyberaggression). She concluded that there is mixed support for the routine activities theory to explain cyberaggression between intimate partners and calls for both campus resources to address intimate partner cyberaggression and future research examining additional predictors and consequences of cyberaggression among intimate partners (Melander, 2010).

Overall, the research specific to cyber abuse between intimate partners suggests that cyber abuse is common, that it is related to more traditional forms of abuse, and that some of the same predictors of traditional IPV such as childhood abuse victimization and emotion regulation may also predict cyber abuse. However, no studies for the present investigation were found using samples of individuals beyond that of young adults. Furthermore, with the exception of Melander's (2010) investigation, which was based on routine activities theory, there is a paucity of research that includes factors drawn from multiple levels of influence (e.g., psychological, relational) as they may predict cyber abuse between intimate partners. O'Leary and colleagues (2007) note that examining how a wide range of variables from multiple theoretical perspectives serves as a worthwhile starting point to developing and testing comprehensive models of IPV. On the whole, we know even less about cyber abuse than about traditional partner abuse, and it stands to reason that the same line of investigation is warranted in learning more about cyber abuse. Thus the present study seeks to fill these gaps by examining the correlations and relative contribution of several sets of variables (e.g, psychological, developmental, relational) as they predict cyber intimate partner abuse in a sample of adult individuals. As a starting point, because prior research suggests a strong overlap among predictors of

both traditional and cyber abuse, the variables selected were informed by prior research on predictors of traditional intimate partner violence.

Present Study

The research on partner violence shows that there are several robust emotional and relational predictors of IPV. In recent years, cyberaggression has become an important focus of study, as newer ICTs have become integrated into aspects of individuals' lives and relationships. The research in the cyberaggression field is largely based on the cyberbullying or cyberstalking and does not study intimate partners specifically; however, there is a clear need to continue examining technology as it applies to intimate partners because technology may provide new ways to publically degrade, humiliate, stalk or otherwise abuse victims of IPV. The limited literature on cyber abuse between intimate partners indicates that it does occur in intimate relationships and has touched on the ways it is manifested, its predictors, and relation to traditional forms of partner abuse.

Initial research suggests that factors correlated with the different types of cyberaggression overlap with each other as well as with some of the predictors of traditional intimate partner violence (e.g., substance use, problems in emotion regulation and attachment and relationship jealousy). This is consistent with the general findings that risk factors for perpetration of other problematic behaviors overlap (Capaldi et al., 2012). The field, however, is nascent and there is a clear need for further research examining this form of partner abuse, particularly with regard to its risk factors and correlates. Issues that remain unanswered in the literature are how in-person and cyber abuse are related in adults and examining whether the risk factors for partner cyber abuse

are similar to those for in-person partner abuse. Additionally, the majority of the cyber abuse literature generally examines children, adolescents, or college students, limiting the generalizability of findings to younger populations.

Given these gaps in the literature, the present study examines the prevalence of cyber psychological abuse in a sample of adult internet users who report having been in an intimate relationship in the past 12 months. The present study builds on previous literature by examining the relationship between traditional forms of intimate partner abuse and cyber psychological abuse in a sample that includes adult individuals older than young adults. Additionally, the study examines a selected set of previously established risk factors for traditional intimate partner abuse in relation to cyber psychological abuse. A selected set of established predictors of traditional intimate partner violence provides a starting point of investigation into the risk factors for cyber psychological abuse. Findings from these research questions will be relevant for clinical purposes, as it may be necessary to integrate technology into screening, assessment, and interventions for partner violence. It is also important in research, as cyber psychological abuse is not adequately captured using traditional partner violence assessments such as the Conflict Tactics Scales. Specific aims and hypotheses are presented below.

Aim 1: The first aim of the study was to determine the proportion of adult internet users who have been in an intimate relationship in the past year who perpetrate and are victimized by cyber psychological abuse.

Aim 2: The second aim of the study was to examine the strength of the relation between cyber psychological abuse and specific types of traditional intimate partner abuse, namely physical assault, sexual coercion, and subtypes of emotional abuse.

Hypothesis 2.1. Consistent with prior positive relationships between the different forms of intimate partner abuse, it was expected that greater cyber psychological abuse perpetration would be associated with greater physical assault perpetration, greater sexual coercion perpetration and greater emotional abuse perpetration, with the strongest associations between cyber psychological abuse perpetration and emotional abuse.

Hypothesis 2.2. (Exploratory). Relationships between cyber psychological abuse victimization and traditional forms of intimate partner abuse victimization were also explored. It was expected that greater CPA victimization would be associated with victimization of traditional partner abuse, namely physical assault and emotional abuse victimization.

Aim 3: The third aim was to examine how technological factors correlate with cyber psychological abuse. Specifically, it was expected that greater cyber psychological abuse perpetration will be associated with greater use of and proficiency with information communication technologies. The relationship between technology factors and cyber psychological abuse victimization was also explored. Specifically, the following technological factors were expected to be correlated with cyber psychological abuse:

Hypothesis 3.1. More daily cellular phone use would be correlated with greater cyber psychological abuse perpetration.

Hypothesis 3.2 More time spent online would be correlated with greater cyber psychological abuse perpetration.

Hypothesis 3.3 More use of social networking would be be correlated with greater cyber psychological abuse perpetration.

Hypothesis 3.4 Greater ICT competence would be correlated with greater cyber psychological abuse perpetration.

Hypothesis 3.5 Greater social media use integration would be correlated with greater cyber psychological abuse perpetration.

Aim 4: The fourth aim was to determine whether previously established risk factors for partner violence are also associated with cyber psychological abuse perpetration. More specifically, the following predictors and sets of predictors were expected to be associated with cyber psychological abuse perpetration.

Hypothesis 4.1 It is expected that females will report greater cyber psychological abuse perpetration than males.

Hypothesis 4.2 It was expected that age will be positively correlated with frequency of perpetration of cyber psychological abuse.

Hypothesis 4.3. Child maltreatment. It is expected that childhood maltreatment experiences will significantly predict cyber psychological abuse perpetration. Specifically, it is expected that childhood physical abuse, childhood emotional abuse, childhood physical neglect, childhood emotional neglect, and childhood sexual abuse will each uniquely, and as a set, predict cyber psychological abuse perpetration.

Hypothesis 4.4. Behavioral/Psychological Factors. It is expected that alcohol use, drug use, and emotion regulation will significantly predict cyber psychological abuse perpetration such that greater alcohol and drug use and fewer emotion regulation skills will be associated with greater perpetration of cyber psychological abuse both individually and as a collective set.

Hypothesis 4.5. Relationship-Related Factors. It is expected that the following relationship-related factors will be associated with greater cyber psychological abuse perpetration, both individually and as a collective set:

4.5.1 Greater relationship jealousy

4.5.2 Greater adult attachment insecurity

4.5.3 Fewer communication skills

4.5.4 Less satisfaction in one's current or most recent intimate relationship.

Aim 5 (Exploratory Aim): Aim 5 was to explore whether the established risk factors for partner violence are associated with cyber psychological abuse victimization. Each

individual factor and set of factors explored in aim 4 above were explored as they relates to cyber intimate partner abuse victimization.

Aim 6 (Exploratory Aim). Finally, each of the predictors in Aims 4 and 5 as they relate to cyber psychological abuse perpetration and victimization were conducted separately by participant sex to explore any potential sex differences in the prediction of cyber psychological abuse.

Chapter 2: Method

Participants

Participants were 243 adult individuals recruited through Amazon's Mechanical Turk (MTurk). Mturk is an internet crowdsourcing marketplace where employers post "Human Intelligence Tasks" (HITs) for paid workers ("*Turkers*") to complete. This marketplace was initially designed for employers ("*Requesters*") to hire workers to do simple tasks that are more conducive to human intelligence than computer-based labor such as comparing images, copying text into a database, responding to online questions, or transcribing audio material (Casler et al., 2013). MTurk has been increasingly used to recruit participants for behavioral research, and has several favorable characteristics in this regard (e.g., Boynton & Richman, 2014; Gardner, Brown & Boice, 2012; Greenwood, Long, & Cin, 2013; Miller et al., 2013; Eriksson & Simpson, 2010; Papa, Lancaster, & Kahler, 2014).

MTurk is a high-quality source of behavioral participants and offers several advantages for behavioral researchers including a wide and diverse subject pool, low cost, easy payment for participants, and quick recruitment (Mason & Suri, 2012; Goodman et al., 2013; Holden, Dennie & Hicks, 2013). Studies investigating MTurk as a recruitment tool have shown that Turk participants reliably report on measures of their own demographics as well as personality and other behavioral measures (Holden, Dennie & Hicks, 2013; Rand, 2012; Suri & Watts, 2012;). Studies that compare using MTurk to other methods of recruitment have found that data obtained through MTurk show similar psychometric properties as other internet and in-person laboratory samples (Buhrmester et al., 2011; Holden et al., 2013). Similarly, findings from several social science

experiments using more traditional recruitment strategies have been replicated successfully using samples recruited through MTurk (e.g., Berinsky et al., 2012; Bohanno, 2011; Gardner, Brown & Boice, 2012). Studies investigating the participant characteristics of samples recruited through MTurk have noted that the pool of workers is large and diverse with regard to age, ethnicity, and socioeconomic status. Turkers tend to be more representative of the general population in the United States than college student subject pools (Buhrmester et al. 2011; Ross et al., 2010; Bohannon, 2011). When compared to the general population, Turkers are younger (mean age of 30 vs 37 in the US in 2013), more educated, more likely to be underemployed, and more likely to identify as politically liberal (Paolaci et al., 2010; Casler et al., 2013).

To be eligible for the present study, individuals were required have a worker account on Mechanical Turk (requires a valid e-mail and mailing address), be over the age of 18, live in the United States, be able to read English, currently have at least one active social media account (e.g., Facebook, Twitter, Instagram), have been in an intimate relationship with another individual within the past 12 months, and to have an MTurk HIT approval rating of at least 60%, meaning that the percentage of assignments submitted that have been approved for that worker must have been greater than 60%. Of the 272 individuals who consented to participate in the study, 10.6% (n = 29) were excluded from analyses either because they did not provide enough information to see if they qualified (n = 14; 5.1%) or because they qualified but did not complete the assessment battery (n = 15; 5.5%). The remaining 243 cases were included in the final sample.

Participants were, on average, 33.49 years of age ($SD = 11.31$, range 18 – 69). Fifty-three percent of the sample identified as female ($n = 129$), 46% identified as male ($n = 113$), and 0.4% self-identified as *other* ($n = 1$). Participants resided in 45 of the 50 United States, with the largest representations from California ($n = 32$; 13.2%), New York ($n = 14$; 5.8%), and Texas ($n = 13$; 5.3%). With regard to race, 77.4% of individuals ($n = 188$) identified as White, 9.5% ($n = 23$) identified as Black or African American, 7.0% ($n = 17$) as Asian or Pacific Islander, 0.8% ($n = 2$) as American Indian/Alaska Native, 1.2% ($n = 3$) self-identified as “other”, and 4.1% ($n = 10$) identified as more than one race. With regard to ethnicity, 10.7% of participants ($n = 26$) reported they were of Hispanic or Latino descent. On average, participants completed 15 years of education (equivalent to three years of college; $SD = 1.90$ years; Range 11- 19 years). Most participants were employed either full time (60.1%) or part time (22.6%), while an additional 17.3% reported that they were not currently working outside of the home (e.g., unemployed, retired, stay at home parent). Participants reported they spent an average of 397 minutes (6.62 hours) on Mturk daily ($SD = 303.30$ minutes). The median gross family income was between \$40,000 and \$50,000 U.S. per year, ranging from less than \$10,000 per year to over \$150,000 per year.

On average, participants owned 3 different forms of communication technology ($SD = 1.16$, range 1-6), with the most common technologies being smartphones ($n = 206$; 84.7%) and laptop computers ($n = 201$; 82.7%). With regard to social media, 72% of individuals ($n = 175$) reported that their most often used Social Media platform was Facebook, 13.2% ($n = 32$) reported Twitter, 4.9% ($n = 12$) reported Instagram, 2.9% ($n = 7$) reported Pinterest, 1.6% reported Google+, 1.2% ($n = 3$) reported LinkedIn, and 4.1%

(n = 10) reported they used “other” social media platforms the most (e.g., Reddit, Steam, Tumblr, Vk.com).

With regard to intimate relationships, 90.5% (n = 220) of the full sample indicated their current or most significant recent relationship was with someone of a different sex; 9% (n = 22) reported that the relationship was with someone of the same sex, and less than 1% (n = 1) reported not identifying with either sex.. Ninety-seven percent of participants reported they were currently in an intimate relationship (n = 236) and 2.8% of participants (n = 7) reported they were not currently in a relationship but had been involved in a relationship during the past year. Of those individuals who were currently involved in a relationship, the average relationship length was 78 months (6.5 years; SD = 98.68 months; range 1- 642 months). Of individuals not currently in a relationship, the average relationship length prior to separation/break up was 13.43 months (one year, one-month; SD = 7.78 months; range 4 – 24 months), and the average time since breakup/separation was 3.14 months (SD = 2.19 months, range 2-8 months).

Procedure

To participate, MTurk workers logged into their account, which lists all HITS currently active. Participants viewed the HIT entitled “Technology in Relationships Survey” which described the basic survey requirements. Interested participants who clicked on the HIT were brought to a detailed HIT information page stating the study inclusion criteria, compensation, and study procedures (see Appendix A). Interested workers then clicked “accept HIT” and were directed to the online assessment battery on the Qualtrics survey administration website (www.qualtrics.com). Once on the Qualtrics weblink, participants were presented with an informed consent sheet describing

eligibility, purpose, potential risks, confidentiality, the voluntary nature of the study, and the investigator contact information. Upon agreeing to participate (clicking “I agree”), participants entered their Amazon Worker ID and completed the screening and assessment battery. Individuals who did not consent or did not meet screening criteria were redirected back to MTurk and did not receive compensation. Individuals who qualified for the survey completed the online assessment battery, were provided with resources for intimate partner violence (see Appendix), and were provided with a 6 digit completion code to enter into MTurk for payment purposes. Upon verification that the individual met eligibility criteria and completed the entire survey, the investigator “accepted” the hit and \$2.00 compensation was deposited by Amazon into the worker’s Mturk worker account.

Quality Assurance

Because the drawback to online recruitment and data collection is the potential for “bots” and “spammers” (e.g., individuals who attempt to take the survey multiple times), a variety of measures were taken to ensure the quality of the data collected. As noted above, workers were reminded that they would not be compensated for repeated completion(s) of the survey. While individual IP addresses were not collected so as to maintain participant confidentiality, Mturk provides the requester (investigator) with the number of times individual workers complete a given HIT. Each submission was examined and there were no duplicate MTurk ID numbers submitted in the present study, indicating no repeated administrations for the same participant.

Additionally, to evaluate whether participants sufficiently attended to the survey items, a 3-question instructional manipulation check was administered halfway through

the survey (see Appendix C.). These procedures are typically used in MTurk survey research to ensure the quality of data (Oppenheimer et al., 2009). The following questions were presented with open ended response format “What is your favorite color?” “What is your favorite meal of the day” and “How many times have you flown in an airplane in the past year”. The instructions at the top of the page specified to please type “I read the instructions” for all three questions. Individuals failed the instructional manipulation check if they typed anything other than "I read the instructions" for any of the three questions. Out of the 243 participants, 14 (6%) failed the instructional manipulation check. However, as there were no statistically significant differences in total, $t(241) = -0.01, p = .989, D = -0.001$, minor, $t(241) = -0.10, p = .919, D = -0.01$, or severe, $t(241) = 0.27, p = .789, D = 0.03$ cyber psychology abuse perpetration based on passing versus not passing the IMC, statistical analyses were run with these individuals included in the final sample.

Measures

Technological Variables.

Daily cell phone and texting use. Extent of cell phone and texting was measured using a measure adapted from Short & McMurray (2009). For individuals who indicate they own a phone, respondents were queried as to how many texts they send on an average day, how many texts (including picture messages) they receive on an average day, and the number of phone calls made and received per day. Short and McMurray (2009) did not report on the possible response options for their questionnaire; therefore, the present study added the following response options for each of these four variables: 0 (*I do not typically send/receive texts/calls*), 1-2, 3-5, 6-10, 11-20, 20-40, 41-50, 51-100,

101-500, and 501+ *texts/calls*) (see Appendix B for questionnaire). The midpoint of each response was taken (with 501+ texts coded as 550.5), and each of the four indices was summed for a total daily cell phone/texting frequency score.

Internet use (excluding social media). Internet use was measured using a study-specific measure asking participants, on average, how many hours per day they spend doing several activities online. The questionnaire clarifies that use of the internet includes access to the internet from any internet capable device, including smartphone, PC, tablet computer, etc. for purposes other than for one's job. The list of online activities is modified from the Internet Use Questionnaire (Johnson & Kulpa, 2009) and includes: communication activities (chatting online, using email, chat rooms, Skype, online dating), website use (using search engines, downloading or listening to music, reading blogs, downloading or watching internet videos, accessing personal information online), and playing online games. Response options are 0 (*I do not do this online*), 1-10 minutes, 11-20 minutes, 21-30 minutes, 31-60 minutes, 1-2 hours, 2-3 hours, 3-4 hours, 4-5 hours, and 5+ hours. The average amount in each category was summed for a total amount of time spent on the internet.

Social networking site (SNS) use. Social Network Site Use was assessed using both a modified version of of Ellison's (2007) Facebook Intensity scale and a modified version of the Social Media Use Integration Scale (SMUIS; Jenkins-Guarnieri, Wright & Johnson, 2013). These two measures assess behavioral frequency of social media use and to what extent social media use is integrated into the individual's life respectively, both of which are important theoretical constructs in assessing one's use of social networks (Jenkins-Guarnieri et al., 2013). The original Facebook Intensity scale contains eight

items: the first two items ask about how many “Facebook Friends” the individual has, and the average number of minutes per day spent on Facebook. The remaining six items center on emotional attachment to Facebook (e.g., “I feel out of touch when I haven’t logged onto Facebook in a while) that are rated on a 5-point Likert-type scale ranging from *Strongly Disagree* to *Strongly Agree*. In the present study, two modifications to the measure were used. First, only the first two items were used (number of connections and time spent on the site), as the rest of the items overlap with the Social Media Use Integration Scale described below. Secondly, the measure was adapted to reflect the social media website that the participant endorsed using the most often (e.g., Facebook, Twitter, LinkedIn etc). The full Facebook Intensity Scale contained an internal consistency reliability of .83 in the development sample of undergraduate students. The full scale was related to measures of social capital (Ellison et al., 2007) and has been used in other studies to assess use of Facebook (e.g., Orr et al., 2009; Ross et al. 2009).

The Social Media Use Integration scale (SMUIS; Jenkins-Guarnieri et al., 2013) operationalizes online social media use as the “degree to which social media is integrated into the social behavior and daily routine of users, and the importance of and emotional connection to this use.” The scale consists of 10 self-report items which ask the respondent to indicate their agreement with each statement on a Likert-type scale ranging from 1 (“*Strongly Disagree*”) to 6 (“*Strongly Agree*”) regarding their Facebook use. Scores for each of the items are summed (with one item reverse coded), yielding a total score, and there are also two subscales measuring social integration and emotional connection. Example items include: “I enjoy checking my Facebook account” (integration into social routines subscale), and “I would be disappointed if I could not use

Facebook at all” (social integration and emotional connection subscale). The study authors note that they designed the questionnaire to be adaptable to use of any social networking site. Thus, just as with the Facebook Intensity Scale described above, the SMUIS questions were adapted to reflect the SNS that the participant reports using the most.

The SMUIS was developed using a sample of 616 college students using exploratory factor analysis ($n = 308$) and confirmatory factor analysis ($n = 308$). The authors reported very high internal consistency reliability ($\alpha = .914$) for the SMUIS total score, and also high internal consistency reliability for the Social Integration and Emotional Connection and Social Routines subscales, with alphas of .893 and .828 respectively. Further, test-retest reliability coefficients were also good over a 3-week retesting interval for the total scale ($r = .803$) and for the two subscales (r 's of .804 and .676). Also in the development sample, The SMUIS total score demonstrated evidence of convergent validity, as it was strongly correlated with the Facebook Use Intensity Scale ($r = .77, p < .01$). Evidence of discriminant validity derives from the finding that the SMUIS total score showed near-zero associations, with conscientiousness ($r = .01$) and agreeableness ($r = .03$), as measured with the Big Five Index (BFI; John, Naumann, & Soto, 2008).

Technology proficiency. Technology proficiency was measured using a portion of Spitzberg's (2006) measure of Computer Mediated Communication Competence (CMC). Computer Mediated Communication in this context refers to “any human symbolic text-based interaction conducted or facilitated through digitally based technologies” (Spitzberg, 2006, p. 630). Thus, CMC competence is not limited to

computers per se, and includes texting, instant messaging, email interactions, and video conferencing, among others that exist now or may be developed in the future. This questionnaire consists of 18 items measuring motivation, knowledge, and efficacy regarding computer mediated communication. Each item utilizes a five-point scale ranging from 1 (*not at all true of me*) to five (*very true of me*). Example items include “I look forward to sitting down at my computer to write to others” (motivation), “I am very familiar with how to communicate through e-mail and the internet” (knowledge), and “I feel completely capable of using almost all currently available CMCs” (efficacy). Items were summed (with some items reverse scored) for a total score of technology proficiency. Initial evidence suggests that these three subscales have acceptable internal consistency estimates (alphas ranging from .73 to .90) (Bubas, 2006).

Traditional Partner Abuse Measures.

Physical assault. Physical assault was measured using the physical assault subscale of the Revised Conflict Tactics Scale (CTS2; Straus et al., 1996). Based on the original Conflict Tactics Scale (CTS; Straus, 1979), the CTS2 was designed to measure response to conflict, including: physical assault, psychological aggression, sexual coercion, injury, and negotiation (Straus et al., 1996). The physical assault subscale consists of 12 items measuring both minor and severe acts of violence. Examples of items include: “Pushed or shoved my partner” (minor), and “Punched or hit my partner with something that could hurt” (severe). For each item, the respondent was asked to indicate the frequency that they engaged in the behavior in the past twelve months on a scale ranging from 0: “This has never happened” to 6: “More than 20 times”. There is an additional response option for 7 “Not in the past year but it did happen before”. Each

item asks the respondent to indicate the frequency of the behavior by both themselves, and their partner. Weighted frequency scores for both victimization and perpetration are created by taking the midpoints of each score, such that 3 (3-5 times) is recoded as 4 times, 4 = 8 times, 5 = 15 times, and 6 (“more than 20 times”) is recoded to 25 (Straus et al., 1996).

The physical assault subscale of the CTS2 is commonly used to measure physical abuse in relationships in both clinical and community samples and demonstrates good psychometric properties. For example, internal consistency for this subscale in the development sample was .86 (Straus et al., 1996), and similar estimates of internal consistency have been found in cross-cultural samples (Cronbach’s Alpha= .88; Straus, 2004). The physical assault subscale of the CTS has also been demonstrated to have good test-retest reliability. Vega and O’Leary (2007) examined the test-retest reliability of the CTS2 in a sample of men in a batterer intervention program. The researchers asked participants to report on their behavior during the same 12 month time frame using a test-retest interval of two months and found good reliability coefficients for the physical assault subscale ($r = .677, p < .001$; Vega & O’Leary, 2007). Furthermore, Straus et al., (1996) evaluated the construct validity of this subscale and found that a high correlation with psychological aggression ($r=.71$ among men only) and a moderate inverse correlation with social integration ($r = -.9$). Additionally, Straus (2004) found that the physical assault subscale was correlated with dominance in dating relationships ($r = .44$).

Sexual coercion. Sexual Coercion perpetration was measured with the Sexual Experiences Survey Short Form Perpetration (SES-SFP; Koss et al., 2006). The original Sexual Experiences Survey (SES; Koss & Oros, 1982) is the most widely-used measure

of sexual coercion. It was developed to detect cases of sexual perpetration or victimization that would be missed by other measures that only focus on physical force in studies of the general population. The revised short form of the measure was designed specifically to be gender-neutral and contains 7 items assessing both sexual aggression and sexual coercion and three additional supplementary items. For each of the seven behaviors or attempted behaviors (e.g., “*I had oral sex with someone or had someone perform oral sex on me without their consent*”), the respondent is asked to indicate the frequency (0, 1, 2, or 3+ times) of the behavior both in the past 12-months and since the respondent was 14. According to the authors, prevalence scores for each category of behavior (e.g., sexual contact, attempted coercion, coercion, attempted rape, and rape) can be calculated by adding the number of times each of these behaviors is endorsed in each category (Koss et al., 2007). The measure can also be scored by classifying respondents into “aggressors” or “nonaggressors”, based on whether they endorsed any of the given behaviors, which was the method used in the present study due to low base rates of each behavior (Sigue-Leiros, Carvalho, & Nobre, 2013). In order to make the measure more appropriate for the current study sample, “someone” was replaced with “partner” to capture behaviors that occurred within the intimate relationship.

Additionally, only the past year was assessed.

There is limited information on the psychometrics of the SES-SFP; however, administration of the Portuguese version of the scale to a sample of men yielded an internal consistency estimate that was very high ($\alpha = .97$; Sigure-Lieros, Carvalho, & Nobre, 2013) and other studies have begun to use this measure in mixed-gender samples, finding that for perpetration, there were significant gender differences, with significantly

more men reporting that they engaged in each type of sexual experience on the measure (e.g., sexual coercion, attempted rape, etc.) (D'Abreu, Krahe, & Bazon, 2013; Sigre-Leirós, Carvalho, & Nobre, 2014). Supporting the construct validity of the measure among men, Sigre-Leiros and colleagues (2014) found that reporting any type of sexual aggression on the SES-SFV was related to higher levels of psychopathological symptoms on the Brief Symptoms Inventory. There is far more data on the original SES. The original SES has high internal consistency estimates, with Cronbach's alpha for males ranging from .87 - .89 and alpha estimates for females ranging from .74 - .82 (Koss & Gidycz, 1985; Marshall & Holtzworth-Munroe, 2002). The original SES is also related to physical assault and psychological aggression as measured with the CTS (Marshall & Holtzworth-Munroe, 2002).

Emotional abuse. Emotional abuse was measured using the Multidimensional Measure of Emotional Abuse (MMEA; Murphy, Taft, & Hoover, 1999). This measure was designed to be a brief instrument that captures both normative forms of emotional abuse and coercive and controlling behaviors more typical in clinically violent samples (Murphy & Hoover, 1999). It was also designed to have applicability to both genders and across dating, cohabiting, and marital relationships and to capture the different forms of emotional abuse that are not reflected in earlier measures (Murphy & Hoover, 1999). The measure contains 28 self-report items (7 per subscale) that measure four distinct factors of emotional abuse: Dominance and Intimidation (e.g., *threw, smashed, hit, or kicked something in front of you*), Restrictive Engulfment (e.g., *tried to stop you from seeing certain friends or family members*), Denigration (e.g., *called you a loser, failure, or similar term*), and Hostile Withdrawal (e.g., *acted cold or distant when angry*). Similar

to the response options on the CTS, respondents are asked to indicate the frequency of each behavior ranging from “*never*” to “*more than 20 times*” for both themselves (perpetration) and their partners (victimization). For consistency with the other study measures, the present study used a 12 month time frame. Items were coded in the same manner as frequency scoring of the CTS, by first recoding item scores to the midpoint behavioral frequency of each category (e.g., “3-5 times” was coded as 4, and “11 to 20 times” was coded as 15), before summing frequency scores for the items on each subscale.

The initial psychometric studies of this measure using college undergraduates have demonstrated good internal consistency reliability, with estimates from the four subscales ranging from .79 to .90 (Murphy et al., 1999). Regarding individuals’ reports on abuse by one’s self, the alphas in the development sample were .81 (Denigration), .86 (Hostile Withdrawal), .83 (Restrictive Engulfment), and .79 (Dominance/Intimidation). Confirmatory Factor Analysis with a college dating sample has supported the four-factor model of this measure (Murphy et al., 1999). The MMEA has been used to assess emotional abuse process and outcomes (Formley & Lopez, 2010; Murphy et al., 2007; Taft et al., 2005; Taft, Murphy, King, Musser & DeDeyn, 2003). Supporting the construct validity of the measure, Murphy et al., (1999) found that all of the MMEA subscales were associated with the Domineering, Vindictive, and Intrusive subscales of the Inventory of Interpersonal problems. The total MMEA score has been associated with attachment patterns and stressful problems for both men and women (Gormley & Lopez, 2010). and is also associated with physical IPV and interpersonal problems (Murphy et al., 2007).

Child Maltreatment

The Childhood Trauma Questionnaire – Short Form (CTQ-SF; Bernstein et al., 2003) was used to assess childhood maltreatment. The CTQ-SF is the most widely used measure of childhood maltreatment and consists of 28 self-report items that assess retrospective reports of neglect and abuse experiences during childhood and adolescence (Spinhoven et al., 2014). The measure consists of five, 5-item subscales measuring emotional abuse, physical abuse, sexual abuse, emotional neglect, and physical neglect as well as three additional items measuring minimization and denial. Respondents are asked to indicate the frequency of each experience on a 5-point scale from 1, “*Never true*” to 5, “*very often true.*”

Bernstein and colleagues (2003) created the 28-item version of this measure as a shortened version of the larger 70-item CTQ (Bernstein et al., 1994). The CTQ-SF was developed using a combined sample of 1,978 individuals from four different samples: two samples of substance abusing adults, a sample of adolescent psychiatric inpatients, and a community sample. In this study, both exploratory and confirmatory factor analysis supported the five-factor structure of the questionnaire. Since the initial psychometric study of this measure, additional studies have also supported the five-factor structure in both clinical and nonclinical samples (Spinhoven et al., 2014; Thombs, Bernstein, Lobbestael & Arntz, 2009). The factorial invariance of the measure has also been supported across the four data collection sites in the initial psychometric study as well as across those with and without anxiety or depressive disorders (Bernstein et al., 2003; Spinhoven et al., 2014).

Regarding reliability, the CTQ-SF demonstrated good internal consistency reliability across each of the subscales in the development sample, with alphas among the subscales ranging from .3 - .86 for physical abuse, .84 - .89 for emotional abuse, .92 - .95 for sexual abuse, .85 - .91 for emotional neglect. Alphas for physical neglect were lower, ranging from .61 - .78 (Bernstein et al., 2003). To investigate the validity of the CTQ-SF, the authors of the questionnaire compared the CTQ-SF scores to the Child Maltreatment Ascertainment Interview in their clinical adolescent sample. Supporting the criterion validity of the measure, they found that each of the CTQ-SF subscales predicted the corresponding clinician rating of the behavior. Further, the CTQ-SF subscales were more related to therapist ratings of the same factors (e.g., sexual abuse) but did not correlate as strongly with therapist ratings of the other factors (e.g., between therapist rated neglect and CTQ-SF sexual abuse (Bernstein et al., 2003), supporting the discriminant validity of the measure.

Behavioral/Psychopathology Measures

Problematic alcohol use. Problematic alcohol use was assessed with the Alcohol Use Disorders Identification Test (AUDIT; Babor, de la Fuente, Sanders, & Grant, 1993). This measure is a 10-item self-report screening tool designed to assess risky or hazardous alcohol consumption (not long term dependence) over the past 12 months in primary care settings. Items measure hazardous alcohol use (items 1-3), dependence symptoms (items 4-6), and harmful alcohol use (items 7-10). Response options for this scale are weighted between 0 and 4, mostly based on frequency of occurrence. The score from each of the items was summed, yielding a total AUDIT score ranging from 0 – 40.

Several studies have assessed the internal consistency reliability of the AUDIT, with most reporting a high degree of internal consistency. A study of primary care patients found a Cronbach's alpha of .77 (Schmidt, Barry, & Fleming, 1995). A study of college students reported an alpha of .80 (Fleming, Barry, & MacDonald, 1991), and a study of individuals arrested for drunk driving found an alpha of .83 (Hays, Merz, & Nicholas, 1995). Shields and Caruso (2003) reviewed the studies reporting on the AUDIT's reliability and found an average reliability of .81 across studies. Studies also support the test-retest reliability of the measure. For example, Rubin and colleagues (2006) examined 102 individuals in the general population and administered the AUDIT over the telephone. Over a one-week interval, the test-retest coefficient was .87.

Regarding criterion-oriented validity, the AUDIT has consistently shown to be an accurate screening tool for both alcohol problems and alcohol dependence (Reinert & Allen, 2007). The AUDIT performs at least as well as several criterion measures, including both biochemical markers of alcohol use and other self-report measures (Allen et al., 1997; Babor et al., 1991). In the development sample of patients who had been drinking in the past year, Saunders and colleagues (1993) found small to moderate correlations with γ -glutamyltranspeptidase (GGT), aspartate aminotransferase, alanine aminotransferase, and macrocytic volume, biomarkers of alcohol use, with higher associations in women. In terms of correlations with self-report measures, Bohn and colleagues (1995) found a correlation of $r = .88$ between the AUDIT and the MAST in both genders. They also found that AUDIT scores were correlated in the expected direction with drinking consequences, attitudes about drinking, and negative mood states after drinking. Additionally, Rigmaiden and colleagues (1995) found that the correlation

between the AUDIT and the CAGE among individuals in ambulatory care was .78. Of note, there is evidence that computer-administered versions of the AUDIT perform as well as paper-and-pencil administration (Reinert & Alen, 2007; Chan-Pensley 1999; Butler et al., 2003).

Problematic drug use. Use of other drugs was measured using the Drug Abuse Screening Test (DAST; Skinner, 1982). This self-report measure was designed to assess for drug use problems for both clinical screening and treatment/evaluation research. It consists of 20 yes/no items (reduced from the original 28-item version) that were modified from the Michigan Alcoholism Screening Test (MAST; Selzer, 1971). Example items include: “Have you used drugs other than those required for medical reasons”, and “Have you ever experienced withdrawal symptoms (felt sick) when you stopped taking drugs?” Items are scored by assigning one point for each “yes” response. Two items are reverse coded (e.g., “Are you always able to stop using drugs when you want to”), and responses are summed, yielding a total score between 0 – 20.

The original psychometric study of the DAST used a sample of 223 individuals who voluntarily sought treatment for drug and or alcohol abuse. Using a principal components analysis of the 28-items, the authors found that the items were best represented a unidimensional model of drug-related problems. The authors found high internal consistency reliability among both the 28-item and 20-item versions (alphas of .92 and .95 respectively). They also found that DAST scores were related to being younger, and to other self-reports of drug use over the past 12-months. Additional evidence of the scale’s validity derives from the finding that the total DAST score was

significantly higher among those with drug or drug and alcohol problems than among those with alcohol problems only (Skinner, 1982).

This measure has been used to assess for drug problems in several different populations, including individuals with known drug and alcohol use disorders (Skinner, 1982; Gavin, Ross & Skinner, 1989; Bohn, Babor, & Kranzler, 1991), individuals with psychiatric diagnoses such as ADHD (Cocco & Carey, 1998; McCann et al., 2000), and other samples such as women presenting in the emergency room (El-Bassel et al., 1997) and female offenders (Salstone et al., 1994). Several studies have examined the reliability and validity of this screening instrument, mostly among drug abusing or other clinical samples. Regarding internal consistency reliability for the DAST-20, studies using multiple samples have reported alphas at or about .90, indicating good internal consistency (Yudko et al., 2007). Estimates range from .74 - .95 in drug abusing and psychiatric samples (Yudko et al., 2007; Salstone et al., 1994; Skinner & Goldberg, 1986; Cocco & Carey, 1998). One study of union members (both substance using and nonusing members) found a similarly high Cronbach's alpha of .92, providing some evidence of internal consistency reliability among more normative samples (El-Bassel et al., 1997). The test-retest reliability of the 28-item version of the measure was .85 in a sample of union members retested after a 2-week interval, and was .78 in a sample of psychiatric outpatients who Axis I disorders other than substance abuse or dependence who were retested between 7 and 43 days after the initial test administration (El-Bassel et al., 1997; Cocco & Carey, 1998).

Regarding criterion validity, the 20-item version of the DAST correlates very highly with both the 28-item version in a sample of drug and alcohol abusing individuals

and the 10-item version in a sample of psychiatric patients ($r = .99$ and $r = .97$ respectively) (Skinner, 1982; Cocco & Carey, 1998). In a sample of psychiatric outpatients, the DAST is correlated with the Addiction Severity Index – Drug Composite Score, Clinician Rating for Drug Use, and the Addiction Severity Index – Alcohol Composite Score, all in the positive direction (Cocco & Carey, 1998). Similarly, the DAST total score is correlated positively with self-reported frequency of various types of drug use in the past twelve months (Yudko et al., 2007). Gavin and colleagues (1989) found a correlation of $r = .49$ between DAST total score and the number of drugs used during the past week.

Regarding construct validity, research has supported the expected relationship between drug use as measured by the DAST and other psychiatric disorders. For example, Cocco & Carey (198) found positive, significant correlations between the DAST total score and the Addiction Severity Index – Psychiatric composite, in a sample of psychiatric patients. Because IPV victimization is also associated with drug and alcohol use, further evidence for the construct validity of the measure is provided by the fact that women in the emergency room without a history of physical IPV victimization in the past year reported significantly lower DAST-10 total scores than those with a history of IPV victimization (1.3 vs 3.0) (El Bassel et al., 2003).

Emotion regulation. Emotion regulation was measured using the Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004). This measure is a 36-item, self-report questionnaire aiming to capture a comprehensive and integrative picture of emotion regulation. The measure includes six interrelated aspects of emotion regulation derived from factor analysis of the validation sample of 357 undergraduates:

nonacceptance of emotional responses, difficulties engaging in goal-directed behavior, impulse control difficulties, lack of emotional awareness, limited access to emotion regulation strategies, and lack of emotional clarity (Gratz & Roemer, 2004). Example items include: “I am clear about my feelings” and “When I am upset, I have difficulty thinking about anything else.” Respondents are asked to indicate how often each item applies to them on a 5-point scale ranging from 1 “*almost never*” to 5 “*almost always*”. While subscales can be calculated to represent the six dimensions of emotional regulation, a composite DERS total score can also be computed to reflect broad deficiencies in emotion regulation (Bonn-Miller, Vujanovic, Boden, & Gross, 2011; Gratz & Roemer, 2004; Vujanovic et al., 2008; Tull, 2006). Items are coded such that higher scores represent greater difficulty in emotion regulation.

The DERS has been noted as the most comprehensive measure of emotion regulation to date, and it is widely accepted and used among both clinical and community samples (Fox et al., 2008; McLaughlin, Mennin & Farach, 2007; Tull et al., 2007; Tull, 2006; Vujanovic, Zvolensky, & Bernstein, 2008; Weinberg & Klonsky, 2009). Several studies have demonstrated high internal consistency reliability for the total DERS score as well as the individual subscale scores. In the development sample of undergraduates, Gratz & Roemer (2004) found an overall alpha of .93, with alpha’s for the six subscales all over .80. They also found a test-retest reliability coefficient over a 4-8 week interval was good ($\rho = .88$). Other studies have confirmed high internal consistency estimates among both clinical and community samples, with alphas ranging from .93 - .95 (Tull, 2006; Bonn-Miller et al., 2011; Goldsmith, Chesney, Heath & Barlow, 2013).

To assess the construct validity of the measure, Gratz and Roemer correlated the DERS total score and subscale scores with the Generalized Expectancy for Negative Mood Regulation Scale (NMR; Catanzaro & Mearns, 1990) as well as measures of experiential avoidance and emotional expressivity. As predicted, they found significant negative correlations between the DERS total score and both the NMR (-.69) and emotional expressivity (-.23), and a significant positive correlation between the DERS total score and experiential avoidance (.60). Thus, more difficulty in emotion regulation on the DERS was associated with less emotional expression and more avoidance of emotional experiences. The DERS total score is also correlated with several psychological disorders including PTSD (Bonn-Miller et al., 2011; Tull et al., 2007), depression and anxiety (Goldsmith et al., 2013), and alcohol abuse (Fox & Sinha, 2008).

Relationship-Related Measures

Relationship jealousy. Relationship jealousy was measured with an adapted version of the Multidimensional Jealousy Scale (Pfeiffer & Wong, 1989). This measure consists of three 8-item subscales assessing emotional, cognitive, and behavioral aspects of romantic jealousy. The emotional jealousy scale asks respondents to indicate how they would react emotionally to each of eight scenarios from 1 (*very pleased*) to 7 (*very upset*) (e.g., “your partner is flirting with someone of the opposite sex.”). Responses are summed for a total emotional jealousy score. For the cognitive items, respondents are asked to report how often they have different thoughts (e.g., “I suspect that X is secretly seeing someone of the opposite sex”) with response options ranging from 1 (*all the time*) to 7 (*never*). For this subscale, items are reverse-scored prior to summing them. The behavioral jealousy items ask respondents to indicate how often they engage in jealous

behaviors from 1 (*never*) to 7 (*always*) and responses are summed. An example item is “I join in whenever I see X talking to someone of the opposite sex.” In order to be more inclusive of the study sample, which is not limited to individuals who identify as heterosexual, several items were changed from “someone of the opposite sex” to “someone else.” These modifications have been made to this measure in other studies (e.g., Elphinston et al., 2011). Thus, higher scores on each of the three subscales represent higher levels of jealousy.

The development sample of the MJS consisted of a convenience sample of individuals connected to an educational setting, ranging from 19 – 88 years of age (Pfeiffer & Wong, 1989). The authors reported Cronbach’s alpha’s of between .89 -.92 for the cognitive subscale, between .83 and .85 for the emotional subscale, and between .86 and .89 for the behavioral subscale. Other estimates of internal consistency in a sample of Australian individuals currently in a relationship of at least two months (Elphinston et al., 2011). Regarding validity, both exploratory and confirmatory factor analysis support the three factor structure of the measure (Pfeiffer & Wong, 1989; Elphinston et al., 2011). The MJS subscales are related to other measures of jealousy, such as the Self Report Jealousy Scale – Sexual Subscale, providing evidence of convergent validity (Pfeiffer & Wong, 1989). Regarding discriminant validity, the authors of the scale found differential associations between the three subscales with regard to their relations with love, liking and happiness. The MJS has been used in scales of partner violence (Chiffreiller & Hennessy, 2010).

Attachment insecurity. Adult attachment insecurity was measured with the Experiences in Close Relationships Questionnaire – Revised (ECR-R; Fraley, Waller, &

Brennan, 2000). The original version of the measure (Brennan, Clark, & Shaver, 1998) was developed from a sample of over 1000 undergraduates and contains the items from 60 self-report measures of attachment with the highest factor loadings. The measure was revised using IRT analysis into a 36-item questionnaire that contains two 18-item subscales measuring attachment-related anxiety and avoidance (Fraley et al., 2000). The attachment-related anxiety subscale represents an individuals' level of insecurity about being rejected or abandoned in a relationship whereas the avoidance subscale score represents the extent to which an individual is uncomfortable depending on or getting close to others (Fraley et al., 2000). Respondents are asked to indicate on a scale from 1 (*disagree strongly*) to 7 (*agree strongly*) how much each item represents how they usually are in relationships. Example items include: "I worry about being abandoned" (anxiety) and "I find it difficult to allow myself to depend on romantic partners" (avoidance). Scores are summed and can range from 7 to 126 for both subscales, with higher scores indicating higher levels of anxious and avoidant attachment.

Both the ECR and ECR-R are used frequently to measure adult attachment (Ravitz et al., 2010). For example, the ECR and ECR-R have been used to study the relationships between attachment insecurity and psychiatric symptoms and distress as well as relationships between attachment insecurity and intimate partner violence among women (Goldenson et al., 2007; Mikulincer & Shaver, 2007b; Wei et al., 2005). A review of measures of adult attachment noted that the ECR-R has generally produced sound psychometric properties (Ravitz et al., 2010). In terms of test-retest reliability, both subscale scores were very stable over a 6-week assessment period as measured with latent variable path analysis (Sibley & Liu, 2004). Other studies of test-retest estimates

for the two subscales of the measure have coefficients between .50 and .75 (Mikulincer & Shaver, 2007; Ravitz et al., 2010). Internal consistency reliability estimates are much higher, with Cronbach's alphas generally over .90 for both subscales (Ravitz et al., 2010; Wei et al., 2005; Brennan et al., 1998; Goldenson et al., 2007). Regarding validity, there is evidence for adequate convergent and discriminant validity of the measure (Ravitz et al., 2010; Sibley et al., 2005). For example, Sibley and colleagues (2005) found that in college students, ECR-R scores explained 30% - 40% of the variance in individual's diary ratings of the emotions they feel during interactions with their partner but only 5 - 15% of the variance in their diary ratings of emotions felt towards family and friends.

Communication Skills. Communication skills were measured with a shortened version of the Communication Skills Test (CST; Jenkins & Saiz, 1995). This 10-item self-report measure asks respondents to report how often each statement is true in their relationship, with response options ranging from 1 ("*never happens*") to 7 ("*always happens*"). Items measure the typical communication skills targeted in relationship education programs, without the technical jargon specific to relationship enhancement programs that is in the longer version of the measure (Allen et al., 2012; S. Stanley, personal communication, July 30th, 2013). Example items include: "When discussions threaten to boil over, we stop and take a time out" and "When discussing issues, I allow my partner to finish talking before I respond." The measure is scored by summing responses for each of the 10-items, with one item ("I interrupt my partner when we are arguing" reverse coded). Thus, higher scores indicate greater communication skills in one's relationship. There is little information available on the psychometric properties; however, this 10-item version has been used to evaluate communication skills in studies

of the effectiveness of a marriage education program for couples where at least one member was in the Army (Allen et al., 2012). The authors found acceptable internal consistency reliability estimates for the 10-item version of the measure, with a Cronbach's alpha of .86 among husbands and .85 among wives. Supporting the validity of the measure, the same study found that as expected, communication skills as measured by the 10-item CST as averaged across three time-points were lower among couples with a history of infidelity than those without such a history (Allen et al., 2012).

Relationship satisfaction. Relationship satisfaction was measured with the Relationship Assessment Scale (Hendrick, 1988). This scale is a 7-item, global measure of relationship satisfaction in romantic relationships, initially adapted from a measure of the quality of marriage relationships. Each item is scored on a 5-point Likert scale and items were summed (with two items reverse scored) such that the possible range of scores is from 7 – 35 and higher scores represent greater relationship satisfaction. An example item is, “In general, how satisfied are you with your relationship?” This measure was developed using a sample of 57 undergraduate students who were in an intimate relationship (Hendrick, 1998). Internal consistency reliability was .86 in the development sample and .91 in a clinical sample of individuals in intimate relationships who presented to a therapy clinic (Vaughn & Matyastick Baier, 1999). The RAS is positively and strongly correlated with all of the subscales of the Dyadic Adjustment Scale (DAS), another measure of adjustment in close relationships, supporting the convergent validity of the measure (Hendrick, 1988; Vaughn & Matyastick Baier, 1999).

Cyber Psychological Abuse.

Cyber psychological abuse was measured using the Cyber Psychological Abuse Scale (Leisring & Giumetti, 2014). This questionnaire consists of 18 items assessing both perpetration and victimization (9-items each) regarding the use of information communication technologies during relationship conflicts. Respondents were asked to indicate the frequency of each behavior in a manner similar to the Conflict Tactics Scales (Straus et al., 1996), with options ranging from 0 to 6 (0 = *never*, 1 = *once*, 2 = *twice*, 3 = *3–5 times*, 4 = *6–10 times*, 5 = *11–20 times*, 6 = *more than 20 times*). Example items include “Have you posted inappropriate pictures or embarrassing information online to humiliate your partner?” (severe), and “Have you kept tabs on your partner by checking their email messages, messages on their cell phone, or inbox on a social networking site” (minor). The original CPA Scale asks each item with regard to the time frame of the entire relationship; however, the present study specified a 12-month time frame to be consistent with other study measures. Consistent with the recommendations of the study authors, scoring of both the perpetration and victimization CPA scales paralleled the frequency scoring of the CTS (Straus, 2004), where each item response was recoded to response category midpoint, yielding a total cyber psychological abuse frequency. In addition, frequency scores were also summed for both minor CPA (midpoints for items 1, 2, 3, 6, 7, and 8), and severe psychological abuse (midpoints for items 4, 5, 9). Initial exploratory and confirmatory factor analysis by the measure’s authors using two samples of undergraduate students supported the 2-factor structure of measure (minor and severe cyber psychological abuse) with the minor and severe perpetration and victimization scales all having Cronbach’s alpha values above .70 (Leisring & Giumetti, 2014).

Additionally, Leisring and colleagues' (2014) CFAs suggested a higher order "cyber abuse" factor that justified the use of the total CPA score for both victimization and perpetration. With regard to convergent validity of the measure, both the perpetration and victimization subscales show expected patterns of associations with previously validated abuse and aggression measures (e.g., the Multidimensional Measure of Emotional Abuse) as well as perceived stress levels (Leisring & Giumetti, 2014).

To this author's knowledge, there is no published data with regard to the factor structure of this measure in samples other than the initial development sample of college students; thus an exploratory factor analysis (EFA) was conducted in this study's sample (N = 243) to examine the factor structure of the measure (see Appendix D). Using Principal Axis Factoring and Direct Oblimin rotation, the Scree plots from an initial EFAs of the raw CPA perpetration and CPA victimization items both suggested two factor solutions, with two eigenvalues over 1 in both cases (Eigenvalues of 4.38 and 1.42 for perpetration; 4.63 and 1.50 for victimization). The two factors explained 64.42% of the variance in the set of perpetration items and 68.14% of the variance in the set of victimization items. The pattern matrix from the two-factor model for both CPA victimization and CPA perpetration is shown in Table D1. Assigning items to a factor based on their highest factor loading resulted in the same item/subscale solution as in Leisring and colleagues' sample (2014) for both victimization and perpetration, with items 4, 5, and 9 mapping onto a "severe CPA" factor, and the rest of the items loading onto the "minor CPA" factor.

Qualitative Comments.

The last question in the assessment battery asked participants, “What else would you like us to know about your experience with technology in your relationships?” These qualitative responses were not formally analyzed as part of the study but are provided in full in Appendix E.

Chapter 3: Results

Preliminary Analyses

SPSS software was used to conduct all data analyses. Unless otherwise noted, the alpha level for statistical tests was set at .05, two-tailed. Prior to conducting each analysis, corresponding assumptions of each test were evaluated, including assumptions for normality, linearity, homogeneity of variance, multicollinearity, and homogeneity of regression slopes where appropriate. Regarding missing data, mean-substitution was used for scale measures, provided that the participant had valid data for at least 60% of items in each scale. In addition, three individuals who reported inconsistently on their relationship status (i.e., initially reported that they were in a relationship in the screening measure but later indicated a relationship status of not together) were removed from any statistical analyses involving the relationship status variable.

Descriptive Statistics for study variables are presented in Tables 1 and 2. Using values identified by West, Finch, and Curran (1995), variables were considered to depart substantially from normality if skewness exceeded 2 and/or if kurtosis exceeded 7. Of the variables, average daily cell phone use, all Cyber Psychological Abuse perpetration and victimization scales, the MMEA perpetration and victimization total score and all subscales, the CTS Physical Assault victimization and perpetration scales, the DAST scale, and the CTQ Sexual Abuse Subscale were all univariately nonnormal. These variables were therefore log-transformed prior to analysis. Log transformation reduced skew and kurtosis to a more acceptable range among the majority of these variables, according to the criteria noted above.

Table 1.

Descriptive Statistics for Traditional Partner Aggression Victimization and Perpetration

Scale	Mean Incidents in past 12 Months	SD	Range	Skew	Kurtosis
MMEA– Total- P	35.40	57.69	0 – 420	3.43	14.89
MMEA –Restrictive Engulfment-P	10.49	19.69	0 – 130	3.30	12.95
MMEA – Denigration-P	4.95	14.93	0 – 150	5.70	42.80
MMEA – Hostile Withdrawal-P	16.96	25.97	0 - 175	3.34	14.03
MMEA–Dominance/Intimidation-P	3.10	10.47	0 - 94	5.36	34.62
MMEA– Total –V	44.90	77.15	0 – 493	3.02	10.88
MMEA–Restrictive Engulfment– V	12.22	24.87	0 – 175	3.71	17.31
MMEA – Denigration – V	6.79	18.25	0 - 150	4.33	22.76
MMEA – Hostile Withdrawal –V	19.97	32.18	0 – 175	2.80	8.77
MMEA – Dominance/Intimidation – V	5.90	1.55	0 - 140	4.52	23.67
CTS2 Physical Assault – P	4.02	19.77	0 – 167	6.83	48.50
CTS2 Physical Assault –V	5.83	25.61	0 - 205	5.55	31.93

Note. $N = 243$. N 's vary slightly due to missing data. MMEA = Multidimensional Measure of Emotional Abuse. CTS= Conflict Tactics Scales. P = Perpetration. V = Victimization.

Table 2.

Descriptive Statistics for Child Maltreatment, Behavioral/Psychopathology and Relationship Variables.

Variable	Mean	SD	Range	Skew	Kurtosis
Alcohol Use (AUDIT)	4.30	4.83	0 - 25	1.97	4.51
Drug Abuse (DAST)	1.12	2.54	0 - 18	3.99	18.62
Emotion Regulation Difficulties (DERS)	78.51	25.38	37 - 166	0.46	-0.29
Child Maltreatment-Emotional Abuse	9.71	5.63	5 - 25	1.14	0.20
Child Maltreatment – Physical Abuse	7.47	3.63	5 - 21	1.83	2.97
Child Maltreatment – Sexual Abuse	6.72	4.15	5 - 25	2.70	6.90
Child Maltreatment – Emotional Neglect	12.23	6.04	5 - 25	0.49	-0.94
Child Maltreatment – Physical Neglect	8.32	3.79	5 - 24	1.22	1.08
Cognitive Jealousy (MJS-C)	16.67	12.02	8 – 56	1.63	1.95
Emotional Jealousy (MJS-E)	40.04	8.56	8 – 56	-0.78	1.34
Behavioral Jealousy (MJS-B)	14.61	9.01	8 – 56	2.12	5.10
Attachment-Related Anxiety	48.99	26.41	18 – 121	0.75	-0.30
Attachment-Related Avoidance	47.00	22.81	18 – 112	0.55	-0.71
Communication Skills (CST)	44.47	11.90	16 – 70	-0.24	-0.26
Relationship Satisfaction	28.17	6.16	7 - 35	-1.04	0.82

Note. N = 243. N's vary slightly due to missing data.

However, the Severe Cyber Psychological Abuse Victimization and Perpetration scales and the CTQ Sexual Abuse Subscale remained non-normal following log transformation according to the above guidelines (CPA Severe Perpetration: skew = 3.50,

kurtosis = 11.55; CPA Severe Victimization: skew = 3.63, Kurtosis = 12.93). Log transformation of the CTS Physical Assault victimization and perpetration scales, as well as the CTQ Sexual Abuse Subscale reduced skew and kurtosis to just above acceptable limits (CTS2 Physical Assault Perpetration: skew = 2.88, kurtosis = 8.28; CTS2 Physical Assault Victimization: Skew = 2.77, kurtosis = 7.24; CTQ Sexual Abuse: Skew = 2.14, Kurtosis = 3.39).

Table 3 displays internal consistency estimates for the study variables. In this sample, according to guidelines suggested by DeVellis (2003), Cronbach's alpha estimates for almost all study variables were very good (i.e., above .80), with several scales having reliability estimates above .90 (e.g., Multidimensional Jealousy Scale, Attachment Insecurity subscales, relationship satisfaction, total emotional abuse perpetration). In this sample, Cyber Psychological Abuse Victimization total score and subscale scores had alphas ranging from .82 - .87, demonstrating good internal consistency. Alpha estimates for the Cyber Psychological Abuse Perpetration scales were also generally very good (.80 - .81 for total and minor cyber psychological abuse perpetration). Internal consistency reliability of the severe CPA perpetration subscale was slightly lower (.73), but still considered acceptable for analysis (i.e., above .70) (DeVellis, 2003).

Use of Technology Among Study Participants

Table 4 shows technology and social media use among study participants. On average, participants in the current sample reported sending 28 texts ($SD = 51.25$), receiving 29 texts ($SD = 54.14$), making 4 phone calls ($SD = 5.38$), and receiving 5 phone calls per day ($SD = 5.84$).

Table 3.

Cronbach's Alpha Coefficients for Study Measures.

Variables	Cronbach's Alpha
Computer Mediated Communication (CMC)	.86
Social Media Use Integration Scale (SMUIS)	.88
Cyber Psychological Abuse Perpetration (CPA) -Total	.81
Minor Cyber Abuse Subscale	.80
Severe Cyber Abuse Subscale.	.73
Cyber Psychological Abuse Victimization (CPA)-Total.	.83
Minor Cyber Abuse Subscale	.82
Severe Cyber Abuse Subscale	.87
Emotional Abuse Perpetration Total (MMEA)	.93
Restrictive Engulfment Subscale	.84
Denigration Subscale	.87
Hostile Withdrawal Subscale	.91
Dominance/Intimidation Subscale	.87
Physical Assault Perpetration (CTS)	.94
Physical Assault Victimization (CTS2)	.94
Emotional Abuse Victimization Total (MMEA)	.95
Restrictive Engulfment Subscale	.90
Denigration Subscale	.86
Hostile Withdrawal Subscale	.94
Dominance/Intimidation Subscale	.88
Child Maltreatment-Emotional Abuse	.92
Child Maltreatment-Physical Abuse	.81
Child Maltreatment-Sexual Abuse	.95
Child Maltreatment-Emotional Neglect	.92
Child Maltreatment-Physical Neglect	.73
Cognitive Jealousy (MJS-C)	.96
Emotional Jealousy (MJS-E)	.88
Behavioral Jealousy (MJS-B)	.91
Attachment Related Anxiety (ECR-R)	.96
Attachment Related Avoidance (ECR-R)	.96
Communication Skills (CST)	.88
Relationship Satisfaction	.93

Note. $N = 243$; N 's vary slightly due to missing data.

Table 4.

Descriptive Statistics for Technology Use Variables.

Technology Variable	Percent of Sample	Mean	SD	Range	Skew	Kurtosis
Daily Cell Phone Use (Number of Texts/Calls)	-	66.10	104.56	0 – 624.50	4.00	17.45
Minutes of Internet Use (Excluding SNS and MTurk)	-	397.80	303.30	42.5 – 1836.0	1.54	2.89
SMUIS – Social Media Use Integration	-	38.56	9.22	11 - 60	-0.24	0.29
Technology Proficiency	-	72.67	8.95	47 - 90	-0.54	-0.15
FIS – Number of Social Media Contacts						
10 or less	4.1%					
11 – 50	11.9%					
51 – 100	18.5%					
101 – 150	11.9%					
151 – 200	10.7%					
201 – 250	8.2%					
251 – 300	8.2%					
301 – 400	8.2%					
More than 400	18.1%					
FIS- Minutes spent on Social Media Per Day						
Less than 10	8.2%					
10 – 30 minutes	21.8%					
31 – 60 minutes	26.3%					
1 – 2 hours	18.9%					
2 – 3 hours	10.7%					
More than 3 hours	14.0%					

Note. N = 243.

As shown in the table, participants, on average, sent and received approximately 66 phone calls and texts daily ($SD = 104.56$). Regarding internet use, not including time spent on social networking site and time spent completing tasks on Mturk, participants reported spending an average of 397 minutes (6.62 hours, $SD = 303.30$) online per day. With regard to time on social media, approximately a quarter of individuals reported they spent between 31-60 minutes per day on their most-frequently-used SNS (26.3%), with 21.8% reporting they spent 10-30 minutes per day, 18.9% reporting they spent 1-2 hours per day, 10.7% reporting they spent 2-3 hours per day, 14.0% reporting they spent more than three hours per day, and 8.2% reporting they spent less than 10 minutes per day. Number of social media contacts on their preferred SNS was bimodal, with 18% of individuals reporting they had 51-100 contacts and 18% reporting more than 400 social media contacts on their most commonly used SNS. Mean scale scores for technology proficiency and extent of social media use integration are presented in Table 4.

Prevalence of Traditional Partner Aggression

Mean frequency scores for Emotional Abuse and Physical Assault victimization and perpetration are presented in Table 1. Participants reported that they perpetrated an average of 35 emotionally abusive behaviors in the past year ($SD = 57.69$) and were victimized by an average of 44.90 emotionally abusive behaviors in the past year. With regard to physical assault, 17.3% of participants ($n = 42$) reported perpetrating at least one act of physical assault in the past year toward a relationship partner, and participants reported an average of 4.02 acts of perpetration ($SD = 19.77$). With regard to physical assault victimization, 18.5% of participants ($n = 45$) reported being victimized by at least

one instance of physical assault during the past year, and participants reported 5.83 acts of victimization (SD = 25.61). In addition, of the 224 individuals who completed the full Sexual Experiences Survey, 12.3% (n = 30) reported perpetration of sexual coercion or assault toward an intimate partner during the past year.

Aim 1: Prevalence of Cyber Psychological Abuse

The first aim of the study was to determine the proportion of adult individuals who report perpetrating and being victimized by cyber psychological abuse. To examine these proportions, each of the Cyber Psychological Abuse scale's victimization and perpetration items were recoded into dichotomous variables representing the presence or absence of each behavior in the past 12-months. The proportion of individuals who reported perpetrating or being victimized by at least one of these behaviors in the past 12 months was computed. These proportions, along with proportions and mean frequencies of each behavior are displayed in Table 5 (perpetration) and Table 6 (victimization). Notably, frequency of perpetration and victimization behaviors were similar across both minor and severe cyber psychological abuse behaviors. With regard to perpetration, three quarters (75.3%) of individuals reported they engaged in at least one instance of CPA in the past year, with 9.5% indicating they perpetrated a severe act of cyber psychological abuse such as posting inappropriate pictures or embarrassing information online to humiliate their partner. Similarly, with regard to victimization, approximately three quarters (71.2%) of individuals reported their (ex)partner had engaged in at least one act of cyber psychological abuse in the past year against them, with approximately 10%

indicating that they have been victimized by at least one instance of severe cyber intimate partner abuse in the past year.

Table 5.

Prevalence of Cyber Psychological Abuse Perpetration.

Item/Scale	Proportion Endorsing Behavior	M	SD	Range	Skew	Kurtosis
Minor Cyber Abuse Items						
<i>Item 1a.</i> Have you used capital letters to “shout” at your partner in an email, instant message, text message, or social networking site?	40.7% (n = 99)	2.16	4.70	0 - 25	3.34	12.48
<i>Item 2a.</i> Have you insulted your partner in an email, instant message, text message, or on a social networking site?	30.0% (n = 73)	1.45	4.13	0 - 25	4.41	21.02
<i>Item 3a.</i> Have you abruptly stopped emailing, instant messaging, or text messaging during a disagreement?	59.7% (n = 145)	2.58	3.92	0 – 25	3.11	13.03
<i>Item 6a.</i> Have you sworn at your partner in an email, instant message, text message, or on a social networking site?	34.2% (n = 83)	2.31	1.70	0 – 25	3.20	10.20
<i>Item 7a.</i> Have you called your partner names in an email, instant message, text message, or on a social networking site?	23.5% (n = 57)	1.26	3.94	0 – 25	4.88	25.73

<i>Item 8a.</i> Have you kept tabs on your partner by checking their email messages, messages on their cell phone, or inbox on a social networking site?	35.4% (n = 86)	2.46	5.52	0 - 25	2.98	8.65
Severe Cyber Abuse Perpetration Items						
<i>Item 4a.</i> Have you posted inappropriate pictures or embarrassing information online to humiliate your partner?	7.0% (n = 17)	0.41	2.24	0 - 25	8.04	73.86
<i>Item 5a.</i> Have you threatened to harm your partner in an email, instant message, text message, or on a social networking site?	6.6% (n = 16)	0.33	1.70	0 - 25	6.73	50.16
<i>Item 9a.</i> Have you sent an email to others about your partner in order to hurt or embarrass your partner?	7.4% (n = 18)	0.50	2.68	0 - 25	7.45	61.25
Minor Cyber Abuse Perpetration	75.3% (n = 183)	12.22	19.77	0 - 119	2.79	8.78
Severe Cyber Abuse Perpetration	9.5% (n = 23)	1.24	5.41	0 - 48	5.67	36.08
Total Cyber Abuse Perpetration	75.3% (n = 183)	13.46	22.78	0 - 137	2.82	8.64

Note. N = 243.

Table 6

Prevalence of Cyber Psychological Abuse Victimization.

Item/Scale	Proportion Endorsing Behavior	<i>M</i>	<i>SD</i>	Range	Skew	Kurtosis
Minor Cyber Abuse Items						
<i>Item 1b.</i> Has your partner used capital letters to “shout” at you in an email, instant message, text message, or on a social networking site?	63.0% (n = 153)	2.30	5.24	0 - 25	3.27	10.94
<i>Item 2b.</i> Has your partner insulted you in an email, instant message, text message, or on a social networking site?	30.9% (n = 75)	1.47	3.99	0 - 25	4.58	23.34
<i>Item 3b.</i> Has your partner abruptly stopped emailing, instant messaging, or text messaging during a disagreement?	54.3% (n = 132)	2.59	4.47	0 – 25	3.15	11.90
<i>Item 6b.</i> Has your partner sworn at you in an email, instant message, text message, or on a social networking site?	35.0% (n = 85)	2.44	5.69	0 – 25	3.10	9.11
<i>Item 7b.</i> Has your partner called you names in an email, instant message, text message, or on a social networking site?	23.5% (n = 57)	1.38	4.20	0 – 25	4.37	20.25
<i>Item 8b.</i> Has your partner kept tabs on you by checking your email messages, messages on your cell phone, or inbox messages on a social networking site?	29.6% (n = 72)	2.27	5.70	0 - 25	3.18	9.47
Severe Cyber Abuse Items						
<i>Item 4b.</i> Has your partner	7.0% (n = 17)	0.34	1.66	0 – 25	6.82	52.76

posted inappropriate pictures
or embarrassing information
online to humiliate you?

<i>Item 5b.</i> Has your partner threatened to harm you in an email, instant message, text message, or on a social networking site?	7.0% (n = 17)	0.47	2.62	0 - 25	7.83	67.00
<i>Item 9b.</i> Has your partner sent an email about you to others in order to hurt or embarrass you?	7.4% (n = 18)	0.39	2.22	0 - 25	8.28	77.36
Minor Cyber Abuse Victimization	71.6% (n = 174)	12.45	21.37	0 - 119	2.80	8.33
Severe Cyber Abuse Victimization	9.9% (n = 24)	1.20	5.88	0 - 65	7.55	68.20
Total Cyber Abuse Victimization	71.2% (n = 174)	13.68	24.43	0 – 147	2.91	9.08

Note. N =243.

The most frequently endorsed act of cyber perpetration was, “Have you abruptly stopped emailing, instant messaging, or text messaging during a disagreement” (59.7%), whereas the most frequently reported cyber psychological abuse victimization behavior was “has your partner used capital letters to ‘shout’ at you in an email, instant message, text message, or on a social networking site?” (63.0%).

Additionally, follow-up analyses were conducted to see if individuals who reported no CPA perpetration in the past year (i.e., did not endorse any of the CPA-P items) differed from those who perpetrated any CPA perpetration on a number of key demographic variables. A series of independent sample t-test analyses indicated that there were no significant differences between individuals who did and did not perpetrate CPA in the past year based on age, $t(241) = 2.96, p = .003$, years of education, $t(241) = -0.27, p = .786$, or income $t(241) = -0.29, p = .77$. Additionally, Chi-Square tests indicated there were no significant differences between the two groups with respect to whether the participant was employed, $\chi^2(1) = 0.61, p = .804$, racial/ethnic group, $\chi^2(5) = 4.78, p = .443$, or whether the participants were dating, cohabitating, married, or no longer together/divorced, $\chi^2(5) = 4.78, p = .443$.

Aim 2: Bivariate Relations Between Cyber Psychological Abuse and Traditional Forms of Partner Abuse.

The second aim of the study was to examine the strength of the relation between cyber psychological abuse perpetration and specific types of traditional intimate partner abuse, namely physical assault, sexual coercion, and emotional abuse. Specifically, it was expected that greater cyber psychological abuse perpetration will be associated with greater physical assault perpetration, greater sexual coercion perpetration, and greater

emotional abuse perpetration. To test this hypothesis, bivariate Pearson (or point-biserial for dichotomous variables) correlations were computed between the cyber psychological abuse frequency scores and each of the following forms of traditional intimate partner abuse: CTS2 physical assault frequency scores, the dichotomized “aggressor”/“nonaggressor” score from the SES, and each of the four MMEA perpetration subscale frequency totals.

Table 7 shows the intercorrelations among the cyber psychological abuse subscales, Table 8 displays intercorrelations among the traditional abuse scales, and Table 9 displays the correlation matrix of traditional abuse scales with CPA scales.

Table 7

Intercorrelations among Cyber Psychological Abuse Subscales.

Variables	1	2	3	4	5.	6
1. Cyber Psychological Abuse – Total-P	-	.47***	.99***	.84***	.45***	.84***
2. Cyber Psychological Abuse – Severe-P		-	.41***	.47***	.88***	.39***
3. Cyber Psychological Abuse – Minor-P			-	.84***	.40***	.84***
4. Cyber Psychological Abuse- Total-V				-	.46***	.99***
5. Cyber Psychological Abuse- Severe-V					-	.40***
6. Cyber Psychological Abuse- Minor-V						-

Note. N=243. N’s vary slightly due to occasional missing data. P= Perpetration, V=Victimization. All CPA scales were log transformed prior to analysis due to nonnormality. * indicates significance at the .05 level, ** indicates significance at the .01 level and *** indicates significance at the .001 level.

Table 8

Intercorrelations Among Traditional Abuse Scales.

Variables	1	2	3	4	5.	6	7	8	9	10	11	12	13
1. MMEA- Total-P	-	.78***	.62***	.93***	.56***	.78***	.63***	.57***	.74***	.56***	.47***	.42***	.27***
2. MMEA- RE-P		-	.59***	.58***	.54***	.66***	.63***	.52***	.60***	.53***	.47***	.42***	.30***
3. MMEA-D-P			-	.47***	.68***	.56***	.57***	.70***	.47***	.54***	.58***	.49***	.38***
4. MMEA-HW-P				-	.42***	.71***	.53***	.45***	.73***	.48***	.35***	.30***	.19***
5. MMEA – DI-P					-	.49***	.53***	.57***	.42***	.71***	.75***	.67***	.40***
6. MMEA- Total-V						-	.79***	.69***	.92***	.67***	.41***	.45***	.28***
7. MMEA- RE-V							-	.61***	.59***	.61***	.46***	.49***	.34***
8. MMEA-D-V								-	.55***	.71***	.48***	.56***	.31***
9. MMEA-HW-V									-	.57***	.32***	.30***	.15*
10. MMEA-DI-V										-	.60***	.66***	.36***
11. CTS- PA-P											-	.86***	.48***
12. CTS-PA-V												-	.43***
13. SES-SF-P													-

Note. N=243. N's vary slightly due to occasional missing data. P= Perpetration, V=Victimization. RE=Restrictive Engulfment. D= Denigration, HW=Hostile Withdrawal. DI=Dominance/Intimidation; CPA = Cyber Psychological Abuse. MMEA= Multiphasic Measure of Emotional Abuse. CTS= Conflict Tactics Scales. PA= Physical Assault. SES-SF-P = Sexual Experiences Survey- Short Form Perpetration. CPA, CTS, and MMEA scales were log transformed prior to analysis due to nonnormality. * indicates significance at the .05 level, ** indicates significance at the .01 level and *** indicates significance at the .001 level.

Table 9.

Correlations Between Cyber Psychological Abuse (CPA) and Traditional Forms of Partner Abuse.

Variable	Cyber Psychological Abuse Perpetration					
	CPA Perpetration - Minor	CPA Perpetration - Severe	CPA Perpetration - Total	CPA Victimization - Minor	CPA Victimization - Severe	CPA Victimization - Total
Emotional Abuse – Total-P	.65***	.35***	.66***	.58***	.40***	.59***
Restrictive Engulfment-P	.59***	.39***	.60***	.47***	.45***	.49***
Denigration-P	.52***	.57***	.54***	.48***	.62***	.51***
Hostile Withdrawal-P	.56***	.23***	.56***	.49***	.26***	.50***
Dominance/Intimidation-P	.41***	.63***	.44***	.39***	.68***	.43***
Emotional Abuse – Total -V	.62***	.34***	.62***	.65***	.39***	.66***
Restrictive Engulfment -V	.53***	.37***	.55***	.62***	.44***	.63***
Denigration-V	.49***	.47***	.51***	.52***	.56***	.54***
Hostile Withdrawal - V	.56***	.24***	.56***	.58***	.27***	.59***
Dominance/Intimidation-V	.42***	.53***	.45***	.44***	.59***	.47***
Physical Assault – P	.36***	.63***	.39***	.34***	.70***	.38***
Physical Assault – V	.30***	.62***	.33***	.33***	.70***	.37***
Sexual Coercion- P	.38***	.53***	.41***	.36***	.52***	.39***

Note: N=243. N's vary slightly due to occasional missing data. P= Perpetration, V=Victimization. CPA = Cyber Psychological Abuse. CPA, CTS, and MMEA scales were log transformed prior to analysis due to nonnormality. * indicates significance at the .05 level, ** indicates significance at the .01 level and *** indicates significance at the .001 level.

As shown in Table 9, results support the hypothesis that cyber aggression perpetration is related to perpetration of traditional partner abuse. Overall, all of the CPA Perpetration scales (total, minor, and severe) were significantly associated in a positive direction with perpetration of each of the forms of traditional partner aggression, including frequency of emotional abuse (total and all subscales), frequency of physical assault, and whether or not the person reported any sexual coercion, and the strength of the relations varied from moderate to strong. With regard to the relation between perpetration of cyber psychological abuse and traditional emotional abuse (MMEA), results indicated strong positive correlations between total emotional abuse perpetration and both total cyber psychological abuse perpetration ($r = .66, p < .001$) and minor cyber psychological abuse perpetration ($r = .65, p < .001$). There were also strong, positive relations between each of the perpetration subscales of the MMEA with both total and minor cyber psychological abuse perpetration (r 's ranging from .41 - .66, all p 's $< .001$). With regard to severe cyber psychological abuse perpetration, the association between total emotional abuse perpetration and severe cyber psychological abuse perpetration was significant and moderate in magnitude ($r = .35, p < .001$). However, severe cyber psychological abuse was strongly and positively related to dominance/intimidation perpetration ($r = .63, p < .001$), with the other subscales having more moderate relations with severe cyber psychological abuse (Restrictive Engulfment: $r = .39, p < .001$; Hostile Withdrawal: $r = .23, p < .001$).

With regard to the relationship between cyber psychological abuse and physical assault perpetration, there were strong, positive correlations between frequency of physical assault and severe cyber psychological abuse perpetration ($r = .62, p < .001$). In

addition, those who reported perpetration of sexual coercion were likely to report greater frequency of severe cyber aggression perpetration ($r = .53, p < .001$) as well as minor ($r = .38, p < .001$) and total cyber aggression perpetration ($r = .41, p < .001$).

Correlations between the CPA victimization scales and measures of traditional intimate partner aggression indicated positive and significant correlations between all three CPA victimization scales and all scales of emotional abuse perpetration and victimization, as well as with physical assault perpetration, physical assault victimization, and sexual coercion perpetration.

Aim 3: Relation between cyber psychological abuse perpetration and technology factors.

The third aim of the study was to examine how technological factors correlate with intimate partner cyberaggression. Specifically, it was expected that greater daily cell phone use, daily time spent online, daily social networking site use, and ICT competence would be associated with greater cyberaggression perpetration. The relationships between cyber psychological abuse victimization and technology factors were also explored. Pearson correlations were calculated between the total CPA perpetration frequency scales and CPA victimization frequency scales (both minor, severe, and total) with daily cell phone use, daily time spent on the internet (excluding SNS use), daily time spent on the most-used SNS, number of social media contacts, Computer Mediated Communication total score (competence), and the Social Media Use Integration total score. These correlation coefficients and their significance are displayed in Table 10 for CPA perpetration and Table 11 for CPA victimization.

Table 10.

Correlations Between Cyber Psychological Abuse Perpetration and Technology Variables.

	Cyber Psychological Abuse Perpetration		
	Total	Minor	Severe
Daily Cell Phone Use	.28***	.28***	.08
Daily Internet Use (excluding SNS)	.16*	.16*	.09
SNS Use – Time spent on SNS	.23***	.24***	.08
SNS Use - Number of Social Media Contacts	.02	.02	.08
SNS Use- Social Media Use Integration	.17**	.18**	-.01
Technology Proficiency	-.04	-.01	-.38***

Note. N=243. All CPA scales and cell phone use scale were log transformed prior to analysis due to nonnormality. * indicates significance at the .05 level, ** indicates significance at the .01 level and *** indicates significance at the .001 level.

Results showed that the number of social media contacts was not related to cyber psychological abuse perpetration. Daily cell phone use, internet use, social networking site use, and amount of social media integration were all moderately related to perpetration of minor and total (but not severe) cyber psychological abuse such that greater use of each technology and greater integration of social media into one’s life were associated with greater frequency of perpetration of minor cyber psychological abuse (e.g., keeping tabs on one’s partner). In contrast, technology proficiency was moderately related to perpetration of severe but not minor or total perpetration of cyber psychological abuse, such that lower levels of technology proficiency were associated with greater perpetration of cyber psychological abuse.

Table 11.

Correlations Between Cyber Psychological Abuse Victimization and Technology

Variables.

	Cyber Psychological Abuse Victimization		
	Total	Minor	Severe
Daily Cell Phone Use	.28***	.29***	.13*
Daily Internet Use (excluding SNS)	.12	.12	.16*
SNS Use – Time spent on SNS	.18**	.19**	.10
SNS Use - Number of Social Media Contacts	.02	.02	.03
SNS Use- Social Media Use Integration	.12	.13*	-.01
Technology Proficiency	-.05	-.02	-.34***

Note. N=243. All CPA scales and cell phone use scale were log transformed prior to analysis due to nonnormality. * indicates significance at the .05 level, ** indicates significance at the .01 level and *** indicates significance at the .001 level.

In addition, to examine the collective association between technological factors and cyber psychological abuse, the log-transformed total CPA perpetration score was regressed on the four technological factors that had significant zero-order correlations with total CPA perpetration as noted above. Results from this regression model indicated that technological factors accounted for 13% of the variance in total cyber psychological abuse perpetration, $F(4, 242) = 8.73, p < .001$. Examining each technological factor separately revealed that there was a unique effect of cell phone use, $B = 0.29, t(242) = 3.92, p < .001$ and average daily time spent on social media, $B = 0.06, t(242) = 2.07, p = .039$; however, average time spent using the internet $B = 0.11, t(242) = 1.24, p = .215$ and

social media integration, $B = 0.01$, $t(242) = 1.10$, $p = .271$, were no longer related to cyber psychological abuse perpetration when controlling for the other technological variables in the model.

With regard to cyber psychological abuse victimization and technology use, similar patterns were observed between cyber psychological abuse victimization and the technology variables, as shown in Table 11. Notably, positive and moderate correlations were observed between minor and severe cyber psychological abuse victimization with cell phone use and social networking site use. Also notable is the fact that severe cyber psychological abuse victimization was associated with lower levels of technology proficiency. To examine the collective association between technological factors and cyber psychological abuse victimization, the log-transformed total CPA perpetration score was regressed on the two technology factors that were correlated with total CPA perpetration: average daily cell phone use and average daily social networking site use. Results from this regression model indicated that as a set, the two technological factors accounted for 10% of the variance in total cyber psychological abuse victimization, $F(2, 242) = 13.83$, $p < .001$. Each technological variable in the model uniquely predicted total cyber psychological abuse victimization when accounting for the other ($B = 0.33$, $t(242) = 4.32$, $p < .001$ for daily cell phone use; $B = 0.06$, $t(242) = 2.49$, $p = .014$ for daily time spent on social media).

Aims 4 and 5: Traditional Risk Factors for Intimate Partner Violence as Predictors of Cyber Psychological Abuse

Data Analytic Strategy.

The fourth aim of the study was to determine whether previously established risk factors for partner violence are associated with CPA perpetration among intimate partners. Specifically, demographic factors, child maltreatment, behavioral/psychopathology factors, and relationship factors were examined as predictors of cyber psychological abuse perpetration. Associations between these risk factors and cyber psychological abuse victimization were also investigated (Aim 5).

These associations for both victimization and perpetration of cyber psychological abuse were tested in two stages. First, the relations between each correlate and the total, minor, and severe CPA scores were examined (Pearson correlation coefficients for continuous variables and t-tests and Analysis of Variance (ANOVAs) for categorical variables). To test the unique relation of each predictor of interest with cyber psychological abuse as well as the collective association of each set of predictor variables, a six-block hierarchical regression was estimated with CPA as the outcome. Demographic factors that were correlated with CPA perpetration and victimization respectively were entered in the first block of both models, followed by childhood maltreatment in the second block; behavioral/psychological factors in the third block, relational factors in the fourth block, traditional partner abuse in the fifth block (MMEA and CTS perpetration frequency scores for models of CPA perpetration and MMEA/CTS victimization frequency scores for models of CPA victimization), and technology use in the final block. This order of entry was chosen to reflect previous integrative models of

traditional intimate partner violence (e.g., O’Leary et al., 2007; O’Leary et al., 2014; Stith et al., 2004) that reflect the temporal nature of the predictors, with distal and stable predictors entered into the model before more proximal variables that are intrapersonal or dependent on the relational context. Predictors of interest in both hierarchical multiple regressions were restricted to those that had significant associations with total cyber psychological abuse perpetration at the alpha level of .05 for the perpetration model, or significant associations with total cyber psychological abuse victimization at the alpha level of .05. In addition, regarding technological variables, only daily cell phone use and SNS use were entered into multivariate models, as they were the only significant technological predictors of total cyber psychological abuse perpetration and victimization when controlling for the other technological factors. Individual regression coefficients for each predictor at initial entry into the model, regression coefficients for each predictor in the full model (model 6), the test of the change in R^2 for each additional block, and the overall test of R^2 for the full model were then examined for significance. Finally, each hierarchical regression was repeated separately for males and females to explore potential differences in the prediction models by sex for each block of predictors (e.g., impact of psychological variables on total CPA perpetration)(see Appendix F).

Correlates of cyber psychological abuse perpetration.

Table 12 displays total cyber psychological abuse perpetration as a function of sex, employment status, relationship status, and self-reported race. As shown in the table, there were no significant differences in total CPA perpetration between those who were employed and those who were not. However, females reported perpetrating significantly more incidents of cyber psychological abuse during the past year than males. In addition,

individuals who identified as nonwhite reported perpetrating significantly more CPA perpetration than those who identified as white. Significant omnibus differences in CPA perpetration were also observed with regard to relationship status, with Bonferroni post hoc tests indicating that cohabitating couples reported perpetrating more total cyber psychological abuse in the past year than those who were married ($p = .027$); however, there were no significant differences between the other groups. Thus, relationship status, sex, and race were included in the multivariate models.

Table 12.

Total Cyber Psychological Abuse Perpetration as a Function of Demographics.

Variable	Mean incidents (SD) perpetrated in past 12-months	Test Result	<i>P</i>	Effect Size
Sex				
Male (n = 113)	12.65 (22.91)	$t(240) = 2.03$	.043	D = 0.26
Female (n = 129)	14.27 (22.77)			
Employment Status				
Employed (n = 201)	14.09 (23.56)	$t(241) = 0.59$	.558	D = 0.08
Not Employed (n = 42)	10.40 (18.49)			
Race				
White (n = 188)	11.68 (20.76)	$t(241) = 2.60$	.010	D = 0.33
Nonwhite (n = 55)	19.54 (27.99)			
Relationship Status				
Dating and not living together (n= 81)	14.10 (24.39)	$F(3,236) = 2.80$	.041	$\eta^2_p = .03$
Dating and cohabitating (n = 73)	16.89 (24.56)			
Married and living together (n = 79)	8.11 (13.23)			
Divorced or no longer dating (n = 7)	20.86 (43.51)			

Note: Mean incidents perpetrated was computed using raw scores. Due to nonnormality of CPA Perpetration total scores, statistical tests were run using log transformed CPA scores. Levene's tests of homogeneity of variances for all analyses were all p 's > .05.

Table 13 displays zero-order correlations between total, minor and severe cyber psychological abuse perpetration with income, years of education, age, child maltreatment, behavioral/psychopathology variables, and relationship factors. Income and years of education were not significantly correlated with total, minor, or severe CPA perpetration. Age was significantly related to perpetration of minor, severe, and total CPA perpetration such that younger age was associated with more perpetration of CPA in the past year. With regard to child maltreatment, with the exception of the relationship between child emotional abuse and severe CPA perpetration, all five subscales of the CTQ were positively correlated with total, minor, and severe CPA perpetration, with the magnitude of associations ranging from small to moderate. In addition, all three behavioral/psychopathology variables (alcohol use, drug use, emotion regulation) were positively and moderately correlated with total, minor, and severe CPA perpetration such that greater problematic alcohol use, drug use, and more difficulties in emotion regulation were associated with more incidents of CPA perpetration in the past year.

With regard to the relational factors, attachment-related anxiety and attachment-related avoidance were moderately and positively correlated with total, minor, and severe CPA perpetration. As predicted, both the communication skills test score and relationship satisfaction score were inversely and moderately related to total, minor, and severe CPA perpetration, such that those who reported being less satisfied in their relationships and those with poorer communication skills reported greater cyber psychological abuse perpetration. Finally, cognitive jealousy and behavioral jealousy were positively correlated with total, minor, and severe CPA perpetration, with the magnitude of

Table 13.

Zero-order Correlations Between Cyber Psychological Abuse (CPA) Perpetration and Demographic, Child Maltreatment, Behavioral/Psychopathology, and Relationship Variables.

Variable	Cyber Psychological Abuse (CPA) Perpetration		
	Total	Minor	Severe
Income	-.07	-.06	-.06
Years of Education	-.07	-.07	.04
Age	-.18**	-.18**	-.18**
Child Maltreatment (CTQ)			
CTQ – Emotional Abuse	.18**	.18**	.06
CTQ – Physical Abuse	.33***	.32***	.24***
CTQ – Emotional Neglect	.15*	.14*	.14*
CTQ- Physical Neglect	.16*	.15*	.30***
CTQ – Sexual Abuse	.27***	.26***	.31***
Problematic Alcohol Use (AUDIT)	.24***	.22***	.28***
Problematic Drug Use (DAST)	.24***	.22**	.33***
Difficulties in Emotion Regulation (DERS)	.27***	.26***	.28***
Behavioral Jealousy (MJS-B)	.57***	.55***	.45***
Cognitive Jealousy (MJS-C)	.39***	.37**	.37***
Emotional Jealousy (MJS-E)	.12	.14*	-.23***
Attachment Related Anxiety	.38***	.37***	.27***
Attachment Related Avoidance	.22***	.21**	.22**
Communication Skills (CST)	-.23***	-.23***	-.16*
Relationship Satisfaction	-.33***	-.33***	-.33***

Note: N=243. All CPA Scales, The DAST, and the CTQ Sexual Abuse Scale were log transformed due to nonnormality. * indicates significance at the .05 level, ** indicates significance at the .01 level and *** indicates significance at the .001 level.

associations ranging from moderate (cognitive jealousy) to strong (behavioral jealousy). However, emotional jealousy was not significantly related to overall CPA perpetration or minor CPA perpetration, but was inversely and moderately correlated with severe CPA perpetration. Thus, lower emotional jealousy was associated with greater perpetration of severe cyber psychological abuse.

Multivariate models of cyber psychological abuse perpetration.

The above significant correlates of total CPA perpetration were entered into a 6-step hierarchical regression model with total cyber psychological abuse perpetration as the dependent variable. The resulting beta coefficients, R^2 and test of R^2 , and test of R^2 change for each model are displayed in Tables 14 and 15. Model 1 (demographic factors only) explained 8% of the variance in total cyber psychological abuse perpetration and was significant, $F(6, 238) = 3.44, p = .003$. Of the demographic variables in Model 1, only age maintained a unique contribution relative to the other variables in the model, $\beta = -.13, t(232) = -2.01, p = .046$.

Model 2 added the five child maltreatment subscales. The addition of the child maltreatment scales contributed significantly to the regression model (R^2 change = .11, $F(5, 227) = 5.99, p < .001$) and the overall model accounted for 19% of the variance in total CPA perpetration, $F(11, 238) = 4.81, p < .001$. Regarding the individual predictors, of the five CTQ subscales, only the CTQ physical abuse $\beta = .29, t(227) = 3.49, p = .001$ and CTQ sexual abuse, $\beta = .15, t(227) = 2.17, p = .031$ uniquely predicted total CPA perpetration.

Table 14.

Hierarchical Regression Analysis Predicting Total Cyber Psychological Abuse Perpetration.

Variable	Model 1			Model 2			Model 3		
	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β
Demographics									
Age	.00*	<.01	-.13*	-.01	<.01	-.10	.00	<.01	-.04
Sex	-.14	.07	-.12	-.08	.07	-.07	-.08	.07	-.07
Race	.14	.09	.11	.12	.08	.08	.13	.09	.09
Dating	-.05	.23	-.04	-.17	.22	-.13	-.23	.22	-.19
Cohabiting	.08	.23	.06	.00	.22	-.00	-.07	.22	-.05
Married	-.13	.23	-.10	-.22	.22	-.17	-.24	.22	-.19
Child Maltreatment									
CTQ Emotional Abuse				-.01	.01	-.05	.00	.01	-.02
CTQ Physical Abuse				.04**	.01	.29**	.05***	.01	.29***
CTQ Emotional Neglect				.00	.01	-.03	-.01	.01	-.07
CTQ Physical Neglect				.00	.01	.01	.00	.01	-.02
CTQ Sexual Abuse				.55*	.25	.15*	.32	.25	.09
Psychological Variables									
Problematic Alcohol Use							.02*	.01	.16*
Problematic Drug Use							.07	.15	.03
Difficulties in Emotion Regulation							.00*	<.01	.15*
Model R²	.08**			.19***			.24***		
R² Change	.08**			.11***			.05***		

Note. N=239. Not together/divorced serving as the reference group for relationship status. CPA Total Perpetration, CTQ Sexual Abuse, and Problematic Drug Use (DAST) were log transformed prior to analysis.

Model 3 added the three behavioral/psychopathology factors as predictors of total CPA perpetration. Introducing alcohol use, drug use, and difficulties in emotion regulation as a set explained an additional 5% of the variance in CPA perpetration and this change was significant, R^2 change = .05, $F(3,224) = 4.64$, $p = .004$. Again, the overall model significantly predicted CPA perpetration ($R^2 = .24$, $F(14,238) = 4.95$, $p < .001$). Regarding the individual psychological predictors, significant unique predictors in this model included problematic alcohol use $\beta = .16$, $t(224) = 2.39$, $p = .018$ and difficulties in emotion regulation $\beta = .15$, $t(224) = 2.11$, $p = .036$. Problematic drug use was not related to CPA perpetration in this model, $\beta = .03$, $t(224) = 0.44$, $p = .664$.

Table 15.

Hierarchical Regression Analysis Predicting Total Cyber Psychological Abuse Perpetration (continued).

Variable	Model 4		Model 5				Model 6		
	<i>B</i>	<i>SE</i>	<i>B</i>	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	<i>B</i>
Demographics									
Age	.00	<.01	-.07	.00	<.01	-.07	.00	<.01	-.02
Sex	-.02	.07	-.02	.00	.06	.00	.03	.06	.02
Race	.06	.08	.05	.01	.07	.01	.02	.07	.01
Dating	-.05	.20	-.04	-.07	.18	-.06	-.03	.18	-.02
Cohabiting	-.06	.20	-.04	-.05	.18	-.04	.03	.18	.02
Married	-.09	.21	-.07	-.13	.19	-.10	-.06	.18	-.04
Child Maltreatment									
CTQ Emotional Abuse	.01	.01	.06	.01	.01	.04	.00	.01	.03
CTQ Physical Abuse	.01	.01	.09	.01	.01	.07	.01	.01	.06
CTQ Emotional Neglect	-.01	.01	-.10	-.01	.01	.05	.00	.01	-.01
CTQ Physical Neglect	-.01	.01	-.04	-.01	.01	-.04	-.01	.01	-.05
CTQ Sexual Abuse	.25	.23	.07	.12	.21	.03	.14	.20	.04
Psychological Variables									
Problematic Alcohol Use	.02*	.01	.15*	.01	.01	.09	.01	.01	.05
Problematic Drug Use	-.15	.14	-.07	-.23	.13	-.11	-.22	.12	-.11
Difficulties in Emotion Regulation	.00	<.01	.10	.00	<.01	.10	.00	<.01	.11
Relationship Variables									
Behavioral Jealousy	1.29***	.22	.43***	.85***	.20	.28***	.86***	.20	.28***
Cognitive Jealousy	.00	<.01	.04	.00	<.01	-.04	.00	<.01	-.04
Attachment Anxiety	.00	<.01	-.04	.00	<.01	.02	.00	<.01	.02
Attachment Avoidance	.00	<.01	-.03	.00	<.01	-.08	.00	<.01	-.08
Communication Skills	.00	<.01	-.02	.00	<.01	.05	.00	<.01	.04
Relationship Satisfaction	-.02*	.01	-.16*	-.01	<.01	-.07	-.01	.01	-.10
Traditional Abuse									
Physical Assault- P				.06	.09	.04	.06	.08	.04
Emotional Abuse -P				.40***	.06	.46***	.35***	.06	.40***
Technology Variables									
Daily Cell Phone Use							.22**	.06	.18**
Daily SNS Use							.03	.02	.07
Model R²		.41***			.53***			.57***	
R² change		.18***			.12***			.03**	

Note. N=139. Not together/divorced serving as the reference group for relationship status. CTQ Sexual Abuse, Problematic Drug Use (DAST), Behavioral Jealousy (MJS-B), Emotional Abuse Perpetration (MMEA), Physical Assault (CTS) and daily cell phone use were log transformed prior to analysis.

In Step 4, the relationship-related variables were added to the regression model. There was a significant improvement in model fit from Model 3 to Model 4, R^2 change = .18, $F(6, 218) = 10.88$, $p < .001$, and the overall model once again explained a significant proportion of variance in CPA perpetration, $R^2 = .41$, $F(20, 218) = 7.65$, $p < .001$. At this step, relationship factors significantly and uniquely predictive of CPA perpetration were behavioral jealousy, $\beta = .43$, $t(218) = 5.92$, $p < .001$, and relationship satisfaction, $\beta = -.16$, $t(218) = -2.02$, $p < .045$, both in expected directions such that controlling for the other variables in the model, lower relationship satisfaction and greater behavioral jealousy were associated with more incidents of CPA perpetration in the past year. In this model, none of the other relationship variables, (i.e., cognitive jealousy, attachment-related anxiety and avoidance, and communication skills) were significantly predictive of CPA perpetration (all p 's $> .05$).

In Step 5, the traditional abuse variables were added into the model. Once again, there was a significant improvement in model fit with the addition of the relational factors, R^2 change = .12, $F(2, 216) = 28.28$, $p < .001$ and the overall model remained significant, $R^2 = .53$, $F(22, 238) = 11.26$, $p < .001$. Turning to the traditional abuse variables in Model 5, as shown in Table 15, emotional abuse significantly and positively predicted total CPA perpetration, $\beta = .15$, $t(216) = 7.12$, $p < .001$; however, physical assault did not $\beta = .04$, $t(216) = 0.66$, $p = .510$.

Finally, Model 6 contained all significant correlates of total CPA perpetration. The addition of the two technology-related factors introduced an additional 3.2% of variation in total CPA perpetration and this change was significant $F(2, 214) = 7.80$, $p = .001$. When technology-related variables were added at this final step, the resulting full

model explained 52% of the variance in total cyber psychological abuse perpetration and was significant, $F(24, 238) = 11.63, p < .001$. Turning to the individual predictors in the model, of the technology use variables, only daily cell phone use remained predictive of CPA perpetration, $\beta = .18, t(214) = 3.48, p = .001$; daily SNS use was no longer related to CPA perpetration in the full model, $\beta = .07, t(214) = 1.49, p = .137$. In addition to daily cell phone use, of the predictors in the other blocks of the final model, emotional abuse, $\beta = .40, t(214) = 6.33, p < .001$, and behavioral jealousy $\beta = .28, t(214) = 4.33, p < .001$, remained significantly and uniquely predictive of total CPA perpetration; All other predictors no longer had significant unique associations with cyber psychological abuse perpetration (all p 's $> .05$).

In sum, each group of additional predictors as a set added significant prediction to the model of total cyber psychological abuse perpetration, with the final model accounting for a significant proportion (52%) of variance in CPA perpetration. Variables remaining significantly predictive of CPA perpetration after controlling for all other significant correlates were daily cell phone use, emotional abuse perpetration, and behavioral jealousy, all of which were related to cyber psychological abuse perpetration in a positive direction.

Correlates of cyber psychological abuse victimization.

Table 16 displays total cyber psychological abuse victimization as a function of sex, employment status, relationship status, and self-reported race. As shown in the Table, in contrast to CPA perpetration, there were no significant differences in total CPA victimization between males and females. There were also no differences in CPA victimization between those who were employed and those who were not. Similar to

differences in CPA perpetration, those who were nonwhite were likely to report more incidents of CPA victimization than those who identified as white. A one-way ANOVA revealed significant omnibus differences in total CPA victimization according to relationship status, with Bonferroni post hoc tests indicating cohabitating couples reported victimization by more CPA in the past year than those who were married ($p = .007$); however, there were no significant differences between the other groups. Thus, relationship status, and race were included in the multivariate models as covariates.

Table 16.

Total Cyber Psychological Abuse Victimization as a Function of Demographics.

Variable	Mean incidents (<i>SD</i>) victimized in past 12-months	Test Result	<i>P</i>	Effect Size
Sex				
Male (n = 113)	14.80 (26.23)	$t(240) = 0.31$	.759	D = 0.04
Female (n = 129)	12.81 (22.86)			
Employment Status				
Employed (n = 201)	14.73 (25.79)	$t(241) = -1.33$	.186	D = -0.17
Not Employed (n = 42)	8.64 (15.71)			
Race				
White (n = 188)	12.44 (23.59)	$t(241) = -2.25$	.026	D = -0.28
Nonwhite (n = 55)	17.91 (26.90)			
Relationship Status				
Dating and not living together (n = 81)	14.99 (27.81)	$F(3, 236) = 4.77$	.003	$\eta^2_p = .06$
Dating and cohabitating (n = 73)	17.71 (26.71)			
Married and living together (n = 79)	6.62 (10.89)			
Divorced or no longer dating (n = 7)	28.00 (41.81)			

Note: Mean incidents of CPA Victimization was computed using raw scores; however, due to nonnormality of CPA Victimization total scores, statistical tests were run using log transformed CPA scores. Levene's tests of homogeneity of variances for all analyses were all p 's > .05.

Table 17 displays zero-order correlations between total, minor, and severe cyber psychological abuse victimization with income, years of education, age, child maltreatment, behavioral/psychopathology variables, and relationship factors. Neither income nor years of education were correlated with total, minor, or severe CPA victimization. With regard to age, negative, small correlations were observed between age and total, minor, and severe CPA victimization such that younger individuals were more likely to report greater victimization by cyber psychological abuse during the past year. With regard to child maltreatment, child emotional abuse and emotional neglect were not significantly correlated with CPA victimization. However, child physical abuse, physical neglect, and sexual abuse were all positively correlated with total, minor, and severe CPA victimization, with strengths ranging from small to moderate. In addition, similar to CPA perpetration, all three behavioral/psychopathology variables measured (alcohol use, drug use, emotion regulation) were positively and moderately correlated with total, minor, and severe CPA victimization such that greater problematic alcohol use, drug use, and greater difficulty in emotion regulation were associated with more incidents of CPA victimization during the past year.

With regard to the relational factors, attachment-related anxiety and avoidance were moderately and positively correlated with total, minor, and severe CPA victimization. In addition, both communication skills test score and relationship satisfaction score were inversely and moderately related to total, minor, and severe CPA victimization such that those who reported being less satisfied in their most recent/current relationship and those who had poorer communication skills reported greater victimization by cyber psychological abuse during the past year.

Table 17.

Zero-Order Correlations Between Cyber Psychological Abuse (CPA) Victimization and Demographic, Child Maltreatment, Behavioral/Psychopathology, and Relationship Variables.

Variable	Cyber Psychological Abuse (CPA) Victimization		
	Total	Minor	Severe
Income	-.05	-.04	-.06
Years of Education	-.11	-.12	.06
Age	-.16*	-.15*	-.17**
Child Maltreatment (CTQ)			
CTQ – Emotional Abuse	.12	.12	.01
CTQ – Physical Abuse	.30***	.29***	.21**
CTQ – Emotional Neglect	.10	.09	.12
CTQ- Physical Neglect	.16*	.14*	.27***
CTQ – Sexual Abuse	.28***	.27***	.28***
Problematic Alcohol Use (AUDIT)	.22**	.21**	.26***
Problematic Drug Use (DAST)	.26***	.24***	.36***
Difficulties in Emotion Regulation (DERS)	.21**	.19**	.25***
Behavioral Jealousy (MJS-B)	.48***	.46***	.43***
Cognitive Jealousy (MJS-C)	.37***	.35***	.42***
Emotional Jealousy (MJS-E)	.03	.05	-.27***
Attachment Related Anxiety	.35***	.34***	.21**
Attachment Related Avoidance	.19**	.18**	.20**
Communication Skills (CST)	-.24***	-.23***	-.17**
Relationship Satisfaction	-.34***	-.33***	-.20**

Note: N=243. All CPA Scales, The DAST, and the CTQ Sexual Abuse Scale were log transformed due to nonnormality. * indicates significance at the .05 level, ** indicates significance at the .01 level and *** indicates significance at the .001 level.

Finally, cognitive jealousy and behavioral jealousy were both positively correlated with total, minor, and severe CPA victimization, with magnitudes ranging from moderate (cognitive jealousy) to strong (behavioral jealousy). However, emotional jealousy was not significantly related to overall CPA victimization or minor CPA victimization, but was inversely and moderately correlated with severe CPA victimization. Thus, lower emotional jealousy was associated with greater self-reported victimization of severe cyber psychological abuse.

Multivariate models of cyber psychological abuse victimization.

The above significant correlates of total CPA victimization, along with daily cell phone use, SNS site use, traditional emotional abuse, and physical abuse (CTS) were entered into the 6-step hierarchical regression model with total cyber psychological abuse victimization as the dependent variable. The resulting beta coefficients, R^2 and test of R^2 , and test of R^2 change for each model are displayed in Tables 18 and 19. Model 1 (demographic factors only) explained 7% of the variance in total cyber psychological abuse victimization and was significant $F(5, 239) = 3.72, p = .003$. Of the demographic variables in Model 1, only relationship status remained significant when controlling for the other variables in the model, with those who were married reporting significantly less cyber psychological abuse victimization than those who were not longer in a relationship after controlling for age and race, $\beta = -.40, t(234) = -2.16, p = .032$.

Model 2 added the child maltreatment variables (sexual abuse, physical abuse, and physical neglect) to the demographic variables. The addition of the child maltreatment scales contributed significantly to the regression model, R^2 change = .11, $F(3, 231) = 10.34, p < .001$, and the overall model accounted for 18% of the variance in

total CPA victimization, $F(8, 239) = 6.48, p < .001$. After adjusting for the demographic and child maltreatment subscales in the model, childhood sexual abuse, $\beta = .18, t(231) = 2.69, p = .008$, and childhood physical abuse, $\beta = .23, t(231) = 3.30, p = .001$ both positively predicted total CPA victimization, whereas child physical neglect did not $\beta = -.02, t(231) = -0.26, p = .80$.

Table 18.

Hierarchical Regression Analysis Predicting Total Cyber Psychological Abuse Victimization.

Variable	Model 1			Model 2			Model 3		
	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β
Demographics									
Age	-.01	<.01	-.08	.00	<.01	-.06	.00	<.01	-.01
Race	.14	.10	.09	.11	.09	.07	.13	.09	.10
Dating	-.37	.24	-.28	-.48*	.23	-.37*	-.54*	.23	-.42*
Cohabiting	-.25	.24	-.19	-.34	.23	-.25	-.40	.22	-.30
Married	-.52*	.24	-.40*	-.62**	.23	-.47**	-.62**	.23	-.47**
Child Maltreatment									
CTQ Physical Abuse				.04***	.01	.23***	.04***	.01	.23***
CTQ Physical Neglect				.00	.01	-.02	-.01	.01	-.04
CTQ Sexual Abuse				.69**	.26	.18**	.51*	.26	.13*
Psychological Variables									
Problematic Alcohol Use							.02*	.01	.14*
Problematic Drug Use							.17	.15	.08
Difficulties in Emotion Regulation							.00	<.01	.05
<hr/>									
Model R²		.07**			.18***			.22***	
R² Change		.07**			.11***			.03*	

Note. N=240. Not together/divorced serving as the reference group for relationship status. CTQ Sexual Abuse, Problematic Drug Use (DAST), Behavioral Jealousy (MJS-B) were log transformed prior to analysis due to nonnormality.

Model 3 added the three behavioral/psychopathology factors as predictors of total CPA victimization. Introducing problematic alcohol use, drug use, and difficulties in emotion regulation as a set explained an additional 3% of the variance in CPA victimization and this change was significant, $F(3,228) = 3.23, p = .023$. Again, the

overall model significantly predicted CPA perpetration, $R^2 = .22$, $F(11, 239) = 5.73$, $p < .001$. Regarding the individual psychological predictors, significant unique predictors in this model included only problematic alcohol use, such that more problematic use of alcohol was associated with greater CPA victimization $\beta = .14$, $t(228) = 2.20$, $p = .029$. Neither problematic drug use, $\beta = .08$, $t(228) = 1.09$, $p = .277$, nor difficulties in emotion regulation, $\beta = .05$, $t(228) = 0.75$, $p = .455$, were predictive of CPA victimization upon entry into Model 3.

Relationship-related variables were added to the regression model in Step 4. There was a significant improvement in model fit from Model 3 to Model 4, R^2 change = .13, $F(6, 222) = 7.12$, $p < .001$, and the overall model explained 34% of the variance in CPA victimization, $F(17, 239) = 6.82$, $p < .001$. At this step, relationship factors significantly and uniquely predictive of CPA perpetration were behavioral jealousy, $\beta = .33$, $t(222) = 4.39$, $p < .001$, and relationship satisfaction, $\beta = -.18$, $t(222) = -2.16$, $p = .032$. Thus, over and above the other variables in the model, those who reported more behavioral jealousy and those who reported being less satisfied in their current or most recent relationship reported significantly more instances of CPA victimization during the past year. All other relationship variables were not significantly predictive of CPA victimization (all p 's $> .05$, see Table 19).

In Step 5, the traditional abuse victimization variables were added to the model. Once again, there was a significant improvement in model fit, with the addition of the relational factors explaining an additional 16% of the variance in CPA victimization, $F(2, 220) = 35.34$, $p < .001$. The overall model was also significant, explaining 50% of the

Table 19.

Hierarchical Regression Analysis Predicting Total Cyber Psychological Abuse Victimization (continued).

Variable	Model 4			Model 5			Model 6		
	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β
Demographics									
Age	.00	<.01	-.04	.00	<.01	-.02	.00	<.01	.03
Race	.06	.09	.04	.02	.07	.01	.03	.07	.02
Dating	-.34	.22	-.26	-.26	.19	-.21	-.25	.19	-.19
Cohabiting	-.24	.22	-.18	-.25	.19	-.18	-.18	.19	-.14
Married	-.43	.23	-.33	-.40*	.20	-.31*	-.34	.19	-.26
Child Maltreatment									
CTQ Physical Abuse	.01	.01	.09	.02*	.01	.13*	.02*	.01	.12*
CTQ Physical Neglect	-.01	.01	-.05	.00	.01	-.01	.00	.01	-.01
CTQ Sexual Abuse	.48	.25	.12	.18	.22	.05	.20	.21	.05
Psychological Variables									
Problematic Alcohol Use	.02*	.01	.14*	.01	.01	.06	.00	.01	.02
Problematic Drug Use	-.02	.15	-.01	-.11	.13	-.05	-.09	.13	-.04
Difficulties in Emotion Regulation	.00	<.01	.01	.00	<.01	.08	.00	<.01	.09
Relationship Variables									
Behavioral Jealousy	1.03***	.23	.33***	.40	.22	.13	.41	.21	.13
Cognitive Jealousy	.00	<.01	.01	.00	<.01	-.05	.00	<.01	-.05
Attachment Anxiety	.00	<.01	.00	.00	<.01	.01	.00	<.01	.00
Attachment Avoidance	.00	<.01	-.09	.00	<.01	-.11	.00	<.01	-.11
Communication Skills	.00	<.01	-.05	.00	<.01	-.02	.00	<.01	.02
Relationship Satisfaction	-.02*	.01	-.18*	.00	.01	-.03	.00	<.01	-.03
Traditional Abuse									
Physical Assault- V				.04	.08	.03	.04	.08	.03
Emotional Abuse -V				.42***	.05	.53***	.39***	.05	.49***
Technology Variables									
Daily Cell Phone Use							.24***	.07	.19***
Daily SNS Use							.01	.02	.03
Model R²	.34***			.50***			.53***		
R² change	.13***			.16***			.03**		

Note. N=240. Not together/divorced serving as the reference group for relationship status. CPA Victimization, CTQ Sexual Abuse, Problematic Drug Use (DAST), Behavioral Jealousy (MJS-B), Emotional Abuse Perpetration (MMEA), Physical Assault (CTS) and cell phone use were log transformed prior to analysis.

variance in CPA victimization, $F(19, 239) = 11.71, p < .001$. Turning to the individual predictors in Model 5, after adjustment, emotional abuse victimization significantly and positively predicted total CPA victimization, $\beta = .53, t(220) = 8.10, p < .001$; however, physical assault victimization did not, $\beta = .03, t(220) = 0.44, p = .660$.

Finally, Model 6 contained all significant correlates of total CPA victimization. The addition of the two technology-related factors introduced an additional 3% of the variation in total cyber psychological abuse victimization and this change was significant, $F(2, 218) = 7.03, p = .001$. When technology-related variables were added at this final step, the resulting full model explained 53% of the variance in total cyber psychological abuse victimization and was significant, $F(21, 239) = 11.84, p < .001$. Turning to the individual predictors in the model, of the technology use variables, only daily cell phone use remained predictive of CPA victimization, $\beta = .19, t(218) = 3.57, p < .001$; daily SNS use was no longer related to CPA victimization, $\beta = .03, t(218) = 0.70, p = .483$. In addition to daily cell phone use, of the predictors in the other blocks of the final model, emotional abuse victimization, $\beta = .49, t(218) = 7.47, p < .001$ and childhood physical abuse $\beta = .12, t(218) = 1.99, p = .048$, remained significantly predictive of CPA victimization. All other demographic, child maltreatment, psychopathological, and relational variables were no longer significantly related to cyber psychological abuse victimization in the final model; however, behavioral jealousy trended toward significance, $\beta = .13, t(218) = 1.91, p = .057$.

In sum, each group of additional predictors as a set added significant prediction to the model of total cyber psychological abuse victimization, with the final model accounting for a significant proportion (53%) of variance in CPA perpetration. Variables

remaining significantly predictive of CPA perpetration after controlling for all other significant correlates were daily cell phone use, childhood physical abuse, and emotional abuse victimization during the past year.

Exploratory prediction of cyber psychological abuse separately by sex.

Finally, each of the above two hierarchical regression analyses was conducted separately for males and females (see Appendix F). Regarding perpetration of total CPA for males, consistent with the findings for the overall sample, each group of predictors (e.g., demographic, child maltreatment, psychological variables) contributed a significant proportion of variance to the model when added in a stepwise fashion (all changes in R^2 were significant)(see Appendix Table F1). Among males only, in the final model (Model 6), after all correlates of total CPA perpetration were added, the model accounted for 76% of the variance in Cyber Psychological Abuse Perpetration and was significant, $F(23,111) = 12.12, p < .001$. Individual variables that remained significant for men when accounting for all the other predictors in the final model were childhood physical abuse $\beta = .18, t(88) = 1.99, p = .050$, behavioral jealousy $\beta = .34, t(88) = 3.69, p < .001$, emotional abuse perpetration during the past 12-months $\beta = .42, t(88) = 4.92, p < .001$, and daily cell phone use, $\beta = .19, t(88) = 12.71, p = .008$ (see Appendix Table F2).

Regarding CPA perpetration in females only, examining the relative contribution of each group of predictors revealed that only the relationship variables, traditional abuse variables, and technology variables contributed a significant proportion of variance to the model, with demographic factors, child maltreatment, and psychological variables not contributing significant increases in the variance accounted for (see Table F2). In the final model (Model 6), after all correlates were added, the female-only model accounted

for 42% of the variance in cyber psychological abuse perpetration and was significant, $F(23, 126) = 3.18, p < .001$. After accounting for all individual predictors in the final model, only behavioral jealousy, $\beta = .25, t(103) = 2.34, p = .021$, and emotional abuse perpetration $\beta = .32, t(103) = 3.09, p = .003$ offered unique prediction of cyber psychological abuse perpetration among females.

Regarding victimization of cyber psychological abuse for males, examining the relative contribution of each group of predictors revealed that four of the six groups of predictors as a set contributed a significant proportion of variance to the model, with the psychological variables and technology variables not significantly adding to the variance accounted for in cyber psychological abuse victimization (see Table F3). In the full model (Model 6), after all correlates were added, the model accounted for 73% of the variance in Cyber Psychological Abuse victimization in males and was significant, $F(21, 111) = 11.64, p < .001$. Among males only, individual variables that remained uniquely predictive of total cyber psychological abuse victimization were childhood physical abuse ($\beta = .19, t(90) = 2.37, p = .02$), attachment avoidance ($\beta = -.18, t(90) = -2.13, p = .04$), frequency of emotional abuse victimization $\beta = .53, t(90) = 6.68, p < .001$, and relationship status, such that dating and married males reported significantly less cyber psychological abuse victimization than males who were no longer in a relationship ($\beta = -.39, t(90) = -2.36, p = .020$ for dating males, $p = .003$ and $\beta = -.38, t(90) = -2.25, p = .027$ for married males respectively).

Finally, regarding victimization of cyber psychological abuse in females, of each group of predictors as a set, child maltreatment variables, relationship variables, traditional abuse variables, and technology variables contributed significant proportions

of variance to the model when added in a stepwise fashion (all p 's for the change in R^2 for these sets of variables were $< .05$). Sets of variables that did not contribute significant variance to the model among females included the demographics and psychological variables (see Table F3). In the full model (Model 6), after all correlates were added, the model accounted for 43% of the variance in Cyber Psychological Abuse victimization in females and was significant, $F(21, 126) = 3.82, p < .001$. In the full model (Model 6), variables that were uniquely predictive of cyber psychological abuse victimization in females after accounting for all the other significant correlates of CPA victimization included only emotional abuse victimization ($\beta = .43, t(105) = 4.08, p < .001$), and daily cellular telephone use ($\beta = .19, t(105) = 2.25, p = .027$) (see Table F4).

Chapter 4: Discussion

The present study examined the prevalence of cyber psychological abuse (CPA) in a sample of adult internet and social media users who had been in a relationship in the past 12-months. In addition, this study assessed the relationship between traditional forms of intimate partner aggression and CPA, examined the relationship between technology use and CPA, and investigated how a selected set of previously established risk factors for more traditional forms of intimate partner violence predict cyber psychological abuse.

Prevalence of Cyber Psychological Abuse

Descriptive analyses of the cyber psychological abuse items revealed that CPA victimization and perpetration were both quite common in this sample, with 71.2% reporting they were victimized by at least one instance of CPA and 75.3% reporting that they had perpetrated at least one instance of CPA in the past year. Examining minor and severe behaviors separately revealed that a similar proportion (75.3% for perpetration and 71.6% for victimization) reported at least one instance of minor CPA. Additionally, 10% of individuals endorsed at least one severe act of CPA perpetration such as posting inappropriate pictures or embarrassing information online to humiliate their partner, with the same percentage (10%) of individuals reporting severe CPA victimization.

Compared to other studies of cyber abuse between young adult intimate partners, including some that have been published since this dissertation was proposed, the current study's estimates of the past-year prevalence of total CPA fall within the range of reported estimates (40% - 93%; Bennett et al., 2011; Borrajo et al., 2015; Leisring & Giumetti, 2014; Kellerman et al., 2013; Marganski & Melander, 2015; Melander, 2010;

Wolford et al., 2016). Particularly, findings from this study were very similar to three other investigations that found approximately three quarters of young adults report cyber psychological abuse victimization and perpetration in their relationships during the past year (e.g., Kellerman et al., 2013; Melander, 2010; Marganski & Melander, 2015). Given that investigations prior to this study's proposal have been limited to adolescents and young adults, this study expands on these findings by demonstrating that cyber psychological abuse is also quite prevalent in a sample with an older mean age and among individuals from a wide geographic range of the United States. That one in ten participants reported at least one severe act of cyber psychological abuse is particularly concerning, especially given that some of the behaviors are illegal, for example as part of statutes that criminalize nonconsensual pornography (i.e., "revenge porn") (Franks, 2015). Consistent with the available evidence, results from the present study suggest that technologies are indeed being used to perpetrate intimate partner abuse and these behaviors are not limited to teenagers or young adults. In fact, the occurrence of cyber psychological abuse in this study was more than some national estimates of both psychological and physical aggression for both men and women (Black et al., 2011) It is therefore important to continue to study how communication technologies can be used as a tool of abuse and include this construct in how we conceptualize partner abuse.

While it is clear from this study and recent research that cyber psychological abuse is common, a wide range of prevalence estimates have been reported in the literature. For example, in a very recent study evaluating the psychometric properties of the Cyber Abuse in Relationships Scale (CARS) among a similar sample of adult MTurk users across the U.S., Watkins and his colleagues (2016) found lower rates of

psychological cyber aggression perpetration (32.7%) than in the present study. They also found stalking cyberaggression was common (55.4%) and that sexual cyberaggression was less common than the other forms, but still reported at a rate of 13.6% in the past 6-months. Given the similar sample, it could be that rates of cyber psychological abuse were higher in the present study due to the time period assessed (12 months vs. 6 months). However, in another recent psychometric study, Wolford and colleagues (2016) suggested that the wide range of prevalence estimates reported may be in part a reflection of the different behaviors sampled and measures used. Indeed, cyber abuse research is still a relatively new topic of investigation compared with other types of relationship aggression and there is no gold standard of measurement. Since the present study was proposed, there have been three additional measures published of cyber abuse, including the Partner Cyber Abuse Questionnaire (PCAQ; Wolford et al., 2016) the Cyber Dating Abuse Questionnaire (CDAQ; Burrajo, Bamez-Guadiz, Pereda & Calvete, 2015), and the Cyber Aggression In Relationships Scale (CARS; Watkins, Maldonado, & DiLillo, 2016). Wolford and colleagues (2016) noted that their measure, the PCAQ, may have yielded comparatively lower rates of cyber abuse (40%) because it assessed more severe and controlling behaviors (e.g., changing a partner's password so that they could not access their bank accounts) than the Cyber Psychological Abuse (CPA) scale, which measures both minor behaviors (e.g., swearing at a partner) and severe behaviors (e.g., making threats via technology). Consistent with their explanation, studies measuring cyber abuse as a single construct have found higher past-year prevalence rates (e.g., Melander, 2010; Kellerman et al., 2013) than studies that have distinguished among types, which have found comparatively lower rates of severe and/or malicious acts of

direct aggression (Burrajo et al., 2015; Leisring & Giumetti, 2014). For example, Burrajo and colleagues (2015) found that in a sample of young couples, the CDAQ uncovered much higher rates of perpetration and victimization of controlling or monitoring behaviors involving behaviors such as online surveillance and invasion of privacy (70%) than “direct cyber aggression” involving behaviors such as deliberate attempts to harm the partner and identity theft (10%;).

The differences in prevalence between minor and severe cyber psychological abuse observed in the current study, as well as the recent studies that have found similar differences in prevalence estimates when distinguishing between forms of cyber abuse support the notion that cyber abuse, particularly cyber psychological abuse, may be a multidimensional construct (Watkins et al., 2016; Wolford et al., 2016). The factor analysis of the CPA items in the present study supported two distinct dimensions of cyber psychological abuse (see Appendix D). Leisring’s (2014) exploratory and confirmatory factor analysis of the CPA items also suggested the same two factors, which combine to form a larger cyber psychological abuse construct. It is possible, therefore, that cyber psychological abuse is best conceptualized in a manner similar to emotional abuse, as a construct with distinct but correlated facets (Murphy & Hoover, 1999; Murphy, Hoover, & Taft, 1999). It is also possible that the current measure of cyber psychological abuse, does not capture important dimensions that also fall under the umbrella of cyber abuse. In the past few years, cyber abuse has been conceptualized with facets similar to their in-person counterparts, such as sexual, psychological, and stalking cyber abuse (Watkins et al., 2016), and the CPA scales do not measure some of these additional behaviors, such as using GPS technology to track a partner’s whereabouts (cyber stalking abuse) or

pressuring a partner to send sexual photographs (sexual cyber abuse). Given that the prevalence of CPA is high but there is a continued lack of clarity in its measurement and domains, studies that continue to develop and refine the larger construct of cyber abuse and its factors should continue to be a research priority.

Relationship Between Cyber Psychological Abuse and Traditional Forms of Intimate Partner Abuse

Results strongly support the hypotheses that cyber psychological abuse perpetration and victimization are related to traditional partner abuse victimization and perpetration. Overall, all of the CPA perpetration scales (total, minor, and severe) and all of the CPA victimization scales were significantly associated in a positive direction with perpetration and victimization of each form of traditional partner abuse measured in the current study, including frequency of emotional abuse (total and all subscales), frequency of physical assault, and perpetration of sexual coercion; The strength of the correlations varied from moderate to strong. While not hypothesized, there were also strong, positive correlations observed between total cyber psychological abuse perpetration and total cyber psychological abuse victimization as well as between minor CPA victimization and perpetration, and between severe CPA perpetration and victimization (see Table 7).

It was hypothesized that the strongest correlations would be between cyber psychological abuse and emotional abuse. On the whole, this hypothesis was supported in that emotional abuse was a very strong correlate of cyber psychological abuse victimization and perpetration, and emotional abuse remained predictive of CPA in multivariate models that accounted for all of the other demographic, developmental, psychological, relational, and technological factors. It was also notable that examining

minor and severe CPA separately revealed especially strong bivariate associations between *severe* CPA perpetration with physical assault perpetration and victimization, as well as with the dominance/intimidation subscale of the MMEA. Very similar patterns were observed for severe CPA victimization, such that severe CPA victimization was strongly related to physical assault perpetration and victimization, as well as the dominance/intimidation perpetration subscales of the MMEA. These findings are very similar to that of Leisring and colleagues (2014), who also found very strong relationships between severe CPA perpetration and victimization with the MMEA dominance/intimidation perpetration subscale and with the CTS2 physical abuse perpetration subscale. Leisring and colleagues (2014) note that these data provide support for the validity of the CPA scale. In addition, these findings also imply that the behaviors measured in the severe cyber psychological abuse scale, such as posting online to humiliate one's partner, threatening to harm a partner via technology, or distributing hurtful or embarrassing emails, reflect a pattern of severe and controlling abuse, consisting of physical assault and behaviors that are likely to produce fear and submission (Murphy & Eckhardt, 2005). With regard to more traditional forms of partner abuse, Johnson (1995) draws a distinction between forms of abuse based on the degree of control in the relationship. That is, intimate terrorism, consisting of behaviors characterized by an overarching attempt to control one's partner through violence, and fear induction is differentiated from situational couple violence, which is often bi-directional and typically occurs in the context of escalating arguments. Johnson later re-conceptualized this typology to include both partners' patterns of control in the relationship noting four categories of violent relationships including situational couple

violence, intimate terrorism, mutual violent control, and violent resistance (Johnson 2006). The strong associations between severe CPA perpetration and both physical abuse perpetration and dominance/intimidation subscales of the MMEA observed in the present study may suggest that individuals who engage in more severe CPA perpetration may fit the more severe and controlling profiles of abusive behavior. Consistent with this hypothesis, Melander (2010b) conducted focus groups about the role of technology in abusive relationships and found that college students discussed online abusive behaviors that fit into all four of Johnson's types, with technology adding additional elements of communication that may be quicker and more public (e.g., through social media posts).

Overall, the observed relationship between traditional and cyber psychological abuse contributes to the growing number of studies that have found that online and offline patterns of aggression are related, including other recent studies that have found a positive correlation between cyber abuse and traditional intimate partner abuse (Borrajó et al., 2015; Cutbush et al., 2010; Leisring & Giumetti, 2014; Merganski & Melander, 2015; Schnurr et al., 2013; Temple et al., 2016; Wolford et al., 2016; Zweig et al., 2013), studies that have found a positive relationship between cyberbullying and traditional bullying (e.g., Chen, Ho, & Lwin, 2015; Hinduja & Patchin, 2008; Kowalski et al., 2014; Smith & Slonje, 2010; Sticca et al., 2013), and studies that have found that the different forms of traditional abuse are strongly inter-correlated (Thompson et al., 2006; Capaldi et al., 2012). Thus, the available evidence suggests that CPA is also a part of this larger and more comprehensive pattern of abusive behaviors, including physical, emotional, and sexual abuse, rather than an isolated pattern of behavior among individuals who are not at

risk for other forms of partner abuse (Merganski & Melander, 2015; Stonard et al., 2014; Wolford et al., 2016).

Within such an overall pattern, it remains relatively uncertain exactly how CPA fits into the continuum of the development and maintenance of partner abuse. One possibility is that CPA is a risk factor for the development of traditional types of abuse over time. In other words, engaging in abusive behaviors through the use of technology may facilitate later perpetration of more traditional forms of abusive behavior, such as emotional abuse, physical assault, and sexual coercion or violence. Because CPA does not allow the perpetrator to obtain social cues from a partner and does not present immediate exposure to the consequences of one's abusive behavior, (Dehue, Bolman, & Vollnick, 2008; Kowalski et al., 2014; Melander, 2010b; Runions, 2013), it may be relatively easy for individuals to initiate abusive behavior in a relationship through technology, which then may lead to other abusive behaviors face-to-face, perhaps through mechanisms such as decreased inhibitions, increased jealousy, increased ability to locate one's partner in-person, and increased potential to monitor the partner's whereabouts and activities (Brem et al., 2015; Chaulk & Jones, 2011; Muscanell et al., 2013). However, it is also possible that individuals who are already perpetrating other types of abuse (e.g., emotional abuse) expand their abusive behavior through the use of technology, and are simply using technology as another venue for such behaviors (Borrajo et al., 2015; Hinduja & Patchin, 2008; Melander, 2010).

It was also notable that in this sample, while no specific hypotheses were made between CPA victimization and perpetration, there were strong, positive correlations between total CPA perpetration and total CPA victimization as well as between minor

CPA victimization and perpetration, and between severe CPA perpetration and victimization (see Table 7). Thus, individuals who reported that they perpetrated behaviors such as monitoring or insulting their partners via technology were also likely to have reported that they were victimized by similar behaviors in the past 12-months. These findings parallel recent research that has found correlations between self-reported perpetration and victimization of cyber abuse in intimate partners (Borrajó et al., 2015; Leisring et al., 2014; Melander, 2010; Temple et al., 2016; Zweig et al., 2013). This relationship is also consistent with the traditional abuse literature, which has found that both physical and emotional abuse are often bidirectional, with individuals reporting both perpetration and victimization of abusive behaviors (Langhinrichsen-Rohling et al., 2012; O’Leary et al., 2008; Renner & Whitney, 2012). Findings from the present study imply that cyber psychological abuse may also occur bidirectionally and that, just as in traditional abuse, victimization may be in and of itself be a risk factor for perpetration, or vice versa (Straus & Gelles, 1990; O’Leary et al., 2007).

In a similar vein, given that total cyber psychological abuse perpetration was correlated with all forms of traditional abuse victimization (i.e., emotional abuse, physical assault) and that cyber psychological abuse victimization was related to all forms of traditional abuse perpetration (see Table 9), it is important to continue to develop theory and research to examine the processes through which victimization and perpetration of cyber psychological abuse may fit within a pattern of bidirectional partner abuse more generally. For example, given the research that young adults are less inhibited in online aggression than in-person aggression, cyber psychological abuse may be a way of retaliating against one’s partner behind the perceived security of a phone or

computer, such that the individual may respond to in-person abuse via technology because it is indirect and immediate (Hinduja & Patchin, 2008; Melander, 2010). Alternatively, given recent longitudinal research in adolescents finding that cyber abuse perpetration predicts cyber abuse victimization one year later after controlling for traditional abuse and demographic factors, it could be that these behaviors are initiated by one partner and then become part of a back-and-forth pattern wherein partners attempt to control, monitor, harass, and otherwise abuse one another via technology as well as in-person simultaneously (Temple et al., 2016). In a sample of young adults, Madlock and Westerman (2011), for example, found that “cyber-teasing” sometimes led to the other partner retaliating both in-person and via online technologies, including with physical abuse. It will be important to account for the dynamic and likely reciprocal nature of CPA in future models, and develop studies that examine the relationships between victimization and perpetration of both traditional and cyber partner abuse over time.

Cyber Psychological Abuse and Technological Factors

Aim three of this study was to investigate the use of technology as it relates to CPA perpetration, with the specific hypotheses that greater proficiency with technology, greater integration of technology into one’s life, and greater use of technology itself (e.g., daily cell phone use, time spent on the internet) would be associated with increased CPA perpetration. Relationships between CPA victimization and technology use were also explored.

Results from this aim yielded some interesting and unexpected findings. With regard to perpetration of CPA, while greater daily cell phone use, daily time spent on social networking, daily time spent on the internet, and social media integration were

associated with greater total and minor CPA perpetration, only daily cell phone use and time spent on social media remained significantly predictive of total CPA when accounting for the other technological factors in a multiple regression model. Similar findings were observed for CPA victimization, such that daily cell phone use and daily time spent on social media were significantly predictive of CPA victimization after accounting for correlates of total CPA victimization.

The finding that those who send and receive more calls and texts on their phones and spend more time on social media report greater overall CPA perpetration and greater CPA victimization was expected and is consistent with prior research that has found that greater use of technology is associated with relationship-related cyberaggression in college students (Melander, 2010), cyberbullying in school-age children and teenagers (Hinduja & Patchin, 2008; Kowalski et al., 2014; Sticca et al., 2008), and cyberstalking in adults (Strawhun et al., 2013). It has been proposed that the use of communication technologies may increase the risk of cyberbullying and relationship-related cyberaggression due to greater exposure to and accessibility of the victim (Melander, 2010; Sticca et al., 2013). However, it is not clear how much of participants' electronic communications in the present study might be directly related to such opportunity, as technology use specific to the relationship partner (e.g., texting with one's partner or viewing a partner's social media profile) was not assessed.

One unexpected finding regarding the technology variables was that technology proficiency was correlated with severe cyber psychological abuse perpetration and victimization, but in the opposite direction as was predicted. Individuals who reported they were less proficient in the use of communication technologies reported *greater*

severe cyber psychological abuse perpetration and victimization. While there are no other studies found that have examined technology proficiency as it relates to cyber abuse between intimate partners, this observed finding contrasts with previous research that has found that technology proficiency is associated with increased perpetration and victimization of cyberbullying in adolescents (Hinduja & Patchin, 2008; Chen et al., 2016). One reason for these discrepant findings could be that in contrast to cyber psychological abuse between partners, cyberbullying in adolescents includes anonymous communications and/or communication completed between people who may or may not be intimate (Diamanduros et al., 2008). Therefore perpetration of cyberbullying may require a perpetrator to be more technologically competent in order to seek out or harass a victim. In contrast, when abuse occurs between current or even former romantic partners, the perpetrator knows the victim intimately and may have easier access to the means by which to be abusive (e.g., has multiple forms of the victims' contact information, already may know their log-in information, etc.) and does not require as much comfort and knowledge of technology to engage in these behaviors (e.g., posting inappropriate pictures of a partner online). It could also be, however, that the discrepancy in findings is a reflection of the measures used, as Hinduja & Patchin's (2008) measure of technology competence consisted of asking how many activities adolescents engage in online, which is similar in nature to the present study's measures of technology use, rather than proficiency.

Nevertheless, these unexpected findings suggest that feeling less competent in use of technology is a risk factor for perpetration of severe cyber psychological abuse victimization and perpetration. There is therefore a need for replication and continued

study on this relationship, particularly involving the ways in which being competent and knowledgeable in the use of technology may act as a potential protective factor against cyber psychological abuse. It is possible that those who are less proficient at using technology are less aware of the potential consequences or harm of their behaviors, and more likely to act aggressively via technology as a consequence. Similarly, with regard to victimization, a reasonable explanation is that those who are less proficient at using technology are more vulnerable because proficiency with technology would lend oneself to take precautions and protections against the more severe forms of cyber partner abuse (e.g., blocking an (ex)partner from social media or blocking their phone number).

Predictors of Cyber Psychological Abuse

This study also sought to investigate whether a selected set of predictors of traditional intimate partner abuse also predicted total cyber psychological abuse. Significant correlates of total CPA perpetration and victimization were entered into multivariate regression equations, with the order of entry established by theory reflecting previous integrative models of traditional intimate partner violence containing factors from childhood, relational, and psychopathology perspectives (e.g., O’Leary et al., 2007; O’Leary et al., 2014; Stith et al., 2004).

Overall, findings from the multivariate analysis found that several demographic, childhood, psychological, and relational factors that predict traditional partner abuse also predict cyber psychological abuse. In addition, for both CPA victimization and perpetration, each set of predictors (e.g., psychological) improved the model fit by a significant amount, such that the final multivariate model explained a significant proportion (57% perpetration and 53% victimization) of the variance in CPA. On the

whole, these findings are consistent with the conclusion that even though there are factors that make cyber psychological abuse distinct from traditional abuse (e.g., lack of social cues, decreased inhibitions) (Melander et al., 2010), many of the correlates are the same. This is also consistent with the observation in the literature that risk factors for various types of relational aggression overlap (Capaldi et al., 2012) and provides additional evidence to suggest that cyber psychological abuse is a part of overarching patterns of partner abuse.

Turning to the demographic predictors, it was hypothesized that younger age would be associated with increased CPA perpetration. This hypothesis was supported, as controlling for the other correlated demographic predictors (Model 1), those who were younger reported greater perpetration of total CPA. However, when adding the other correlates of CPA perpetration into the model (models 2-6), age was no longer associated with CPA. With regard to CPA victimization, a similar pattern was observed such that younger individuals were more likely to report CPA victimization but after controlling for demographic and other predictors in the model, (models 1 through 6), age was no longer associated with CPA Perpetration. These findings imply that while cyber psychological abuse occurs across all ages, young adulthood may be a period of particular vulnerability, just as it is for intimate partner abuse perpetration and victimization more generally (Capaldi et al., 2012; Kim et al., 2008). It also suggests that, similar to the traditional IPV literature, the other behavioral and relational risk factors may play a heavier role than age per se (Johnson et al., 2014). Young adults generally use information communication technologies more than older individuals (Madden & Zickuhr, 2011; Kohut et al., 2011), and this was true in the present study with regard to

daily cellular phone use but not for social media or internet use (see Table F5). Given this finding, along with the fact that age was no longer related to CPA in the multivariate models that accounted for daily cell phone use and internet use, some of this relationship may be related to younger adults' general increased use of communication technologies, particularly their cellular phone use.

Findings with regard to sex differences in cyber abuse remain mixed in the literature. In this sample, females reported greater total cyber psychological abuse perpetration than males; however, there were no sex differences between males and females in self-report of total CPA victimization. Similarly, there were no significant differences in CPA perpetration or victimization at the item level although there was a trend for females to report keeping tabs on their partner by checking their email messages, messages on their cell phone, or inbox on a social networking site (see Appendix F). That females reported significantly more CPA perpetration overall fits with the traditional partner violence literature, which generally has shown that women are equally or slightly more likely to perpetrate physical IPV, despite disproportionate physical harm to women (Archer, 2000; Capaldi et al., 2012). These results are also consistent with a few other studies that have found females adolescents and young adults report greater perpetration of cyber abuse than males (e.g., Melander, 2010; Zweig, 2013). There have been others that have failed to find sex or gender differences in cyber abuse victimization (Wolford et al., 2016; Finn, 2004; Ybarra & Mitchell, 2004) and, contrary to the findings from the present study, two studies have found that men report greater cyber abuse victimization, particularly when it is severe (Bennett et al., 2011;

Leisring et al., 2014). Others have found that girls experience more electronic victimization than boys in their relationships (Zweig et al., 2013).

In general, as the present study's findings suggest, it could certainly be that females engage in cyber psychological abuse more than males, perhaps because abusive behavior through technology may "level the playing field" and eliminate the differential threat of physical harm associated with physical abuse (Archer, 2000). However, conclusions regarding sex differences in cyber abuse should be drawn with significant caution for a few reasons. For one thing, the effect size for this difference was small (two instances in the past year between males and females), which may not be a clinically meaningful difference. Secondly, there may be differential associations between males and females according to the type of cyber abuse and behaviors measured. In adolescents, for example, Zweig and colleagues (2013) found that females reported greater levels of non-sexual cyber dating abuse but males reported more sexual cyber dating abuse. Leisring and her colleagues (2014) failed to find differences between males and females in minor CPA victimization or perpetration but found that males reported greater severe CPA than females; It was puzzling that in contrast to Leisring's (2014) study, follow-up t-tests in the present study (results not shown) indicated that there were no differences in severe CPA perpetration or victimization based on sex. Third, in the multivariate models, sex was no longer related to CPA perpetration after controlling for other demographic correlates of CPA, suggesting that other behavioral, emotional, and relational factors may have a greater impact on CPA. Taken together, the mixed literature, small effect sizes, and potential for differential associations by type of cyber abuse imply that further

studies are needed in order to draw any strong conclusions about the relationship between sex and CPA (Wolford et al., 2016).

After the demographic factors, childhood maltreatment was added to the models for both CPA perpetration and victimization. Overall, the addition of child maltreatment contributed significantly to model fit for both victimization and perpetration of CPA, supporting the hypothesis that experiences of child maltreatment are associated with cyber psychological abuse in adulthood. More specifically, greater childhood physical abuse and sexual abuse were predictive of CPA perpetration and victimization after adjusting for demographic factors and the other forms of maltreatment. The other forms of child maltreatment (e.g., physical neglect) were no longer correlated with CPA victimization or perpetration in the model that accounted for demographic factors and the other forms of child maltreatment. In addition, in the final multivariate models that accounted for psychological and relational variables, none of the maltreatment variables were significantly related to CPA perpetration, and only physical abuse remained significantly predictive of CPA victimization.

Very little research has focused on the role of childhood experiences in cyber abuse perpetration or victimization. In a sample of undergraduates, Melander (2010) found that sexual abuse in childhood was associated with *decreased* cyber abuse perpetration, and she found no relationship between child physical abuse and neglect with cyber abuse perpetration. The present study's findings contrast with her investigation and are more consistent with the large number of cross-sectional and prospective studies of traditional partner violence that have found strong associations between experiences of childhood abuse and adult partner violence perpetration and victimization (Barnett et al.,

2005; Capaldi et al., 2012; Delsol & Margolin, 2004; Tintle & Bromet, 2014; Ehrensaft et al., 2003; Widom et al., 2014). Similarly, findings from the present study fit with a recent study that found individuals who were sexually abused in childhood were more likely to experience cyberbullying (Hebert et al., 2016).

While the contrasting findings suggest some caution in interpretation, the observed relationship between child abuse and CPA could mean that aggressive behavior is learned in childhood and generalized to aggressive behaviors that occur through communication technologies. However, given that child physical and sexual abuse were no longer related to CPA perpetration after accounting for the other psychological, relational, and technology variables, it could also be the case that additional proximal variables may help explain or mediate this relationship, just as they are thought to do so with regard to traditional partner violence (Capaldi et al., 2012). Indeed, a possible indirect effect of physical and sexual abuse on CPA could help explain why Melander (2010) found that physical abuse in childhood did not predict cyber abuse in young-adult relationship partners, as she controlled for factors such as technology use, drinking, drug use, and self-esteem in her analysis. With regard to CPA victimization, child physical abuse was a robust correlate of CPA in the present study and this is consistent with Melander's finding (2010) that experiencing physical abuse (but not sexual abuse or neglect) predicted cyber abuse among college students. Taken together, the available evidence again suggests a pattern similar to traditional partner violence, wherein having a history of physical abuse is correlated with violence victimization as well as perpetration in intimate relationships (Foshee et al., 2004; Riggs & O'Leary, 1996; Tjaden & Thoennes, 2000).

With regard to the psychological and relational variables, both sets of variables contributed unique variance to the models of cyber psychological abuse perpetration and victimization, suggesting that they are important considerations in understanding CPA, just as they are for traditional partner abuse. Upon entry into the multivariate models, greater CPA perpetration was associated with increased alcohol use, difficulties in emotion regulation, behavioral jealousy, and relationship satisfaction. For CPA victimization, alcohol use, behavioral jealousy, and relationship satisfaction emerged as unique correlates.

That alcohol use was associated with increased CPA above and beyond the demographic and child maltreatment variables is also consistent with the traditional partner abuse literature (Barnett et al., 2005; Capaldi et al., 2012; Foran & O’Leary, 2008; Stith, et al., 2004). Similarly, getting drunk at least weekly was associated with cyber abuse perpetration in college students (Melander, 2010). Taken together, these findings suggest that problematic alcohol use may be a risk factor for both CPA perpetration and victimization in adults. The pathways of how it might increase risk for CPA remain to be tested. The relationship between alcohol use and traditional partner abuse is not direct, but rather may operate through pathways such as decreased inhibitions as well as changes in executive functioning and self-regulation (Giancola et al., 2010; Eckhardt et al., 2015) and it’s possible that the relationship between alcohol use and CPA operates similarly. Given that technologies such as social media and text-messages also have a disinhibiting effect on communications (Hinduja & Patchin, 2008; Li, 2006), and the fact that there are no physical social cues when communicating via these technologies, it could be that alcohol intoxication, combined with the ability to

communicate behind the safety of a computer or phone, decreases the ability to consider the potential negative effects or consequences of abuse perpetrated via technology, thus increasing the risk for CPA. Similarly, given theory and evidence to suggest that alcohol use may work to narrow individuals' attention toward the most salient pieces of a given situation, increasing risk of partner abuse through focus on stimuli that are more "provocative" (Eckhardt et al., 2015, p.5; Eckhardt & Cohen, 1997; Smith & Waterman, 2004; Steele & Josephs, 1990), it may be the case that for those already at risk who do not have physical social cues during electronic communications, drinking may increase the perception that a partners' intentions during electronic communications are hostile, which, along with disinhibition or difficulties with emotion regulation, may lead to CPA.

The relationship between emotion regulation and CPA perpetration is again consistent with the traditional partner violence research (McNulty & Hellmuth, 2008; Shorey, McNulty, Moore, & Stuart, 2015) and suggests that individuals who are more aware of their emotions, and able to manage them better are less likely to engage in behaviors that are harassing or controlling via technology. Given that childhood abuse was also related to CPA perpetration in this sample, it could be that a difficulty learning to regulate one's emotions may serve as one pathway by which children who are abused may develop troubled relationships that involve cyber abuse, just as is sometimes hypothesized to be the pathway in the traditional partner violence literature (Moffitt et al., 2001). Additionally, Kellerman and colleagues (2013) note that the immediacy of access to a partner through information communication technologies makes emotional regulation a particularly important and relevant factor in cyber abuse, as they found that emotion regulation was correlated with electronic aggression victimization and

perpetration in both young-adult intimate partners and among friends. Thus, emotion regulation skills may allow a potential perpetrator to pause and refrain from engaging in abusive behavior via communication technology, which is both easily accessible and often immediately available. It is unclear why the present study failed to find such a relationship between CPA victimization and emotion regulation as has been found in previous research, especially since emotion regulation has been shown to moderate the relationship between having a risky home environment in childhood and electronic victimization among partners and electronic victimization and perpetration among friends (Kellerman et al., 2013). Future research should attempt to continue to investigate this relationship, particularly in how emotion regulation might interact with childhood factors and other relationship factors to predict both cyber abuse victimization and perpetration in intimate partners.

This study also investigated how relationship-related factors are related to cyber psychological abuse perpetration and victimization. As hypothesized, the addition of the relationship factors to this model significantly improved the model fit for models of both perpetration and victimization, providing support to include a dyadic perspective in understanding cyber psychological abuse. More specifically, behavioral jealousy and relationship satisfaction emerged as significant predictors of both CPA victimization and perpetration, both in the expected directions. Although they were correlated at the bivariate level, cognitive jealousy, attachment anxiety and avoidance, and communication skills were all unrelated to CPA perpetration and victimization after accounting for the other variables in the model.

Both relationship dissatisfaction and relationship jealousy have been associated with traditional intimate partner abuse (Capaldi et al., 2012; Schumacher, 2001; Stith et al., 2004). With regard to relationship satisfaction, results from the present study suggest that cyber psychological abuse between intimate adult partners is also characterized by significant relationship discord, over and above other problematic relationship patterns such as jealousy. A recent study observed similar patterns, finding that greater relationship dissatisfaction was correlated with stalking and psychological cyber abuse perpetration but not sexual cyber abuse in a similar sample of individuals recruited on MTurk (Watkins et al., 2016). However, just as with traditional partner abuse (Murphy & Eckhardt, 2005), this relationship may also operate in the reverse direction, wherein relationship dissatisfaction may be both a consequence and predictor of cyber psychological abuse. Thus, aggressive behaviors online such as posting embarrassing information about a partner, threatening, and sending repeated hostile texts may serve to further increase negative affect and relationship dissatisfaction over time.

Research on the relationship between jealousy and the different forms of online aggression, including cyberstalking, cyber relationship abuse, and social-media specific behaviors such as surveillance of one's partner on social media has grown in the past several years. This research has consistently shown positive associations with these outcomes, although there appear to be moderators, such as gender (e.g., Kellerman et al., 2014; Muise et al., 2014; Strawhun et al., 2013). In the present study, above and beyond all of the other correlates of cyber abuse, including technology use and traditional partner abuse, behavioral jealousy remained a unique predictor of both CPA victimization and perpetration, and this was the case for both males and females alike when follow-up

analyses were conducted separately by sex. It is not surprising that behavioral jealousy was a robust correlate of CPA, as there is some similarity among both constructs [e.g., looking through a partners belongings (jealousy) vs checking his/her phone without his/her permission (CPA)].

While emotional jealousy was not included in the multiple regression models because it was not associated with total CPA, it was notable and unexpected that emotional jealousy was correlated with *severe* CPA perpetration and victimization, but in the opposite direction as was predicted, such that individuals with less emotional jealousy reported more instances of severe CPA during the past year. One possible explanation for this finding is that individuals who are less likely to experience emotional jealousy in their intimate relationships may also have antisocial or psychopathic characteristics that would result in caring less about the harm of severe CPA behaviors or about following social norms surrounding appropriate use of technology. Such individuals would be more likely to be emotionally detached in their relationships and perhaps more likely to use CPA in an instrumental fashion to accomplish a goal (e.g., threatening a partner online to get him/her to comply with a request). Antisocial behavior was not assessed in the current study and has not yet been investigated with regard to cyberaggression in intimate partners. However, antisocial characteristics are a risk factor for traditional intimate partner violence perpetration (Capaldi et al., 2012). Additionally, a recent meta-analysis of risk factors for cyberbullying found that among other factors, cyberbullying perpetration was associated with more moral disengagement and antisocial behavior (Chen et al., 2016; Sticca et al., 2013). . Thus, future studies may want to examine the

relationship between emotional jealousy and severe CPA behaviors further and examine whether antisocial characteristics or behavior might mediate this relationship.

Additionally, it was puzzling that while jealous cognitions were correlated with CPA victimization and perpetration, they were unrelated to CPA victimization or perpetration after accounting for the other predictors in the model. This finding runs counter to research suggesting that feelings of jealousy, including suspicion, mistrust, and insecurity about a relationship, are the most common motivators for electronic aggression perpetration for both male and female college students (Kellerman et al., 2013). One possible explanation for the failure to find a significant association with regard to cognitive jealousy as well as with attachment in the multivariate models in the present study is that jealous cognitions and/or attachment insecurity may operate on cyber psychological abuse differently depending on sex or gender. Several studies have found that jealousy is strongly associated with cyberaggression in women whereas attachment issues factor more prominently in predicting cyberaggression in men. For example, in a recent study of social media monitoring (i.e., “creeping”), Muise and colleagues (2014) found that women who experienced feelings of jealousy were more likely to monitor their partner on social media than men, and this relationship was mediated by anxious attachment. Similarly, with regard to cyberstalking, Strawhun and colleagues (2013) found interpersonal jealousy and anger predicted cyberstalking for women but not men. For men, those with an unhealthy attachment and those who also engaged in physical aggression were more likely to perpetrate cyberstalking. Similarly, while not a study of intimate partners, Menard and Pincus (2007) found that insecure attachment was predictive of cyberstalking for women but not for men. While no moderation analysis

was conducted in the present study, follow-up analyses are partially consistent with these differences. Analyses predicting CPA by each sex separately showed that in both men and women, the relationship factors together significantly predicted CPA victimization and perpetration and that cognitive jealousy still did not predict CPA victimization or perpetration among males or females. However, males who reported more attachment avoidance did report less CPA victimization. Given these mixed findings, there is certainly more research needed to clarify the specific pathways by which the types of relationship jealousy and attachment patterns interact with demographic factors and/or technology use to predict CPA.

In a similar vein, the exploratory multivariate regression analyses separately by sex yielded some interesting findings with regard to potential factors that might predict CPA victimization and perpetration among each sex separately. For perpetration in males, all of the sets of variables contributed a significant proportion of variance to the model of CPA, and the final model explained a very large proportion (76%) of the variance in CPA, whereas for females, only the more proximal relationship, traditional abuse, and technology variables, as sets, contributed significantly to the model of CPA Perpetration and the model explained a smaller proportion of variance in CPA Perpetration (42%). CPA victimization did not show this pattern of associations, but the final model in males did explain more of the variance in CPA than it did in females (73% vs 43%). Again, while not a formal moderation analysis or structural equation model, these results do imply that the factors that predict CPA perpetration may be different for males and females. Particularly, it may be the case that for males, long-standing and stable concerns including childhood experiences and difficulties in emotion regulation

increase risk of CPA whereas for females, the more immediate relational context may have greater influence than factors such as personality characteristics. Similar theory in the traditional partner violence literature has been proposed with regard to pathways of how childhood experiences may lead to physical partner violence (Magdol et al., 1998; Wisdom et al., 2014), and with regard to physical partner violence, child abuse has been shown to directly affect IPV perpetration for males, but operate through relationship variables such as relationship quality in women (Herrenkohl et al., 2004). Thus, future studies and models of cyber abuse should test hypothesis that pathways among men and women may differ.

Overall, this study provides a beginning look at the prevalence of cyber psychological abuse victimization and perpetration in adult intimate partners, finding that CPA is quite common and that it is associated with all forms of traditional partner abuse and technology use. Furthermore, the present study found that several risk factors for traditional intimate partner abuse at multiple levels of analysis (e.g., psychological, dyadic) also predict cyber psychological abuse between intimate partners. That each set of these factors contributed to the models of CPA suggests that it is important to consider multiple levels of analysis in future conceptual and statistical models of CPA. Similar to the work investigating models of traditional partner abuse, the majority of the literature in the cyberaggression field (e.g., cyberbullying, cyber psychological abuse) has been limited in scope and has lacked comprehensive and integrative models (Kowalski et al., 2014; Murphy, 2013; Murphy, Norwood, & Poole, 2014). Also paralleling the traditional intimate partner violence literature, a more integrative explanatory framework would be beneficial in identifying the mechanisms by which multilevel factors found in the present

study impact cyber abuse between intimate partners (Murphy, 2013). Such a framework would ideally take into account cyber abuse as it relates to 1) the shared predictors with traditional forms of partner abuse drawn from multiple levels, 2) the relationship between cyber abuse and traditional forms of partner abuse and 3) the unique features of communication made available by information technologies such as the immediacy and accessibility of one's partner (Hinduja & Patchin, 2008).

One such model that may guide our understanding these connections is the reformulated Social Information Processing Model (SIP; Crick & Dodge, 1994). Noting the need for integrative theory with regard to traditional forms of intimate partner violence, Murphy and colleagues (2014) recently proposed that this model provides an integrative structure that is useful to understand the processes by which biopsychosocial factors work together to predict intimate partner violence (Murphy, 2013; Murphy et al. 2014). The SIP model was initially proposed with regard to children's social adjustment and aggression, and suggests that the emotional and cognitive processing of social information influences children's behavioral responses to internal and external cues. Crick and Dodge's revised model includes six core processes that interact reciprocally with existing knowledge and social information in response to such cues. These processes include: 1) attending to and encoding of social cues, 2) interpretation of those cues – e.g., attribution of cause and intent, 3) selection of a goal or desired outcome, 4) generation of possible responses, 5) selecting a behavioral response based on one's goals, and 6) enacting the behavior (Crick and Dodge, 1994). Importantly, these processes are circular rather than linear, such that feedback loops allow for appraisals of one's own behavior to also influence how one processes social cues (Crick & Dodge, 1994). Murphy and

colleagues (2014) note several hypotheses and associated empirical findings regarding the ways in which biopsychosocial predictors of IPV such as neurocognitive deficits, alcohol intoxication, and cultural factors, may influence risk for IPV through SIP processes. For example, alcohol intoxication may lead to the expression of aggression through impairing the intoxicated individual's ability to select a nonviolent and socially acceptable behavior that they otherwise would have chosen (response selection). (Murphy, 2013; Murphy et al., 2014). As a second example, childhood experiences of maltreatment and Post-Traumatic Stress Disorder (PTSD) may impact traditional forms of intimate partner violence through SIP pathways such as perceiving a partner's intentions as negative (cue interpretation), impaired development of a socially competent behavioral repertoire (limiting the options that are accessible during the response generation stage) and challenges in regulating hyper-arousal (biasing response selection toward extreme fight or flight reactions) (Murphy, 2013; Taft et al., 2008).

Considering CPA from a social information processing perspective may also assist with providing an overarching framework by which to understand cyber abuse in adult relationships. Thus, the correlates of CPA in the present study, including the psychological, relational, and technological factors, may also increase risk for CPA through influences on social information processing. In fact, it has been argued in the children's aggression literature that the particular qualities and norms of communication technologies, such as the dearth of social cues, social cue permanence (e.g., one can look at a text on one's phone multiple times), potential anonymity, ambiguity surrounding the intentions of cues, perceptions of privacy and perceived audience in social media, and

continuous access to technology may all increase the potential for cyber aggression through negatively impacting social information processing (Runions et al., 2013).

These functions of communication technologies may also be important in understanding the role of social information processing in cyber abuse in adult relationships. Runions and colleagues (2013) argue that compared to social cues during face-to-face interactions that degrade in memory over time, the permanency of some electronic communications allow for repeated exposure to and therefore repeated processing of the cues themselves. They also suggest that the lack of visible and intonational social cues in electronic communications increases the likelihood of attributions of hostile intent through attributing “ambiguous” electronic messages in a hostile way. Several of the observed predictors of CPA found in the present study such as experiences of child maltreatment and alcohol intoxication have already been associated with increased likelihood of perceiving and/or verbalizing a partner’s intentions as negative (Eckhardt, 2007; Murphy et al., 2014; Taft et al., 2008). Individuals who, for a variety of reasons (e.g., alcohol intoxication, experiences of childhood abuse, previous experiences of traditional abuse victimization) are already at increased likelihood of perceiving their partners’ intent as hostile may be more likely to interpret ambiguous electronic communications as such, increasing the risk of cyber abuse perpetration. Furthermore, electronic communications may prevent access to cues about harm to the victim, decreasing an individual’s ability to see or consider the potential negative outcomes of cyber abuse and increasing the possibility of a decision to engage in cyber abuse. Lack of emotion regulation skills would also contribute here in influencing one’s ability to carefully consider the goals of these electronic communications (Murphy,

2013), which may include maintaining the relationship or even maintaining a certain perception of a relationship among one's social media network. This framework would also help explain the unexpected finding in this study that severe CPA was associated with decreased technological competency, as someone who is competent at the use of technology may be more likely to understand and consider the consequences and harm associated with this behavior.

Using a SIP framework may also help explain the finding that females reported more CPA and may help inform hypotheses surrounding differential associations between the predictors examined in the study and CPA based on SIP variables. There has been some research to suggest that females are more likely to attribute an angry response to ambiguous social stimulations (Chen et al., 2012). Furthermore, women who experience jealous feelings are more likely to monitor their partners online and jealousy is more strongly associated with cyber stalking among women than men (Kellerman et al., 2013; Strawhun et al. 2013; Muise et al. 2014). Therefore, it's possible that women who experience jealousy in their relationship and/or experience other relationship problems may be more likely to interpret cues from a partner as hostile, leading to greater CPA. For men, the role of emotion regulation in SIP may be more salient, as men are less likely to be able to regulate their aggressive responses when presented with emotionally-evocative information (Knight et al., 2002). In addition, boys may have stronger access to aggressive responses than girls and the influence of previous relationship aggression on perceived consequences of aggression is also stronger for boys (Calvette et al. 2016). Considering these findings, future research would benefit from examining gender

differences in social information processing variables as they relate to cyber abuse in adult intimate partners.

Finally, considering CPA from a social information processing perspective may help explain the strong relationships between traditional forms of partner abuse and cyber psychological abuse. Experiences of victimization or perpetration of physical assault, emotional abuse, or sexual abuse in one's relationship could certainly lead to a hostile attribution bias in electronic communications. In a longitudinal investigation among adolescents, Calvette and colleagues (2016) found that self-report of perpetration of traditional dating aggression (measured as physical, sexual, and verbal abuse) at baseline predicted a greater tendency to attribute hostile intentions and anticipate positive outcomes for aggressive responses in hypothetical scenarios of conflict with dating partners. Additionally, among high-school age peers, greater attributions of hostile intent were associated with cyber aggression victimization (Pornari and Wood, 2010). In light of these findings, it is interesting to hypothesize that individuals who have experienced traditional forms of abuse may be likely to interpret electronic communications as hostile, leading to CPA. For example, a text that states, "Please come home tonight by 7" with no other context may be seen as abusive if the recipient has experienced in-person attempts to control one's behavior, or, in the absence of prior controlling or abusive experiences it may be interpreted as benign (if the meaning is ambiguous), or a positive (if the message is presumed to reflect an invitation for a meal, a surprise, sexual intimacy, etc.). In a related vein, the relationship may also work in the opposite direction, wherein experiences of cyber abuse, such as threatening texts may heighten attention to and interpretation of messages communicated in person.

Taken together, the evidence from the present study suggests that a Social Information Processing Model may be beneficial going forward in providing a framework by which to examine the mechanisms that predict cyber abuse in intimate relationships. This study found several key variables from multiple levels of analysis were associated with CPA. Testing how each one may relate to the hypothesized SIP mechanisms, and how SIP deficits during electronic communications may lead to CPA, will be important in exploring integrative models of cyber abuse that can guide intervention and prevention efforts going forward. What is most clear from the present study however, is that cyber abuse is common in adult intimate relationships and needs to be considered in understanding and treating partner abuse more generally. Given the increasing prevalence of electronic communications in daily life (Spitzberg & Hoobler, 2002), efforts to continue to understand, prevent, and treat cyber abuse will continue to be very important in the future.

Limitations and Future Directions

These results are important to consider in light of several limitations. First, as with any cross-sectional study based on retrospective reporting, the temporal nature of the correlates of CPA victimization and perpetration is unclear. Several of the predictors that are hypothesized to predict CPA in the present study could be consequences of CPA, or even be associated with CPA in a cyclical way, and these temporal associations are not able to be teased out given the present study's design. For example, given that various forms of cyberaggression, including cyber psychological abuse, have now repeatedly been associated with traditional partner violence victimization and perpetration (Temple et al., 2016; Cutbush et al., 2010; Leisring & Giumetti, 2014; Schnurr et al., 2013;

Wolford et al., 2016; Zweig et al., 2013), future longitudinal research should attempt to determine the direction of the relationship between in-person experiences of abuse and cyber psychological abuse in adults, as it is critical for prevention efforts to determine whether experiences of cyber abuse are risk factors for later in-person experiences of physical violence. Only one study of cyber abuse to date has used a longitudinal design, and has found that among adolescents, physical violence victimization and cyber abuse perpetration and victimization both predicted cyber abuse victimization one year later (Temple et al., 2016). Given that cyber abuse between adult intimate partners also appears to be bidirectional, it is also important to examine how reciprocal patterns may influence the associations between online and in-person forms of abuse, for example whether on-line forums and electronic modes of communication provide unique opportunities to escalate conflicts that begin in-person.

In a related vein, longitudinal studies would also assist with understanding the consequences and outcomes of cyber psychological abuse, especially with regard to some of the correlates of victimization in the present study such as alcohol use and relationship dissatisfaction. Young-adults of both genders report that electronic victimization is distressing in intimate relationships, even more than when it occurs between friends, and, among women, alcohol use was correlated with electronic victimization over and above other types of victimization (Bennett et al., 2011). While traditional IPV is well-noted to have negative consequences for victims (Caetano & Cunradi, 2003; Gerlock, 1999; Houry, Kaslow & Thompson, 2005; Jones, Hughes & Unterstaller, 2001, Kaslow et al., 2000), and cyberbullying research has noted that victims also experience negative mental health outcomes for children and adolescents (Kowalski et al., 2008; Hinduja & Patchin,

2010), additional longitudinal research will help determine such consequences of cyber psychological abuse as well.

Second, the present study assessed cyber psychological abuse in relationships, referring to abusive behaviors that occur during the course of conflict with one's partner, similar to the Conflict Tactics Scales (Straus et al., 1996). As noted earlier, cyber psychological abuse may itself have different facets (e.g., minor vs severe CPA) and CPA may also be part of an even larger multidimensional construct that includes cyberstalking between partners (e.g., using GPS technology to track a partner), and sexual cyber abuse (e.g., pressuring a partner to send nude photos of him/herself), which were not measured in the present study (Watkins et al., 2016). Indeed, there have been more comprehensive and multidimensional measures of cyber abuse developed since the present study was proposed, such as the Cyber Abuse in Relationships Scale (CARS; Watkins et al., 2016). It would be worthwhile for future research to continue to work toward a uniform definition and conceptualization of CPA and to identify whether the predictors of influence in this study are also correlated with cyberstalking and sexual cyber abuse in adult intimate relationships.

Also with regard to the CPA scales, the scales contain items that may have been interpreted in several different ways, potentially impacting the validity of the measure. CPA item number 2, for example, asks "Have you insulted your partner in an email, instant message, text message, or on a social networking site?" Individuals may have different criteria for what constitutes an insult, and to one individual, a text message stating, "Those pants don't look the best on you" might be meant to insult, whereas to others, it might be said with neutral or positive intentions. Future psychometric research

comparing the measurement invariance across different samples would assist with understanding whether different groups of individuals (e.g., men and women), are interpreting the CPA items in a conceptually similar way.

Third, it is also worthwhile to note limitations related to generalization of findings. While the present study did not limit participation based on relationship status, almost all of the individuals who participated identified themselves as being in a current relationship (possibly due to the recruitment ad title: Technology in Relationships Survey), and thus findings from the study cannot be generalized to individuals no longer together, especially given that there were differences in CPA perpetration and victimization based on relationship status in the current sample. Given that some behaviors, such as online surveillance of one's partner, may be particularly pronounced after a distressing relationship breakup (Fox & Tokunaga, 2015), it is possible that the factors that predict abuse of technology in previous relationships may be different from the factors that predict abuse in a current relationship. Future research should extend the current findings to samples of former relationship partners.

Additionally, it is unclear whether the findings in this study can be applied to individuals who self-identify as gay, lesbian, or transgender, as this was not assessed in the current assessment battery. There is some recent evidence to suggest that college students who identify as LGBT may experience cyberbullying victimization and perpetration at higher rates than those who do not identify as LGBT (Bauman & Baldasare, 2015). The sample size in the current study was not sufficient to examine potential differences between individuals in same-sex versus opposite sex relationships. Future research on cyber abuse in intimate partners should measure and assess whether

there may be differences in CPA for LGBT populations, and for individuals who self-identify as cisgender versus transgender.

Also with regard to generalizability, this study recruited participants from MTurk. While “Turkers” are more representative of the general population than college students (Buhrmester et al., 2011; Ross et al., 2010; Bohannon, 2011), MTurk participants may use the internet more than individuals in the general population. Indeed, the average number of minutes spent on the internet was extraordinarily high in this study (over six hours of internet use on an average day, not including MTurk activities or social media usage). Given that internet use itself was associated with increased CPA victimization and perpetration in this study, it will be important to extend the current findings to samples of individuals who may use the internet more sporadically. In addition, the measure of internet use may have overestimated the average daily time that individuals spent on the internet. The questionnaire asks individuals to indicate how often they spent doing each of several different activities (e.g., checking email, gaming), and does not account for multitasking. Thus, an individual who spends 60 minutes gaming while also having their email up in the background may have reported 60 minutes for both activities, artificially inflating the time spent per day. Given that this may have been the case, the correlation between daily internet use and CPA perpetration and victimization should be interpreted with caution.

Clinical Implications and Conclusions

Despite these limitations, there are some clinical implications of the present study worth noting. First, the high prevalence of cyber psychological abuse and its association with traditional partner violence in this sample suggests that clinicians who provide services to individuals at risk for partner abuse should be assessing and/or screening for cyber abuse in intimate relationships along with physical and emotional abuse. While others have called for such assessment and efforts on college campuses for young-adults (Wolford et al., 2016; Melander, 2010), this study suggests that screening and intervention efforts should be expanded beyond adolescent or college student populations to adult-focused service organizations, such as community domestic violence clinics, batterer intervention programs, and other victims services organizations. Similarly, clinicians who work with at-risk individuals should be mindful that when a client or patient reports cyber abuse (either victimization or perpetration), they also have a greater probability of experiencing victimization and perpetration of traditional abuse, including physical assault.

With regard to prevention and clinical intervention, the overlap between cyber psychological abuse and other forms of partner abuse suggests that clinicians who provide services for victims of partner violence should consider technology safety in creating safety plans with clients who are at risk for physical abuse in relationships. Increasing knowledge about technology safety such as changing the privacy settings on one's social media account has been shown to increase confidence in victims' ability to protect oneself from cyber abuse (Finn & Atkinson, 2009). Although the outcome research is limited, the available evidence suggests that continued efforts to increase

knowledge of safety strategies may in fact be helpful in the prevention of cyber abuse and perhaps physical, sexual, or in-person psychological abuse as well. A good example of such a program is the National Network to End Domestic Violence's National Safety Net Project (Finn & Atkinson, 2009), which provides resources online (<http://www.nnedv.org>), as well as provides training of advocates, clinicians, and professionals with the goal of increasing awareness and knowledge of technology safety for individuals who experience partner violence.

In addition to increasing education and safety for victims, results from this study also suggest that efforts should be made to develop and intervene with adults who may perpetrate cyber abuse, especially since perpetration of CPA is strongly related to in-person abuse. Currently, there are no widely-available programs or educational materials designed specifically to work with adult perpetrators of cyber abuse, and future work to develop resources or strategies to intervene with perpetrators is necessary. Given this study's findings regarding how psychological factors such as emotion regulation problems and alcohol use are associated with CPA perpetration, efforts to begin to develop interventions for cyber abuse perpetration could include both education about the consequences of cyber abuse as well as interventions to improve emotion regulation skills (e.g., Dialectical Behavior Therapy; Linehan, 1993), and/or relationship skills.

Finally, the strong association between technology use and CPA victimization suggests that screening and interventions for cyber abuse may be particularly effective if presented through the electronic context. Spence-Diehl (2003) notes that technology can be a "double-edged sword" wherein technology is harmful for perpetration of stalking but useful for prevention efforts. Indeed, there have been some efforts to use technology to

reach out to intervene in relationships with cyber abuse. For example, the National Network to End Domestic Violence has a technology safety phone application (<http://techsafetyapp.org/>) available in the app store that provides education, resources, and referrals for technology-related harassment, impersonation, cell phone safety, device safety, location safety, and online safety.

Appendices

Appendix A: MTurk HIT Page and Consent Form

HIT Preview Page.

Technology in Relationships Survey (Hitpage): This HIT may contain adult content. Your discretion is advised.

Requester: [Jocelyne Reynr](#) HITs available: 0 HITs available: 0 Iterations: 1 Days

Qualifications Required: HIT Approval Rate (%) for all Requesters' HITs greater than or equal to 90, Location is US, Adult Content Qualification equal to 1

Payment: \$2.00 per HIT

2025-10-10 10:00

We are conducting an academic survey about technology and intimate relationships. The purpose of the study is to examine the use of technology within relationships. The survey will ask you demographic questions as well as ask you about your past experiences, your personality characteristics, your emotions and behaviors, your use of technology and social media, and your experiences in your relationships, both positive and negative.

Please note that some of the information you will be asked to provide is sensitive in nature (e.g., alcohol use) but we will not link names or IP addresses to your information. Your information will remain private in any publications.

To qualify for the survey, you must:

- 1) Be over age 18
- 2) Currently be in an intimate relationship OR have been in an intimate relationship during the past year
- 3) Currently reside in the United States
- 4) Speak English
- 5) Have at least one active social media account (e.g., Facebook, LinkedIn, Twitter).

Follow the link to the survey to see if you qualify. If you qualify and complete the full survey, you will be paid 2.00 through your Amazon account. **If you do not qualify, you will not be paid and you will be redirected to MTurk.** If we think you responded randomly, you will not be paid. You may not complete the survey more than once.

At the end of the survey, you will receive a code to paste into the box below to get credit for taking the survey. **Make sure to leave this window open as you complete the survey.** When you are finished, you will return to this page to past the code into the box.

You are invited to participate in a survey entitled “Technology in Relationships.” The study is being conducted by Jacqueline C. Reyner, MA in the Psychology department of the University of Maryland, Baltimore County.

Before you begin, please read the informed consent information below. Informed consent refers to voluntarily choosing to participate in research based on an accurate and complete understanding of its purposes, procedures, risks, benefits, and alternatives. **If you have any questions before completing this survey, please contact the Investigator, Jacqueline C. Reyner, MA by email at reyjac1@umbc.edu or technologyinrelationshipssurvey@gmail.com. You may also contact Christopher M. Murphy, PhD, chmurphy@umbc.edu the faculty advisor for the study.**

The purpose of the study is to examine how individuals use technology with relationship partners and the ways in which technology use and behavior in relationships are related.

In order to participate, you must:

- 1) Be over the age of 18
- 2) Live in the United States
- 3) Read and write in English
- 4) Be currently in an intimate relationship OR have been in an intimate relationship during the past 12-months
- 5) Have both a Mechanical Turk account with at least 60% approval rating AND at least one social media account (e.g., Facebook, Twitter, Instagram, LinkedIn).

If you decide to take part in this study, you will be asked to complete a 5-minute screening questionnaire to see if you qualify. **If you do not qualify for the study, you will be directed back to MTurk and you will not be paid.** If you do qualify for the study, you may complete the full survey, which will take approximately 60-90 minutes. The survey will be contained in 1 HIT and will ask a variety of questions about you, your behavior, your personality, and your social media use.

If you complete the HIT, you will be paid \$2.00 via the Mechanical Turk Interface. No direct payments will be sent from the University of Maryland Baltimore County.

The risks of participation are minimal. There will be no cost to participating. Some of the questions may be upsetting or make you feel uncomfortable. We take every reasonable effort to protect your confidentiality such as storing your data on an encrypted, external server (Qualtrics). Your Amazon account information will be kept in a separate password-protected file from your survey information. Thus, the only information that may link you to your account will be your Amazon ID number and we will not collect any other identifying information about you (e.g., your name or SSN). However, confidentiality during actual internet communication procedures (e.g., email to the study investigators) cannot be guaranteed. Your confidentiality will be kept to the degree permitted by the technology being used.

The University of Maryland Baltimore County makes every effort to keep the information collected from you private. Results of the research may be presented at meetings or in publications without any reference to you.

Your participation in the survey is voluntary. You may decline to answer any question and you have the right to withdraw from participation at any time. **However, if you do not complete the survey, answer the survey items randomly, or try to complete the survey a second time, you will not be paid and your MTurk rating may be negatively affected.**

If you wish to withdraw from the study at any time after starting, please exit the survey and contact the investigator listed above.

This study has been reviewed and approved by the UMBC Institutional Review Board (IRB). A representative of that Board, from the Office for Research Protections and Compliance, is available to discuss the review process or your rights as a research participant. Contact information of the office is (410) 455-2737 or compliance@umbc.edu.

If you agree to participate in the study, please click “I agree”.

- I agree
- I decline participation

Appendix B: Assessment Battery

Please enter your Amazon ID

Age (in years):

Sex:

- Female
- Male
- Other _____

Are you currently living in the United States?

- Yes
- No

Please enter your state of residence

What do you consider your race to be (Please check all that apply):

- American Indian or Alaska Native
- Asian or Pacific Islander
- Black or African American
- Native Hawaiian or Other Pacific Islander
- White
- Other (please specify) _____

Are you of Hispanic or Latino descent, such as Mexican, Puerto Rican, Cuban, or some other Latin American Background?

- Yes
- No

Employment Status:

- Not currently working outside the home (e.g., unemployed, retired, etc) other than completing HITS on Mturk
- Working part-time (less than 30 hours a week)
- Working full-time (30 hours a week or greater)

Occupation:

Last year (2015), what was your total family income from all source, before taxes?

- Less than \$10,000
- \$10,001 - \$20,000
- \$20,001 - \$30,000
- \$30,001 - \$40,000
- \$40,001 - \$50,000
- \$50,001 - \$60,000
- \$60,001 - \$70,000
- \$70,001 - \$80,000
- \$80,001 - \$90,000
- \$90,001 - \$100,000
- \$100,001 - \$110,000
- \$110,001 - \$120,000
- \$120,001 - \$130,000
- \$130,001 - \$140,000
- \$140,001 - \$150,000
- >\$150,001

Not including yourself, how many adults (age 18 or older) live in your home?

How many children (under 18) live in your home?

Please indicate the highest level of education you have completed:

- 8th grade or below
- 9th grade
- 10th grade
- 11th grade
- 12th grade/High School Diploma/GED
- 1 year college
- 2 years college/AA Degree
- 3 years college
- 4 years college/ Completed college degree
- Some graduate school
- Completed masters degree
- Completed doctoral, medical, law or other advanced degree

Do you have at least one account on a Social Networking Website? A SNS is any website that allows you to construct a profile, connect with other users, and view their connections(e.g. Facebook, Twitter, Instagram, etc?)

- Yes
- No

The current study focuses on intimate relationship. Are you currently in an intimate relationship?

- Yes
- No

Display This Question:

If The current study focuses on intimate relationship. Are you currently in an intimate relationship? Yes Is Selected

How long have you been in the relationship? (in months)

What is the sex of your partner?

- Male
- Female
- Other

Are you "friends" or "connected" to your partner on any social media site?

- Yes
- No

Display This Question:

If The current study focuses on intimate relationship. Are you currently in an intimate relationship? No Is Selected

Have you been in an intimate relationship in the past 12-months?

- Yes
- No

If you have been in more than one intimate relationship in the past 12 months, please answer these questions with regard to the relationship in the past year that you feel to have been the **MOST SIGNIFICANT** to you

How long has it been since you separated? (in months)

How long were you together before you separated (in months)

What is the sex of your ex-partner?

- Male
- Female
- Other

Were you "friends" or "connected" to your ex partner on any social media site when you were together?

- Yes
- No

Are you still "friends" or "connected" to your ex partner on any social media site?

- Yes
- No

Which of the following best describes your relationship with your partner (or ex-partner)

- Used to date, not currently dating or seeing one another
- Used to live together, not currently dating or seeing one another
- Used to live together, currently dating or seeing one another
- Currently dating or seeing one another, but not living together
- Currently living together
- Married and living together
- Married but separated, currently dating or seeing one another
- Married but separated, not currently dating or seeing one another
- Divorced, and dating or seeing one another
- Divorced, not dating or seeing one another.

Display This Question:

If Age (in years): Text Response Is Greater Than or Equal to 18

And Are you currently living in the United States? Yes; State of Residence Is Selected

And Do you have at least one account on a Social Networking Website? A SNS is any website that allows... Yes Is Selected

And If

If The current study focuses on intimate relationship. Are you currently in an intimate relationship? Yes Is Selected

Or Have you been in an intimate relationship in the past 12-months? Yes Is Selected

Congratulations. You qualify for the full survey. Would you like to take the full survey? Remember that once you click yes below, you may still exit the survey at any time. However, only those who complete the survey in its entirety will receive compensation.

- Yes
- No

The following questions ask you about your use of different types of technologies. Which of the following devices do you personally own (check all that apply)?

- Desktop Computer
- Laptop Computer
- Tablet Computer (e.g., iPad)
- Home Phone ("land-line")
- Cellular Telephone (not a smart-phone)
- Smartphone (cellular phone with computer functions like applications and Internet use)

Display This Question:

If Which of the following devices do you personally own (check all that apply)? Cellular Telephone (not a smart-phone) Is Selected

Or Which of the following devices do you personally own (check all that apply)? Smartphone (cellular phone with computer functions like applications and Internet use) Is Selected

Please think about your cellular telephone use and indicate how often you do the following in an average day.

	0	1-2	3-5	6-10	11-20	20-40	41-50	51-100	101-500	501+
I send about ___ texts per day.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I receive about ___ texts per day.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I make about ___ phone calls per day.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I receive about ___ phone calls per day (including those you do not answer).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please indicate how often IN GENERAL you use the Internet for the following activities. Please note that you should include time spent on the Internet from any Internet-capable device including: smartphone, Personal Computer, iPad, or any other electronic communication device. ***Do NOT include use of the Internet for activities related to your employment***

	I do not do this online	1-10 minutes	11-20 minutes	21-30 minutes	31-60 minutes	1-2 hours	2-3 hours	3-4 hours	4-5 hours	More than 5 hours/day
I use personal email	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I visit chat rooms	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I instant message	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I online date	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I use search engines (e.g., Google)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I access personal information online (e.g., Banking; Bill pay)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I shop online	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I complete HITS on MTurk or similar sites.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I download or listen to music on the Internet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I download or watch videos on the Internet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I play games online (e.g., Starcraft, Diablo).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Now, please think about your use of Social Networking Sites. On which Social Networking Sites do you currently have a registered account?

	No	Yes
Facebook	<input type="radio"/>	<input type="radio"/>
Twitter	<input type="radio"/>	<input type="radio"/>
Pinterest	<input type="radio"/>	<input type="radio"/>
Instagram	<input type="radio"/>	<input type="radio"/>
LinkedIn	<input type="radio"/>	<input type="radio"/>
Google+	<input type="radio"/>	<input type="radio"/>
Other (specify)	<input type="radio"/>	<input type="radio"/>
Other (specify)	<input type="radio"/>	<input type="radio"/>

Display This Question:

If Now, please think about your use of Social Networking Sites. On which Social Networking Sites do you currently have a registered account? Facebook - Yes Is Selected

How long have you had an account on Facebook?

- Less than 6 months
- 6 months - 1 year
- 1-2 years
- 2-3 years
- More than 3 years

Display This Question:

If Now, please think about your use of Social Networking Sites. On which Social Networking Sites do you currently have a registered account? Twitter - Yes Is Selected

How long have you had an account on Twitter?

- Less than 6 months
- 6 months - 1 year
- 1-2 years
- 2-3 years
- More than 3 years

Display This Question:

If Now, please think about your use of Social Networking Sites. On which Social Networking Sites do you currently have a registered account? Pinterest - Yes Is Selected

How long have you had an account on Pinterest?

- Less than 6 months
- 6 months - 1 year
- 1-2 years
- 2-3 years
- More than 3 years

Display This Question:

If Now, please think about your use of Social Networking Sites. On which Social Networking Sites do you currently have a registered account? Instagram - Yes Is Selected

How long have you had an account on Instagram?

- Less than 6 months
- 6 months - 1 year
- 1-2 years
- 2-3 years
- More than 3 years

Display This Question:

If Now, please think about your use of Social Networking Sites. On which Social Networking Sites do you currently have a registered account? LinkedIn - Yes Is Selected

How long have you had an account on LinkedIn?

- Less than 6 months
- 6 months - 1 year
- 1-2 years
- 2-3 years
- More than 3 years

Display This Question:

If Now, please think about your use of Social Networking Sites. On which Social Networking Sites do you currently have a registered account? Google+ - Yes Is Selected

How long have you had an account on Google+?

- Less than 6 months
- 6 months - 1 year
- 1-2 years
- 2-3 years
- More than 3 years

Display This Question:

If Now, please think about your use of Social Networking Sites. On which Social Networking Sites do you currently have a registered account? Other (specify) - Yes Is Selected

How long have you had an account on\${q://QID179/ChoiceTextEntryValue/7} ?

- Less than 6 months
- 6 months - 1 year
- 1-2 years
- 2-3 years
- More than 3 years

Display This Question:

If Now, please think about your use of Social Networking Sites. On which Social Networking Sites do you currently have a registered account? Other (specify) - Yes Is Selected

How long have you had an account on \${q://QID179/ChoiceTextEntryValue/8}?

- Less than 6 months
- 6 months - 1 year
- 1-2 years
- 2-3 years
- More than 3 years

Which social networking site do you currently use the MOST?

- Facebook
- Twitter
- Pinterest
- Instagram
- LinkedIn
- Google+
- Other (specify) _____
- Other (specify) _____

About how many "friends" or "connections" do you have on the SNS site you use the most?

- 10 or less
- 11-50
- 51-100
- 101-150
- 151-200
- 201-250
- 251-300
- 301-400
- more than 400

In the past week, on average, approximately how many minutes per day have you spent on the SNS site you use the most? This includes both viewing and posting content.

- Less than 10
- 10-30 minutes
- 31-60 minutes
- 1 - 2 hours
- 2 - 3 hours
- more than 3 hours

Please answer the following questions about your use of the SNS site you use the most.

	Strongly Disagree	Disagree	Some what Disagree	Some what Agree	Agree	Strongly Agree
1. I feel disconnected from friends when I have not logged into \${q://QID188/ChoiceGroup/SelectedChoices}	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. I would like it if everyone used \${q://QID188/ChoiceGroup/SelectedChoices} to communicate.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. I would be disappointed if I could not use \${q://QID188/ChoiceGroup/SelectedChoices} at all.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. I get upset when I can't log on to \${q://QID188/ChoiceGroup/SelectedChoices}	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. I prefer to communicate with others mainly through \${q://QID188/ChoiceGroup/SelectedChoices}	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. \${q://QID188/ChoiceGroup/SelectedChoices} plays an important role in my social relationships.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. I enjoy checking my \${q://QID188/ChoiceGroup/SelectedChoices} account.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. I don't like to use \${q://QID188/ChoiceGroup/SelectedChoices}.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Using \${q://QID188/ChoiceGroup/SelectedChoices} is part of my everyday routine.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. I respond to content that others share using \${q://QID188/ChoiceGroup/SelectedChoices}	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

We are interested in how people use various computer-mediated communication (CMC) technologies for conversing with others. For the purpose of this questionnaire, please consider CMC to include all forms of e-mail and computer-based networks (e.g., instant messaging, world-wide-web, chat rooms, personal data assistant, electronic bulletin boards, terminal-based video-telephony, etc.) for sending and receiving written messages with other people. For this survey, indicate the degree to which each statement regarding your use of various CMC media is true or untrue of you.

	Not at all true of me	Mostly not true of me	Neither true nor untrue of me; undecided	Mostly true of me	Very True of me
1. I enjoy communicating using computer media	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. I am nervous about using the computer to communicate with others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. I am very motivated to use computers to communicate with others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I look forward to sitting down at my computer to write to others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Communicating through a computer makes me anxious.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. I am very knowledgeable about how to communicate through computers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. I am never at a loss for something to say in CMC	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. I am very familiar with how to communicate through email and the internet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. I always seem to know how to say things the way I mean them through CMC	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. When communicating with someone through a computer, I know how to adapt my messages to the medium.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Not at all true of me	Mostly not true of me	Neither true nor untrue of me; undecided	Mostly true of me	Very True of me
11. I don't feel very competent in learning and using communication media technology.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. I feel completely capable of using almost all currently available CMCs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. I am confident I will learn how to use any new CMCs that are due to come out.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. I'm nervous when I have to learn how to use a new communication technology.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. I find changes in technology very frustrating.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. I quickly figure out how to use new CMC technologies.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. I know I can learn to use CMC technologies when they come out.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. If a CMC isn't user friendly, I'm not likely to use it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please select the answer that is correct for you

1. How often do you have a drink containing alcohol?

- Never
- Monthly or less
- Two to four times a month
- Two to three times a week
- Four or more times a week

2. How many drinks containing alcohol do you have on a typical day when you are drinking

- 0
- 1 or 2
- 3 or 4
- 5 or 6
- 7 or 9
- 10 or more

3. How often do you have six or more drinks on one occasion?

- Never
- Less than monthly
- Monthly
- Weekly
- Daily or almost daily

4. How often during the last year have you found that you were not able to stop drinking once you had started?

- Never
- Less than monthly
- Monthly
- Weekly
- Daily or almost daily

5. How often during the last year have you failed to do what was normally expected from you because of drinking?

- Never
- Less than monthly
- Monthly
- Weekly
- Daily or almost daily

6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?

- Never
- Less than monthly
- Monthly
- Weekly
- Daily or almost daily

7. How often during the last year have you had a feeling of guilt or remorse after drinking?

- Never
- Less than monthly
- Monthly
- Weekly
- Daily or almost daily

8. How often during the last year have you been unable to remember what happened the night before because you had been drinking?

- Never
- Less than monthly
- Monthly
- Weekly
- Daily or almost daily

9. Have you or someone else been injured as a result of your drinking?

- No
- Yes, but not during the last year
- Yes, during the last year

10. Has a relative or friend, or a doctor or other health worker been concerned about your drinking or suggested you cut down?

- No
- Yes, but not in the last year
- Yes, during the last year

The following questions concern information about your potential involvement with drugs not including alcoholic beverages during the past 12 months. Carefully read each statement and decide if your answer is "Yes" or "No". Then, circle the appropriate response beside the question. In the statements, "drug abuse" refers to (1) the use of prescribed or over the counter drugs in excess of the directions and (2) any non-medical use of drugs. The various classes of drugs may include: cannabis (e.g. marijuana, hash), solvents, tranquilizers (e.g. Valium), barbiturates, cocaine, stimulants (e.g. speed), hallucinogens (e.g. LSD) or narcotics (e.g. heroin). Remember that the questions do not include alcoholic beverages. Please answer every question. If you have difficulty with a statement, then choose the response that is mostly right. These questions refer to the past 12 months.

1. Have you used drugs other than those required for medical reasons?

- Yes
- No

2. Have you abused prescription drugs?

- Yes
- No

3. Do you abuse more than one drug at a time?

- Yes
- No

4. Can you get through the week without using drugs?

- Yes
- No

5. Are you always able to stop using drugs when you want to?

- Yes
- No

6. Have you had "blackouts" or "flashbacks" as a result of drug use?

- Yes
- No

7. Do you ever feel bad or guilty about your drug use?

- Yes
- No

8. Does your partner (or parents) ever complain about your involvement with drugs?

- Yes
- No

9. Has drug abuse created problems between you and your partner or your parents?

- Yes
- No

10. Have you lost friends because of your drug use?

- Yes
- No

11. Have you neglected your family because of your use of drugs?

- Yes
- No

12. Have you been in trouble at work because of drug abuse?

- Yes
- No

13. Have you lost a job because of drug abuse?

- Yes
- No

14. Have you gotten into fights when under the influence of drugs?

- Yes
- No

15. Have you engaged in illegal activities in order to obtain drugs?

- Yes
- No

16. Have you been arrested for possession of illegal drugs?

- Yes
- No

17. Have you ever experienced withdrawal symptoms (felt sick) when you stopped taking drugs?

- Yes
- No

18. Have you had medical problems as a result of your drug use (e.g. memory loss, hepatitis, convulsions, bleeding, etc.)?

- Yes
- No

19. Have you gone to anyone for help for a drug problem?

Yes

No

20. Have you been involved in a treatment program specifically related to drug use?

Yes

No

How often do each of the following apply to you?

	Almost never	Sometimes	About half the time	Most of the time	Almost always
I am clear about my feelings.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I pay attention to how I feel.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I experience my emotions as overwhelming and out of control.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have no idea how I am feeling.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have difficulty making sense out of my feelings.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am attentive to my feelings.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I know exactly how I am feeling.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I care about what I am feeling.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am confused about how I feel	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I'm upset, I acknowledge my emotions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I'm upset, I become angry with myself for feeling that way.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I'm upset, I become embarrassed for feeling that way.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I'm upset, I have difficulty getting work done.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I'm upset, I become out of control.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I'm upset, I believe that I will remain that way for a long time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I'm upset, I	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

believe that I'll end up feeling very depressed.					
When I'm upset, I believe that my feelings are valid and important.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I'm upset, I have difficulty focusing on other things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I'm upset, I feel out of control.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I'm upset, I can still get things done.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I'm upset, I feel ashamed with myself for feeling that way.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I'm upset, I know that I can find a way to eventually feel better.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I'm upset, I feel like I am weak.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I'm upset, I feel like I can remain in control of my behaviors.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I'm upset, I feel guilt for feeling that way.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I'm upset, I have difficulty concentrating.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I'm upset, I have difficulty controlling my behaviors.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I'm upset, I believe that there is nothing I can do to make myself feel better.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I'm upset, I	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

become irritated with myself for feeling that way.					
When I'm upset, I start to feel very bad about myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I'm upset, I believe that wallowing in it is all I can do.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I'm upset, I lose control over my behaviors.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I'm upset, I have difficulty thinking about anything else.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I'm feeling upset, I take time to figure out what I'm really feeling.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I'm upset, it takes me a long time to feel better.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I'm upset, my emotions feel overwhelming.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Display This Question:

If The current study focuses on intimate relationship. Are you currently in an intimate relationship? Yes Is Selected

The following questions ask about your intimate relationships. Please answer these questions with respect to your CURRENT partner (girlfriend/boyfriend/spouse etc). If you currently have multiple partners, please answer the questions with regard to whichever current relationship you feel is most significant to you.

Display This Question:

If Have you been in an intimate relationship in the past 12-months? Yes Is Selected

The following questions ask about your intimate relationships. Whenever you see questions about "your partner" please answer the questions about the intimate relationship that was most significant to you over the past year.

No matter how well a couple gets along, there are times when they disagree, get annoyed with the other person, want different things from each other, or just have spats or fights because they are in a bad mood, tired, or for some other reason. This is a list of things that might happen when you have differences. Please indicate how many times you did each of these things in the past year, and how many times your partner did them in the past year.

How often did this happen in the past 12 months?

	Once	Twice	3 - 5 Times	6 - 10 times	11 - 20 times	More than 20 times	Not in the past year, but it did happen before	This has never happened
I insulted or swore at my partner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My partner did this to me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I called my partner fat or ugly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My partner called me fat or ugly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I shouted or yelled at my partner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My partner did this to me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I stomped out of the room, house or yard during a disagreement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My partner did this to me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I accused my partner of being a lousy lover	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My partner did this to me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I said something to spite my partner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My partner did this to me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I threatened to hit or throw something at my partner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My partner did this to me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I destroyed something belonging to my partner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My partner did this to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I threw something at my partner that could hurt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My partner did this to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I twisted my partner's arm or hair	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My partner did this to me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I pushed or shoved my partner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My partner did this to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I grabbed my partner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My partner did this to me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I slapped my partner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My partner did this to me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I used a knife or a gun on my partner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My partner did this to me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I punched or hit my partner with something that could hurt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My partner did this to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I choked my partner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My partner did this to me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I slammed my partner against a wall	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My partner did this to me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I beat up my partner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My partner did this to me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I burned or scalded my partner on purpose	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My partner did this to me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I kicked my partner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My partner did this to me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Below is a list of some things partners do while they are arguing. Please indicate how often each has happened in the past year. In the PAST YEAR, How many times during an argument:.

	Once	Twice	3 - 5 times	6 - 10 times	11-20 times	More than 20 times	Not at all
Have you used capital letters to "shout" at your partner in an email, instant message, text message, or on a social networking site?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Has your partner used capital letters to "shout" at you in an email, instant message, text message, or on a social networking site?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have you insulted your partner in an email, instant message, text message, or on a social networking site?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Has your partner insulted you in an email,, instant message, text message, or on a social networking site?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have you abruptly stopped emailing, instant messaging, or text messaging your partner during a disagreement?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Has your partner abruptly stopped emailing, instant messaging, or text messaging during a disagreement.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have you posted inappropriate pictures or embarrassing information online to humiliate your partner?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Has your partner posted inappropriate pictures or embarrassing information online to humiliate you?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have you threatened to harm your partner in an email, instant message, text message, or on a social networking site?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Has your partner threatened to harm you in an email,	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

instant message, text message, or on a social networking site?							
Have you sworn at your partner in an email, instant message, text message, or on a social networking site?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Has your partner sworn at you in an email, instant message, text message, or on a social networking site?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have you called your partner names in an email, instant message, text message, or on a social networking site?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Has your partner called you names in an email, instant message, text message, or on a social networking site?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have you kept tabs on your partner by checking their email messages, messages on their cell phone, or inbox on a social networking site?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Has your partner kept tabs on you by checking your email messages, messages on your cell phone, or inbox messages on a social networking site?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have you sent an email to others about your partner in order to hurt or embarrass your partner?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Has your partner sent an email about you to others in order to hurt or embarrass you?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The following questions concern sexual experiences. We will keep your information confidential. We hope this helps you to feel comfortable answering each question honestly. Place a check mark in the box showing the number of times each experience has happened. If several experiences occurred on the same occasion--for example, if one night you told some lies and had sex with someone who was drunk, you would check both boxes a and c. The past 12 months refers to the past year going back from today.

I fondled, kissed, or rubbed up against the private areas of my partner's body (lips, breast/chest, crotch or butt) or removed some of their clothes without their consent (but did not attempt sexual penetration) by:

	Never	1 time	2 times	3 or more times
Telling lies, threatening to end the relationship, threatening to spread rumors about them, making promises about the future I knew were untrue, or continually verbally pressuring them after they said they didn't want to.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Showing displeasure, criticizing their sexuality or attractiveness, getting angry but not using physical force after they said they didn't want to.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Taking advantage when they were too drunk or out of it to stop what was happening.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Threatening to physically harm them or someone close to them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Using force, for example holding them down with my body weight, pinning their arms, or having a weapon.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I had oral sex with my partner or had him/her perform oral sex on me without their consent by:

	Never	1 time	2 times	3 or more times
Telling lies, threatening to end the relationship, threatening to spread rumors about them, making promises about the future I knew were untrue, or continually verbally pressuring them after they said they didn't want to.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Showing displeasure, criticizing their sexuality or attractiveness, getting angry but not using physical force after they said they didn't want to.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Taking advantage when they were too drunk or out of it to stop what was happening.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Threatening to physically harm them or someone close to them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Using force, for example holding them down with my body weight, pinning their arms, or having a weapon.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I put my penis (men only) or I put my fingers or objects (all respondents) into my partner's vagina without her consent by:

	Never	1 time	2 times	3 or more times
Telling lies, threatening to end the relationship, threatening to spread rumors about them, making promises about the future I knew were untrue, or continually verbally pressuring them after they said they didn't want to.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Showing displeasure, criticizing their sexuality or attractiveness, getting angry but not using physical force after they said they didn't want to.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Taking advantage when they were too drunk or out of it to stop what was happening.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Threatening to physically harm them or someone close to them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Using force, for example holding them down with my body weight, pinning their arms, or having a weapon.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I put in my penis (men only) or I put my fingers or objects (all respondents) into my partner's butt without their consent by:

	Never	1 time	2 times	3 or more times
Telling lies, threatening to end the relationship, threatening to spread rumors about them, making promises about the future I knew were untrue, or continually verbally pressuring them after they said they didn't want to.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Showing displeasure, criticizing their sexuality or attractiveness, getting angry but not using physical force after they said they didn't want to.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Taking advantage when they were too drunk or out of it to stop what was happening.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Threatening to physically harm them or someone close to them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Using force, for example holding them down with my body weight, pinning their arms, or having a weapon.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Even though it did not happen, I TRIED to have oral sex with my partner or make them have oral sex with me without their consent by:

	Never	1 time	2 times	3 or more times
Telling lies, threatening to end the relationship, threatening to spread rumors about them, making promises about the future I knew were untrue, or continually verbally pressuring them after they said they didn't want to.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Showing displeasure, criticizing their sexuality or attractiveness, getting angry but not using physical force after they said they didn't want to.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Taking advantage when they were too drunk or out of it to stop what was happening.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Threatening to physically harm them or someone close to them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Using force, for example holding them down with my body weight, pinning their arms, or having a weapon.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Even though it did not happen, I TRIED to put in my penis (men only) or I tried to put my fingers or objects (all respondents) into my partner's vagina without their consent by:

	Never	1 time	2 times	3 or more times
Telling lies, threatening to end the relationship, threatening to spread rumors about them, making promises about the future I knew were untrue, or continually verbally pressuring them after they said they didn't want to.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Showing displeasure, criticizing their sexuality or attractiveness, getting angry but not using physical force after they said they didn't want to.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Taking advantage when they were too drunk or out of it to stop what was happening.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Threatening to physically harm them or someone close to them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Using force, for example holding them down with my body weight, pinning their arms, or having a weapon.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Even though it did not happen, I TRIED to put in my penis (men only) or I tried to put my fingers or objects (all respondents) into my partner's butt without their consent by:

	Never	1 time	2 times	3 or more times
Telling lies, threatening to end the relationship, threatening to spread rumors about them, making promises about the future I knew were untrue, or continually verbally pressuring them after they said they didn't want to.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Showing displeasure, criticizing their sexuality or attractiveness, getting angry but not using physical force after they said they didn't want to.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Taking advantage when they were too drunk or out of it to stop what was happening.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Threatening to physically harm them or someone close to them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Using force, for example holding them down with my body weight, pinning their arms, or having a weapon.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

What was the sex of the person or persons to whom you did these experiences?

- Female only
- Male only
- Both females and males
- I reported no experiences

In order to demonstrate that you have read the instructions to this questionnaire, please respond with "I have read the instructions" to all three of the questions listed below about your favorite color, favorite meal of the day, and how many times you have flown in an airplane this past year.

What is your favorite Color

What is your favorite meal of the day

How many times have you flown in an airplane in the past year?

The following questions ask about the relationship with your partner or ex-partner. Please report how often each of these things has happened in the last 12 months. Please circle a number using the scale below to indicate how often you have done each of the following things, and a number to indicate how often your partner has done each of the following things. Indicate how many times you have done this where it says “you”, and how many times your partner has done this where it says “your partner”.

How often have YOU

	Frequency in past 12 months							Not in past 12 months but has happened before	This has never happened
	Once	Twice	3-5 times	6-10 times	11-20 times	20+ times			
Asked the other person where they had been or who they were with in a suspicious manner.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Secretly searched through the other person's belongings.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Tried to stop the other person from seeing certain friends or family members.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Complained that the other person spends too much with friends.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Got angry because the other person went somewhere without telling him/her.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Tried to make the other person feel guilty for not spending enough time together.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Checked up on the other person by asking friends or relatives where they were or who they were with.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Said or implied that the other person was stupid.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Called the other person worthless.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Called the other person ugly.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Criticized the other person's appearance.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Called the other person a loser, failure, or similar term.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Belittled the other person in front of other people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Said that someone else would be a better partner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

(better spouse, better girlfriend or boyfriend).								
Became so angry that they were unable or unwilling to talk.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Acted cold or distant when angry.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Refused to have any discussion of a problem.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Changed the subject on purpose when the other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Refused to acknowledge a problem that the other person felt was important.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sulked or refused to talk about an issue.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Intentionally avoided the other person during a conflict or disagreement.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Became angry enough to frighten the other person.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Put his/her face right in front of the other person's face to make a point more forcefully.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Threatened to hit the other person.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Threatened to throw something at the other person.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Threw, smashed, hit, or kicked something in front of the other person.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Drove recklessly to frighten the other person.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stood or hovered over the other person during a conflict or disagreement.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How often has YOUR PARTNER

	Frequency in past 12 months							
	Once	Twice	3-5 Times	6-10 Times	11-20 Times	20+ Times	Not in past 12 months but has happened before	This has never happened
Asked the other person where they had been or who they were with in a suspicious manner.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Secretly searched through the other person's belongings.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tried to stop the other person from seeing certain friends or family members.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Complained that the other person spends too much with friends.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Got angry because the other person went somewhere without telling him/her.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tried to make the other person feel guilty for not spending enough time together.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Checked up on the other person by asking friends or relatives where they were or who they were with.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Said or implied that the other person was stupid.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Called the other person worthless.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Called the other person ugly.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Criticized the other person's appearance.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Called the other person a loser, failure, or similar term.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Belittled the other person in front of other people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Said that someone else would be a better partner (better spouse, better girlfriend or	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

boyfriend).								
Became so angry that they were unable or unwilling to talk.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Acted cold or distant when angry.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Refused to have any discussion of a problem.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Changed the subject on purpose when the other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Refused to acknowledge a problem that the other person felt was important.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sulked or refused to talk about an issue.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Intentionally avoided the other person during a conflict or disagreement.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Became angry enough to frighten the other person.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Put his/her face right in front of the other person's face to make a point more forcefully.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Threatened to hit the other person.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Threatened to throw something at the other person.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Threw, smashed, hit, or kicked something in front of the other person.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Drove recklessly to frighten the other person.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stood or hovered over the other person during a conflict or disagreement.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

CTQ-SF These questions ask about some of your experiences growing up as a child and a teenager. Although these questions are of a personal nature, please try to answer as honestly as you can. For each question, check the response that best describes how you feel.

When I was growing up...

	Never True	Rarely True	Sometimes True	Often True	Very Often True
I didn't have enough to eat.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I knew that there was someone to take care of me and protect me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People in my family called me things like "stupid," "lazy," or "ugly."	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My parents were too drunk or high to take care of the family.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There was someone in my family who helped me feel that I was important or special.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I had to wear dirty clothes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt loved.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I thought that my parents wished I had never been born.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I got hit so hard by someone in my family that I had to see a doctor or go to the hospital.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There was nothing I wanted to change about my family.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People in my family hit me so hard that it left me with bruises or marks.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was punished with a belt, a board, a cord, or some other hard object.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People in my family looked out for each other.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People in my family said hurtful or insulting things to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I believe that I was physically abused.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I had the perfect childhood.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I got hit or beaten so badly that it was noticed by someone like a teacher, neighbor, or doctor.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt that someone in my family hated me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People in my family felt close to each other.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Someone tried to touch me in a	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

sexual way, or tried to make me touch them.					
Someone threatened to hurt me or tell lies about me unless I did something sexual with them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I had the best family in the world.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Someone tried to make me do sexual things or watch sexual things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Someone molested me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I believe that I was emotionally abused.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There was someone to take me to the doctor if I needed it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I believe that I was sexually abused.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My family was a source of strength and support.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please think of your partner (if you are currently in a relationship) or most significant ex-partner (if you are not currently in a relationship). This person is referred to as X in this questionnaire. Please rate your response to the following questions by circling the appropriate number beside each item.

Display This Question:

If The current study focuses on intimate relationship. Are you currently in an intimate relationship? Yes Is Selected

How often do you have the following thoughts about X?

Display This Question:

If Have you been in an intimate relationship in the past 12-months? Yes Is Selected

How often DID YOU have the following thoughts about X while you were together?

	All the time 1	2	3	4	5	6	Never 7
I suspect that X is secretly seeing someone else.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am worried that someone may be chasing after X.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I suspect that X may be attracted to someone else.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think that X may be physically intimate with another person behind my back.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think that others may be romantically interested in X.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am worried that someone is trying to seduce X.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think that X is secretly developing an intimate relationship with someone else.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I suspect that X is crazy about someone else.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Display This Question:

If The current study focuses on intimate relationship. Are you currently in an intimate relationship? Yes Is Selected

How do you emotionally react to the following situations?

Display This Question:

If Have you been in an intimate relationship in the past 12-months? Yes Is Selected

How DID you react to the following situations when you were together?

	Very Pleased 1	2	3	4	5	6	Very Upset 7
X comments to you on how great looking a particular person is.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
X shows a great deal of interest or excitement in talking to someone else.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
X smiles in a very friendly manner to someone else.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Another person is trying to get close to X all the time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
X is flirting with someone else.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Someone else is dating X.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
X hugs and kisses someone else.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
X works very closely with another person (school or office).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Display This Question:

If The current study focuses on intimate relationship. Are you currently in an intimate relationship? Yes Is Selected

How often do you engage in the following behaviors?

Display This Question:

If Have you been in an intimate relationship in the past 12-months? Yes Is Selected

How often DID YOU engage in the following behaviors during the past year?

	Never 1	2	3	4	5	6	All the Time 7
Look through X's drawers, handbags, or pockets.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Call X unexpectedly, just to see if he or she is there.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Question X about previous or present romantic relationships.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Say something nasty about someone if X shows an interest in that person.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Question X about his or her telephone calls.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Question X about his or her whereabouts.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Join in whenever I see X talking to someone else.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pay X surprise visit just to see who is with him or her.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The following is a list of statements about how you and your partner communicate. For each item, please indicate how often the statement seems true in your relationship. If you are reporting on a past relationship, please think back to how you usually communicated in that relationship.

	Almost Never 1	1	2	3	Occasion ally 4	5	6	Almost Always 7
I interrupt my partner when we are arguing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When discussing issues, I allow my partner to finish talking before I respond.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When discussing issues, I summarize what my partner says in order to make sure I understand him/her.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When our discussions begin to get out of hand, we agree to stop them and talk later.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When discussing a problem, we try to focus on that problem rather than drifting into other problem areas.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When discussions threaten to boil over, we stop them and take a time out.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When we discuss relationship issues, I show my partner I am listening by repeating back what I heard.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When discussing an issue, my partner and I both take responsibility to keep us on track.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Even though he/she may feel differently, my partner is able to see things from my point of view.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

My partner tries to understand my feelings and concerns.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Please think about how you typically are in romantic relationships and respond to the following statements.

	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7
I'm afraid that I will lose my partner's love.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I often worry that my partner will not want to stay with me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I often worry that my partner doesn't really love me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I worry that romantic partners won't care about me as much as I care about them	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I often wish that my partner's feelings for me were as strong as my feelings for him/her	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I worry a lot about my relationships	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When my partner is out of sight, I worry that he or she might become interested in someone else.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I show my feelings for romantic partners, I'm afraid they will not feel the same about me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I rarely worry about my partner leaving me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My romantic partner makes me doubt myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not often worry about being abandoned	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I find that my partner(s) don't want to get as close as I would like.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sometimes romantic partners change their feelings about me for no apparent reason.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My desire to be very close sometimes scares people away.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'm afraid that once a romantic partner gets to know me, he or she won't like who I really am.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It makes me mad that I don't get the affection and support I need from my partner.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I worry that I won't measure up to other people	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My partner only seems to notice me when I'm angry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7
I prefer not to show a partner how I feel deep down.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel comfortable sharing my private thoughts and feelings with my partner.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I find it difficult to allow myself to depend on romantic partners.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am very comfortable being close to romantic partners.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I don't feel comfortable opening up to romantic partners.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I prefer not to be too close to romantic partners	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I get uncomfortable when a romantic partner wants to be very close	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I find it relatively easy to get close to my partner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It's not difficult for me to get close to my partner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I usually discuss my problems and concerns with my partner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It helps to turn to my romantic partner in times of need	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I tell my partner just about everything	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I talk things over with my partner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am nervous when partners get too close to me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel comfortable depending on romantic partners	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I find it easy to depend on romantic partners	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It's easy for me to be affectionate with my partner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My partner really understands me and my needs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please mark the answer for each item which best answers that item for you. Please think about your current relationship. If you are not currently in a relationship, please answer the questions with regard to how you felt MOST OF THE time during your most significant relationship in the past year.

How well does your partner meet your needs?

- Poorly
- Less than Average
- Average
- Well
- Extremely Well
-

In general, how satisfied are you with your relationship?

- Unsatisfied
- Somewhat Satisfied
- Average
- Satisfied
- Extremely Satisfied

How good is your relationship compared to most?

- Poor
- Somewhat Poor
- Average
- Satisfied
- Extremely Satisfied

How often do you wish you hadn't gotten in this relationship?

- Never
- Almost Never
- Average
- Often
- Very Often

To what extent has your relationship met your original expectations?

- Hardly at all
- Somewhat
- Average
- A Great Deal
- Completely

How much do you love your partner?

- Not Much
- Somewhat
- Average
- A Great Deal
- Very Much

How many problems are there in your relationship?

- Very Few
- A Few
- Average
- Many
- Very Many

OPTIONAL QUESTION. What else would you like us to know about your experience with technology in your relationships? What did we leave out? What is important for us to know? This question is optional. Your survey will still be considered complete if you choose not to respond.

Appendix C: Debriefing Form

Thank you for your participation in the Technology in Relationships Study. Your responses will help us answer important questions about how technology is used among intimate partners.

Your validation code is:

[\\${e://Field/mTurkCode}](#)

To receive payment for participating, click "Accept HIT" in the Mechanical Turk window, enter this validation code, then click "Submit".

If this study reveals personal concerns that you have about yourself with which you would like some help, listed below are mental health hotlines that may be of service to you.

If you are in immediate danger, please call 911 now.

National Domestic Violence Hotline
1-800-799-7233 or TTY 1-800-787-3224
<http://www.thehotline.org/>

24 hours a day, 7 days a week, trained advocates will talk confidentially with anyone experiencing domestic violence, seeking resources or information, or questioning unhealthy aspects of their relationship. The National Domestic Violence Hotline also have a safe, private, and secure online chat with a hospital advocate at:
<http://www.thehotline.org/what-is-live-chat/>.

National Sexual Assault Hotline
800-656-HOPE

There is also an ONLINE hotline at <https://ohl.rainn.org/online>
The National Sexual Assault Hotline provides confidential, free one-on-one, crisis support 24/7. You can chat online with a trained staff member who will provide you with information and referrals through a secure instant messaging format, or simply offer a safe place to talk about what happened.

National Suicide Prevention Hotline
1-800-273-TALK (8255)

Trained counselors available 24/7 to provide crisis counseling for mental health crises, including suicide, abuse, depression, substance abuse, and other mental health issues. You will be connected to a skilled, trained crisis worker who will listen to your problems and will tell you about mental health services in your area. Your call is free and confidential.

How to find mental health help in your area:

SAMHSA's National Helpline

1-800-662-HELP(4357)

<http://www.samhsa.gov/find-help/national-helping>

Confidential, free, 24-hour-a-day, 365 days a year information service for individuals and family members facing mental health or substance abuse concerns. This service provides referrals to local treatment facilities, support groups, and community-based organizations. Callers can also order free publications and other information.

SAMHSA also maintains an online database of mental health treatment service facilities. You can search for a place to receive mental health help here:

<https://findtreatment.samhsa.gov/>

Appendix D: Factor Analysis for CPA Scales

Figure D1. Scree plot for the exploratory factor analysis with CPA perpetration items.

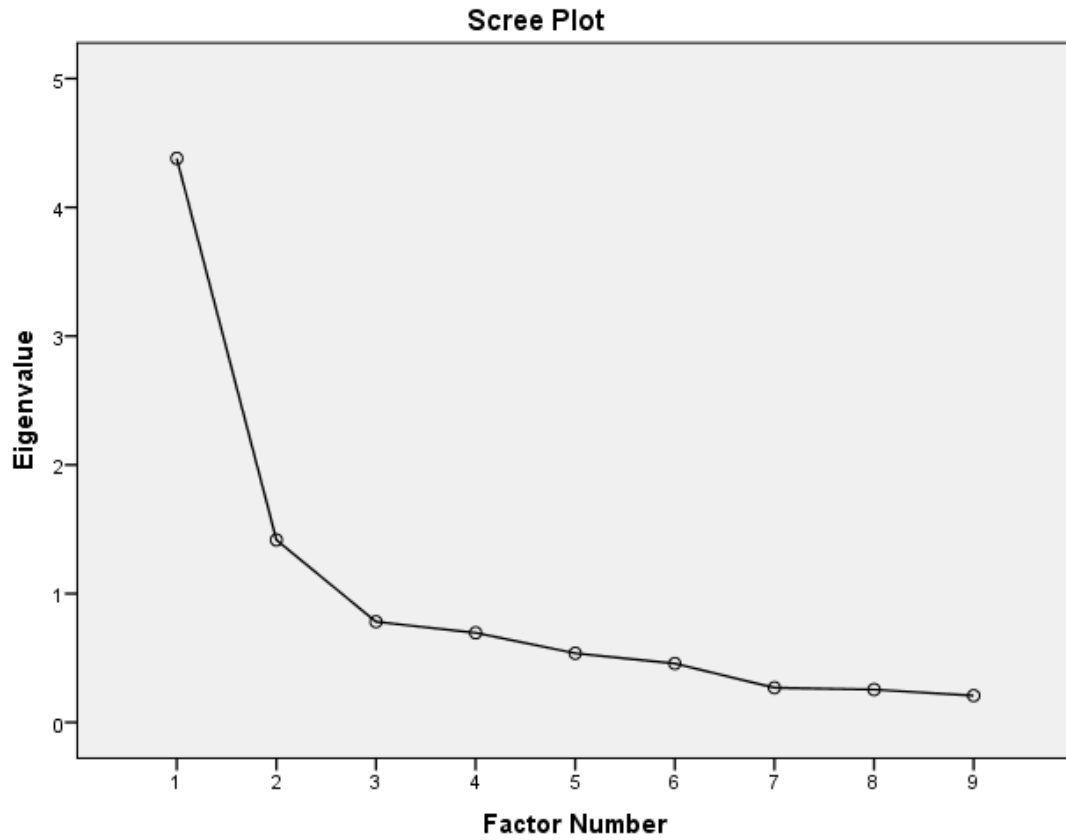


Figure D2. Scree plot for the exploratory factor analysis with CPA victimization items.

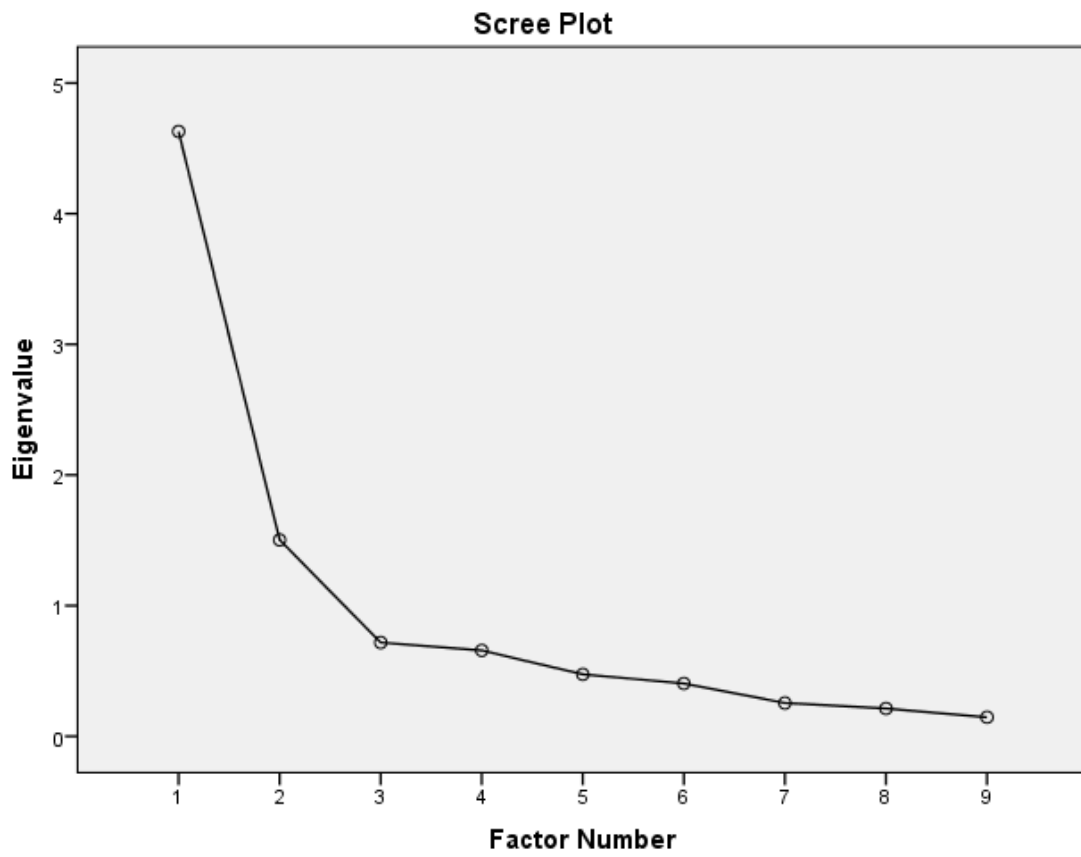


Table D1.

Pattern Matrix for Exploratory Factor Analysis of CPA Perpetration and Victimization Scales.

	Perpetration		Victimization	
	Factor 1 Minor	Factor 2 Severe	Factor 1 Minor	Factor 2 Severe
Have you used capital letters to “shout” at your partner...	.73	.03	.74	.11
Have you insulted your partner...	.77	-.07	.69	-.17
Have you abruptly stopped emailing, instant messaging, or text messaging partner during a disagreement	.62	.08	.60	.03
Have you sworn at your partner...	.73	.01	.92	.07
Have you called your partner names...	.75	-.04	.75	-.15
Have you kept tabs on your partner by checking their email messages, messages on their cell phone, or inbox on a social networking site	.40	-.14	.47	-.13
Have you posted inappropriate pictures or embarrassing information online to humiliate your partner.	.11	-.73	.07	-.81
Have you threatened to harm your partner...	-.06	-.93	-.03	-.93
Have you sent an email to others about your partner in order to hurt or embarrass your partner.	.00	-.87	.01	-.92

Note. N = 243 for perpetration and N = 242 for victimization. Items with an ellipsis (...) have the phrase “in an email, instant message, text message, or on a social networking site” at the end. Items shown are for perpetration. Items for victimization contain the same content, except “your partner” is changed to “you” and “you” is changed to “your partner”. Principal Axis Factoring was used along with direct oblimin rotation and factors constrained to 2. Factor loadings displayed are from the rotated pattern matrix.

Appendix E: Qualitative Comments by Study Participants

Table E1.

Qualitative Comments by Study Participants.

Age	Sex	Comment
59	F	Good time spend
24	F	It's not necessarily left out, but I think including questions about password exchanges and screen locking. There may be interesting responses.
26	F	I think this survey is stupid and pointless
39	F	In general, my partner and I discuss our problems rather than through social media or texting.
37	F	Thorough study. Thank you
25	F	I think not obsessively stalking their social media is important. I don't even follow my girlfriend's feed so I only see things she links to me or deliberately shows me. I don't want to overthink every post she makes or comment she makes, because I've don that in the past (granted I was much younger) but I don't want to be that person. We are together, but we aren't completely immersed in everything the other person does.
59	F	This is way too long for the pay!
26	F	In the past, social networks use to be bad for my relationship. We use to vent a lot about our relationship problems on Facebook. We learned how to keep our relationship problems to ourselves and now we are closer than ever because we actually sit down an talk about things.
33	F	Technology makes relationships seem closer because in times people are apart, they can still keep in touch.
59	F	I met my ex husband on the internet in 2000, threw him out when I found multiple want-ads on porn sites looking for someone in our zip code. I met my present fiancé in Dec. 2013 a year later at a cheesy dating site, and he is an ordained deacon so he's wy more honest. The internet has sent me two husbands. Also, facebook is how I know what my extended family members are doing and what they look like. I love the internet.
64	M	We have a long distance relationship, only seeing each other a few days each month.

- 31 M When you and your significant other are friends on social networks, your social networks tend to combine to some degree. In our case, she with mine.
- 69 M I do believe that we have periods of time where each of us is involved with our electronic devices and converse less than we would have in past years. We don't identify it as a problem, but we do enjoy driving to various locations because being in the car together allows a lot of conversation. We don't have any other distractions there. Of course, some of the things we talk about are things we saw on the internet.
- 55 F Does your partner use too much technology when they are with you
- 27 F Technology can certainly ruin relationships.
- 53 F My partner does not like or use much technology. I use it but keep my personal matters private.
- 44 F Mostly I just text my husband to keep in touch with him at work - about once per day. I do not do it to check up on him! Not at all. We text to say Hi and I love you and go over some practical thing - find out what time he might be home or ask him to pick something up for me.
- 35 M I think you did quite well enough in asking the same questions in about 500 different ways.
- 57 M Since we live together, we do not have to rely on technology to keep in touch. Most of our contact via technology involves information sharing, like sharing a link to an interesting news link or an entertaining video, etc.
- 28 F I'm not sure what the survey is aiming to capture but facetime and email are important in our long distance relationship.
- 23 M We can get frustrated with each other's apparent obsession for technology, but it's not significant.
- 60 F My partner is not as good at technology as I am, so I am the one to solve problems and protect our online presence.
- 33 M You have "if one night you told some lies and had sex with someone who was drunk, you would check both boxes a and c" in your instructions, but only item a can be selected for each question. It didn't affect me personally, but I'm sure it will affect some people.
- 47 M Nothing really. I think it makes it simple for busy people to meet and network.
- 28 F I am apathetic to this questionnaire
- 26 M Good luck with your research!
- 28 F Just looking over these answers I feel like you all should know we're in couples' therapy...

- 35 M (*Name*) doesn't use a lot of social media. She doesn't use it as often as I do. We both work full time and she has a 7 year old boy so we are both busy. She makes more money than I do but she likes me, I am attractive and treat her well and satisfy her physically and emotionally. (*Name*) really likes me also. He's a cool kid. It's a good relationship, I don't have kids.
- 42 M Texted my partner during the survey, thanking them for being normal.
- 49 M I find that I don't like technology as much in our relationship because I find that my partner spends a lot of time on her social media accounts - and I wish that she was spending that time with me. She is pursuing her interests and her hobbies - but I find that she seems to be most comfortable in that social media "zone". Thanks for the opportunity to participate and good luck with your research!
- 35 M We communicate a lot during the day while we are at work, so very thankful for social media. Great study!
- 22 M I wish technology never existed at times because my wife keeps up with me a lot and it's annoying
- 19 F I was in a long distance relationship with someone I met on the internet for 2 years. She was from England, and she visited me once in the summer.
- 46 M having the ability to be connected most of the time through more unobtrusive means (such as IM, chat, etc.) is a boon to helping to touch base throughout the day.
- 38 M married people sometimes have internet boy/girlfriends or even spouses, separate from their actual relationships. look in to second life
- 19 M Skyping one another has been very beneficial when we are unable to see each other for a prolonged period of time.
- 20 M It's important to know that I'm only with my partner for the affection. We constantly fight, but having a warm body to sleep next to almost makes it worth it. Technology has only made things worse - constant passive aggressive comments and the like.
- 52 F We try to limit the time we are on our phones and tablets, etc. We found that we'll be in the living room for hours and not speaking at all to each other, worlds away. So when we want to spend time together, we say 'technology down!' It's nice-sometimes you just have to unplug.
- 29 M Use it [technology] a lot to stay connected. nothing. happy.
- 66 F That I am older so technology hasn't always been part of my relationships, but I find being able to text messages or to send an email keeps us closer.
- 55 F We are grateful that we are older and realize the folly of youth. Super glad we did not have the ability to post every stupid thing that we did. We have been

successful at raising two sons without them putting damaging dialog or photos on the net. We bot believe in standing united on decisions we make or talk about them until we can come to some sort of agreement. We do not put everything out there for the world to see. If I would not say it to their face I will not write it. Nor phone it. Survey ran smothly, thank you for the opportunity.

- 27 F You should probably consider asking if people log into their partner's social networking accounts or check their emails or texts.
- 46 M no additional comments; we probably use (online) technology less than the average couple.
- 31 M My wife and I don't use technology too much in our relationship outside of sending texts and speaking on the fun; if we have to have any really important conversations or discussions, we do this in-person, together.
- 54 F This isn't necessarily about technology. Just wanted you to know that the problems I referred to in answering your questions do not refer to any unfaithfulness in our relationship. It refers exclusively to his drug addiction. Take that into consideration hen reading responses. It makes a huge difference, I think, in what you're looking for.
- 26 F My current partner and I met on an online game and talked online for about four months before meeting each other in real life and starting our relationship. I find it easier to communicate through typing, so when we need to have a talk, we'll both get onan instant messenger so I can write out long paragraphs otherwise I tend to lose my train of thought. I find it easier to express my feelings through my writing than through speaking.
- 48 F Basically we only use technology to talk to each other when we're apart (text messaging) and to feel close when we're together (movies on television).
- 38 F My partner used to get very jealous of my use of technology. Not because he thought I was engaging with anyone else. Just because I wasnt engaging with him. We don't have many outside friends except each other, so SNS itself became the "other".
- 21 F I'm in an open long distance relationship.

Note. Responses indicating the participant did not have a comment or saying thank you (e.g., "no", "N/A", "nothing to add", "thanks") are excluded from the table.

Appendix F: Supplementary Tables.

Table F1.

Hierarchical Regression Predicting Cyber Psychological Abuse Perpetration Separately by Sex

Model	Males n = 112		Females n = 127	
	Total R ²	R ² change	Total R ²	R ² change
Model 1	.15**	.15**	.04	.04
Demographics (<i>age, race, relationship status</i>)				
Model 2	.35***	.21***	.11	.07
Demographics Child Maltreatment (<i>CTQ Emotional Abuse, Physical Abuse, Emotional Neglect, Physical Neglect, Sexual Abuse</i>)				
Model 3	.44***	.08**	.13	.03
Demographics Child Maltreatment Psychological Variables (<i>Problematic Alcohol Use, Problematic Drug Use, Difficulties in Emotion Regulation</i>)				
Model 4	.65***	.21***	.28**	.14**
Demographics Child Maltreatment Psychological Variables Relationship Variables (<i>Behavioral Jealousy, Cognitive Jealousy, Attachment Anxiety, Attachment Avoidance, Communication Skills, Relationship Satisfaction</i>).				
Model 5	.74***	.09***	.38***	.10***
Demographics+ Child Maltreatment+ Psychological Variables+ Relationship Variables+ Traditional Abuse (<i>Physical Assault-P, Emotional Abuse -P</i>)				
Model 6	.76***	.02*	.42***	.04*
Demographics Child Maltreatment Psychological Variables Relationship Variables Traditional Abuse+ Technology Variables (<i>daily cell phone use, daily social networking site use</i>)				

Table F2.

Multiple Regression Analysis Predicting Total Cyber Psychological Abuse Perpetration by Sex

Variable	Males (n = 112)			Females (n = 127)		
	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β
Demographics						
Age	.00	<.01	-.03	.00	<.01	-.08
Race	.07	.10	.05	-.03	.10	-.03
Dating	-.08	.21	-.06	.29	.33	.24
Cohabiting	.00	.20	.00	.26	.33	.22
Married	-.09	.21	-.07	.21	.33	.18
Child Maltreatment						
CTQ Physical Abuse	.04*	.02	.18*	.01	.02	.04
CTQ Physical Neglect	-.02	.02	-.14	-.01	.02	-.08
CTQ Sexual Abuse	-.38	.34	-.08	.34	.28	.11
CTQ Emotional Abuse	.01	.02	.04	.00	.01	.00
CTQ Emotional Neglect	.01	.01	.04	.00	.01	-.02
Psychological Variables						
Problematic Alcohol Use	.01	.01	.05	.01	.01	.05
Problematic Drug Use	-.18	.14	-.09	-.32	.24	-.15
Difficulties in Emotion Regulation	.01*	<.01	.17*	.00	<.01	.09
Relationship Variables						
Behavioral Jealousy	1.15***	.31	.34***	.69*	.30	.25*
Cognitive Jealousy	-.01	.01	-.12	.00	.01	-.01
Attachment Anxiety	.00	<.01	.07	.00	<.01	-.06
Attachment Avoidance	.00	<.01	-.12	.00	<.01	-.01
Communication Skills	.00	<.01	.01	.00	<.01	.02
Relationship Satisfaction	-.01	.01	-.08	-.01	.01	-.11
Traditional Abuse						
Physical Assault- P	.11	.11	.08	.10	.14	.07
Emotional Abuse -P	.36***	.07	.42***	.28**	.09	.32**
Technology Variables						
Daily Cell Phone Use	.25**	.09	.19**	.17	.10	.16
Daily SNS Use	-.04	.03	-.01	.05	.03	.14
Model R²		.76***		.42***		

Note. Not together/divorced serving as the reference group for relationship status. CPA Victimization, CTQ Sexual Abuse, Problematic Drug Use (DAST), Behavioral Jealousy (MJS-B), Emotional Abuse Perpetration (MMEA), Physical Assault (CTS) and cell phone use were log transformed prior to analysis.

Table F3.

Hierarchical Regression Predicting Cyber Psychological Abuse Victimization Separately by Sex

Model	Males n = 112		Females n = 127	
	Total R ²	R ² change	Total R ²	R ² change
Model 1	.19***	.19***	.05	.05
Demographics (<i>age, race, relationship status</i>)				
Model 2	.41***	.22***	.12	.06*
Demographics Child Maltreatment (<i>CTQ Sexual Abuse, Physical Neglect, Physical Abuse</i>)				
Model 3	.43***	.02	.15	.03
Demographics Child Maltreatment Psychological Variables (<i>Problematic Alcohol Use, Problematic Drug Use, Difficulties in Emotion Regulation</i>)				
Model 4	.55***	.13**	.27**	.12*
Demographics Child Maltreatment Psychological Variables Relationship Variables (<i>Behavioral Jealousy, Cognitive Jealousy, Attachment Anxiety, Attachment Avoidance, Communication Skills, Relationship Satisfaction</i>).				
Model 5	.72***	.17**	.39***	.13***
Demographics Child Maltreatment Psychological Variables Relationship Variables Traditional Abuse (<i>Physical Assault-V, Emotional Abuse -V</i>)				
Model 6	.73***	.01	.43***	.04*
Demographics Child Maltreatment Psychological Variables Relationship Variables Traditional Abuse Technology Variables (<i>daily cell phone use, daily social networking site use</i>)				

Table F4.

Multiple Regression Analysis Predicting Total Cyber Psychological Abuse Victimization by Sex

Variable	Males (n = 112)			Females (n = 127)		
	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β
Demographics						
Age	.00	<.01	.02	.00	<.01	-.02
Race	.18	.11	.11	-.09	.11	-.07
Dating	-.53*	.22	-.39*	.18	.34	.14
Cohabiting	-.32	.22	-.22	.04	.34	.03
Married	-.51*	.23	-.37*	-.10	.34	-.08
Child Maltreatment						
CTQ Physical Abuse	.04*	.02	.19*	.01	.01	.06
CTQ Physical Neglect	-.02	.01	-.09	.00	.01	-.01
CTQ Sexual Abuse	.06	.37	.01	.35	.29	.11
Psychological Variables						
Problematic Alcohol Use	.00	.01	.00	.00	.01	-.01
Problematic Drug Use	-.08	.16	-.04	-.12	.25	-.05
Difficulties in Emotion Regulation	.00	<.01	.11	.00	<.01	.08
Relationship Variables						
Behavioral Jealousy	.22	.33	.06	.44	.29	.15
Cognitive Jealousy	.00	.01	-.05	.00	.01	-.08
Attachment Anxiety	.00	<.01	.08	.00	<.01	-.04
Attachment Avoidance	-.01*	<.01	-.18*	.00	<.01	-.02
Communication Skills	.00	<.01	.00	-.01	<.01	-.12
Relationship Satisfaction	-.01	.01	-.08	.00	.01	-.03
Traditional Abuse						
Physical Assault - V	.17	.10	.13	-.03	.13	-.02
Emotional Abuse -V	.43***	.06	.53***	.34***	.08	.43***
Technology Variables						
Daily Cell Phone Use	.18	.10	.13	.22*	.10	.19*
Daily SNS Use	.01	.03	.03	.04	.03	.10
Model R²	.73***			.43***		

Note. Not together/divorced serving as the reference group for relationship status. CPA Victimization, CTQ Sexual Abuse, Problematic Drug Use (DAST), Behavioral Jealousy (MIS-B), Emotional Abuse Victimization (MMEA), Physical Assault Victimization (CTS) and daily cell phone use were log transformed prior to analysis.

Table F5.

Pearson Correlations of Age with Technology Variables

Variables	Age (In Years)
1. Daily Cellular Telephone Use (# Texts/Calls)	-.31***
2. Daily Internet Use (not including Social Networking)	.05
3. Daily Social Networking Use	-.12
4. Number of “Friends” on Most Used Social Media Site	-.20**
5. Technology Proficiency	.15*
6. Social Media Integration (SMUIS)	.05

Note. N=243.

Table F6.

Sex Differences In Cyber Psychological Abuse Perpetration by Item (n = 242).

Item	Mean Incidents (SD) (Male)	Mean Incidents (SD) (Female)	Test Result	p	Effect Size
<i>Item 1a.</i> Have you used capital letters to “shout” at your partner in an email, instant message, text message, or social networking site?	2.08 (4.93)	2.26(4.53)	$t(240) = 1.33$	.186	D = 0.17
<i>Item 2a.</i> Have you insulted your partner in an email, instant message, text message, or on a social networking site?	1.27(3.85)	1.61(4.39)	$t(240) = 0.92$	.358	D = 0.12
<i>Item 3a.</i> Have you abruptly stopped emailing, instant messaging, or text messaging during a disagreement?	2.28(3.74)	2.87(4.08)	$t(240) = 1.51$	.133	D = 0.19
<i>Item 6a.</i> Have you sworn at your partner in an email, instant message, text message, or on a social networking site?	2.66(6.13)	2.02(4.58)	$t(240) = -0.16$	.870	D = -0.02
<i>Item 7a.</i> Have you called your partner names in an email, instant message, text message, or on a social networking site?	1.25(3.74)	1.27(4.14)	$t(240) = -0.15$	.884	D = -0.02
<i>Item 8a.</i> Have you kept tabs on your partner by checking their email messages, messages on their cell phone, or inbox on a social networking site?	1.72(4.06)	3.12(6.50)	$t(240) = 1.78$	.076	D = 0.23

<i>Item 4a.</i> Have you posted inappropriate pictures or embarrassing information online to humiliate your partner?	0.39(1.65)	0.43(2.67)	$t(240) = -0.80$	.424	D = -0.10
<i>Item 5a.</i> Have you threatened to harm your partner in an email, instant message, text message, or on a social networking site?	0.53(2.29)	0.16(0.88)	$t(240) = -1.58$	.112	D = -0.20
<i>Item 9a.</i> Have you sent an email to others about your partner in order to hurt or embarrass your partner?	0.47(1.95)	0.53(3.19)	$t(240) = -0.67$	.504	D = -0.09

Note. T-tests use log-transformed CPA items and means reflect differences in raw CPA scores for ease of interpretability.

Table F7.

Sex Differences in Cyber Psychological Abuse Victimization by Item (n = 242).

Item	Mean Incidents (SD) (Male)	Mean Incidents (SD) (Female)	Test Result	p	Effect Size
<i>Item 1b.</i> Has your partner used capital letters to “shout” at you in an email, instant message, text message, or on a social networking site?	2.82(6.18)	1.87(4.25))	$t(240) = -0.64$	.522	D = -0.08
<i>Item 2b.</i> Has your partner insulted you in an email, instant message, text message, or on a social networking site?	1.26(3.18)	1.67(4.61)	$t(240) = 0.41$	.679	D = 0.05
<i>Item 3b.</i> Has your partner abruptly stopped emailing, instant messaging, or text messaging during a disagreement?	2.64(5.11)	2.57(3.85)	$t(240) = 0.55$	.579	D = 0.07
<i>Item 6b.</i> Has your partner sworn at you in an email, instant message, text message, or on a social networking site?	3.06(6.98)	1.91(4.23)	$t(240) = -0.49$	.628	D = -0.06
<i>Item 7b.</i> Has your partner called you names in an email, instant message, text message, or on a social networking site?	1.46(4.14)	1.32(4.28)	$t(240) = -0.46$	.650	D = -0.06
<i>Item 8b.</i> Has your partner kept tabs on you by checking your email	2.11(5.17)	2.43(6.15)	$t(240) = -0.11$	.915	D = -0.01

messages, messages on your cell phone, or inbox on a social networking site?

Item 4b. Has your partner posted inappropriate pictures or embarrassing information online to humiliate you? 0.47(1.89) 0.22(1.43) $t(240) = -1.45$.149 D = -0.19

Item 5b. Has your partner threatened to harm you in an email, instant message, text message, or on a social networking site? 0.60(2.89) 0.36(2.37) $t(240) = -1.03$.304 D = -0.13

Item 9b. Has your partner sent an email to others about you in order to hurt or embarrass you? 0.38(1.72) 0.40(2.59) $t(240) = -0.65$.514 D = -0.08

Note. T-tests use log-transformed CPA items and means reflect differences in raw CPA scores for ease of interpretability.

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