



Published in final edited form as:

Psychol Violence. 2019 July ; 9(4): 410–418. doi:10.1037/vio0000130.

Cyber Abuse among Men Arrested for Domestic Violence: Cyber Monitoring Moderates the Relationship between Alcohol Problems and Intimate Partner Violence

Meagan J. Brem¹, Autumn Rae Florimbio¹, Hannah Grigorian¹, Caitlin Wolford-Clevenger¹, JoAnna Elmquist¹, Ryan C. Shorey², Emily F. Rothman³, Jeff R. Temple⁴, Gregory L. Stuart¹

¹University of Tennessee-Knoxville

²Ohio University

³Boston University School of Public Health

⁴University of Texas Medical Branch Health

Abstract

Objective—We provide the first investigation of the prevalence and frequency of cyber abuse among men arrested for domestic violence (DV). We also offer the first conceptualization of cyber monitoring, a facet of cyber abuse, within the I³ theory of IPV. That is, the risk of IPV perpetration may be higher for men with alcohol problems who also frequently access emotionally-salient instigatory cues, namely, information gleaned from cyber monitoring. Thus, we hypothesized that alcohol problems would positively relate to IPV perpetration among men who engaged in high, but not low, levels of cyber monitoring.

Methods—Using a cross-sectional sample of 216 men arrested for DV and court-referred to batterer intervention programs (BIPs), we explored the prevalence and frequency of cyber abuse perpetration and victimization. Hierarchical multiple regression analyses tested the interaction between cyber monitoring and alcohol problems predicting IPV perpetration (psychological aggression and physical assault).

Results—Eighty-one percent of men endorsed perpetrating at least one act of cyber abuse in the year prior to entering BIPs. Alcohol problems and both psychological and physical IPV perpetration positively related at high, but not low, levels of cyber monitoring.

Conclusion—Clinicians should assess for cyber abuse and alcohol use among DV offenders. Amendments to legal statutes for DV offenders should consider incorporating common uses of technology into legal definitions of stalking and harassment. Social media campaigns and BIPs should increase individuals' awareness of the criminal charges that may result from some forms of cyber abuse and monitoring.

Keywords

cyber abuse; cyber monitoring; alcohol; intimate partner violence; domestic violence

Intimate partner violence (IPV), defined here as partner-directed psychological aggression and physical assault, is a serious public health problem. Data from the 2011 National Intimate Partner and Sexual Violence Survey (NISVS) revealed that more than 10 million women are victimized by physical assault by an intimate partner every year (Breiding et al., 2014). Higher rates of severe IPV perpetration are typically found among samples of individuals arrested for domestic violence (DV), which suggests that it is imperative to examine the characteristics of this population (Hamby, 2014). However, research in this domain has largely neglected advancements in social communication technologies (e.g., smartphones and social media) which may have implications for the ways in which IPV manifests. Burgeoning research suggests that cyber abuse (i.e., threatening, controlling, and/or harassing a partner via technological mediums; Zweig, Dank, Yahner, & Lachman, 2013), which includes cyber monitoring (i.e., monitoring a partner's activities via technology; Burke, Wallen, Vail-Smith, & Knox, 2011) predicts face-to-face IPV perpetration among adolescents (Temple et al., 2016) and college students (Brem et al., 2015). However, these constructs have not been examined among samples of men arrested for DV. Thus, the purpose of the present study is to use a theory-guided approach to examine cyber abuse and monitoring as they relate to alcohol use and IPV perpetration among a sample of men arrested for DV and court-referred to batterer intervention programs (BIPs).

Alcohol and IPV

Research consistently demonstrates that alcohol problems increase the likelihood of IPV perpetration among various populations, including men arrested for DV (Foran & O'Leary, 2008; Stuart et al., 2006). One prominent theory from which researchers draw to account for the robust association between alcohol problems and IPV is the alcohol myopia theory (AMT; Rothman, Reyes, Johnson, & LaValley, 2012; Steele & Josephs, 1990). According to one model of the AMT known as the attention-allocation model (AAM; Steele & Josephs, 1990), alcohol restricts an individual's focus to the most emotionally-salient cues in a given situation. If negative affect is the most immediate and salient stimulus, attentional resources would be directed toward this psychological state, leaving minimal attention to be directed toward aggression-inhibiting stimuli, such as alternative thoughts and positive affect (Chermack & Giancola, 1997; Steele & Josephs, 1990). When intoxicated, these emotionally-charged cues (e.g., suspicion of a partner's infidelity) are more likely to be perceived and processed at the exclusion of inhibitory cues, thereby increasing the likelihood of aggressing against a partner (Finkel & Eckhardt, 2013; Steele & Josephs, 1990).

Finkel and Eckhardt (2013) extended AMT to their I³ theory of IPV. According to the I³ theory, alcohol functions as a disinhibiting influence in that it alters executive functioning to interfere with self-regulation. When an individual consumes alcohol, she or he is at an increased risk of aggressively responding to provocative cues in a given situation due, in part, to poor inhibition (Giancola, Duke, & Ritz, 2011). Yet, instigatory cues do not need to

be provocative in nature to elicit aggression (Ogle & Miller, 2004). Ogle and Miller (2004) demonstrated that alcohol consumption increases hostile cognitive biases such that even a neutral or ambiguous instigatory cue (e.g., a vignette depicting non-hostile interactions between two individuals) is more likely to be interpreted as hostile. Taken together, the AMT and I³ theory posit that IPV is especially likely to occur when (1) an individual consumes alcohol, and (2) when alcohol use is paired with an instigatory cue that elicits negative affect. While providing important frameworks from which to conceptualize IPV, these bodies of research have yet to consider social changes which have resulted in almost constant access to instigatory cues, namely, the growth of technology and social networking site (SNS) use.

Cyber Abuse, Cyber Monitoring, and IPV

Recent decades witnessed a surge in technology and social media use among adults (Perrin, 2015; Smith, 2015). Data from the Pew Research Center indicated that 64% of adults use smartphones daily, with even more (90%) using SNSs (Perrin, 2015; Smith, 2015). Although technology and SNSs offer the potential to increase relationship satisfaction (Tokunaga, 2011), they also provide mechanisms for engaging in problematic behaviors in romantic relationships (Muise, Christofides, & Desmarais, 2009), including cyber abuse and cyber monitoring. Technology, such as SNSs, affords individuals unique opportunities to humiliate or harass a partner in an online community typically occupied by the victim's friends and family (Dunlap, 2012). If one is "friends" with, or linked to, a partner's SNS, browsing affords one the potential opportunity to anonymously monitor a partner's location, romantic relationship history, as well as current, prior, and upcoming social interactions. Partner information is not only readily available through frequent self-disclosures on SNS (Choi & Bazarova, 2014), but the monitoring methods used to obtain such information are considered socially acceptable (Lampe, Ellison, & Steinfield, 2006). Researchers suggest that this is partially because SNSs encourage users to engage in social monitoring (Lampe et al., 2006; Tokunaga, 2011). Unlike cyber stalking, which more often occurs with former romantic partners and may be perpetrated to terrorize or regain a relationship with the victim (Spitzberg & Cupach, 2001; Spitzberg & Hoobler, 2002), some aspects of cyber monitoring may be mutually agreeable to current romantic partners, and may even be considered as ways of enhancing the relationship (Norton & Baptist, 2014). Furthermore, through smartphone technology, a partner's location, text messages, call history, emails, and website browsing history are all easily accessible (Smith, 2015). Because an overwhelming majority of adults have daily access to a smartphone (Smith, 2015), partners may have virtually constant access to one another's activities and location.

Given the accessibility of a partner and partner information through technology and SNS, it is not surprising that over 65% of adults use technology or SNS to monitor a partner despite the risk of facing criminal charges for certain behaviors (e.g., hacking into a partner's email; Electronic Communications Privacy Act Amendments Act of 2015; Burke et al., 2011). Furthermore, 93% of young adults use technology to abuse a dating partner (Leisring & Guimetti, 2014). This high prevalence may be due, in part, to the virtually constant access partners have to one another, and the anonymous access partners have to cues to real or imagined threats to one's established romantic relationship made available via cyber

monitoring (e.g., the presence of extra-dyadic partners, signs of infidelity, and subtle signs of relationship dissatisfaction; Bowe, 2010; Buss, 2002; Elphinston & Noller, 2011). Yet, such cues may facilitate conflictual partner interactions depending on how an individual interprets information obtained via cyber monitoring (Bowe, 2010; Cohen, Bowman, & Borchert, 2014).

Research consistently demonstrated a positive association between monitoring behaviors via technology and negative emotions within romantic relationships, including jealousy (Bowe, 2010; Elphinston & Noller, 2011; Muise et al., 2009; Utz, Muscanell, & Khalid, 2015). Experimental data suggests that information received through cyber monitoring can induce negative affect; when revealing partner information and negative affect were both experienced, individuals were more likely to imagine being confrontational towards a partner (Cohen et al., 2014). It follows, then, that cyber monitoring could serve as an instigatory cue in Finkel & Eckhardt's (2013) I³ theory. That is, alcohol use may be more likely to lead to conflictual partner interactions (e.g., IPV) when an individual engages in high levels of cyber monitoring which, potentially, may afford them access to a greater number of instigatory cues (Finkel & Eckhardt, 2013; Steele & Josephs, 1990). However, no studies have explored this possibility.

Scant research has examined cyber monitoring and abuse as they relate to adult's IPV perpetration. The few studies that have explored cyber monitoring and abuse in relation to IPV reported a positive relationship between these phenomena, but were comprised of college student (Borrajó, Gámez-Guadix, & Calvete, 2015; Brem et al., 2015; Wolford-Clevenger et al., 2016) and adolescent (Temple et al., 2016) samples. No studies examined cyber monitoring or abuse within a sample of men arrested for DV. Investigation of cyber monitoring and abuse within an offender population is critical for a number of reasons. First, men who are arrested for DV evidence higher rates of severe violence and other coercive control tactics (Capaldi et al., 2009; Johnson, 2007) and therefore may engage in more frequent and severe forms of cyber abuse. Examining such a possibility may inform the ways in which victims' advocates respond to and educate victims. Second, understanding the role of technology in intimate relationships would inform interventions aiming to reduce recidivism among men arrested for DV. Finally, many states' legal policies lag behind social changes in technology use and have not incorporated cyber monitoring into DV and stalking statutes (Dunlap, 2012; Shimizu, 2013). Understanding the prevalence rates of cyber monitoring and abuse, and their relation to IPV perpetration, is necessary to amend current legal practices. Thus, examining this phenomenon among a sample of DV offenders is critically needed to inform both social policy and intervention efforts.

Summary and Aims

In sum, there is a growing need to examine cyber monitoring and abuse among men who are arrested for DV. Additionally, no research has examined these phenomena in the context of both IPV and alcohol problems. Thus, the present study will be the first to:

1. Provide an exploratory examination of the prevalence and frequency of cyber abuse perpetration and victimization among a sample of men arrested for DV and

court-referred to participate in BIPs. We made no a priori hypotheses regarding the prevalence and frequency of cyber abuse perpetration or victimization as the prevalence and frequency of these behaviors have not been examined in a sample of men arrested for DV.

2. Test cyber monitoring as a moderator of the relation between alcohol problems and IPV perpetration. Hypothesis 1: We hypothesized that alcohol problems would positively relate to psychological IPV perpetration among men who engage in high, but not low, levels of cyber monitoring. Hypothesis 2: We hypothesized that alcohol problems would positively relate to physical IPV among men who engage in high, but not low, levels of cyber monitoring.

Method

Participants

A sample of 216 men arrested for DV and court-ordered to attend BIPs in Rhode Island were recruited. Participant mean age was 34.25 ($SD = 10.61$) years old. The majority of the sample identified as White (64.1%), followed by Hispanic/Latino (15.1%), Black/Non-Hispanic (10.7%), "Other" (7.7%), American Indian or Alaskan Native (2.0%), and Asian or Pacific Islander (0.3%). Participants were employed (71.4%), unemployed and looking for work (14.0%), unable to work (7.6%), unemployed and not looking for work (3.7%), retired (2.3%), and students (1.0%). The mean income was \$31,884.17 ($SD = \$31,204.17$). The mean relationship length was 5.65 years ($SD = 6.32$). Prior to data collection, men completed an average of 10.02 ($SD = 6.86$) BIP sessions.

Measures

Cyber Abuse and Monitoring—Cyber abuse perpetration and victimization was assessed with the Controlling Partners Inventory (CPI; Burke et al., 2011). The CPI is a 36-item self-report measure designed to assess the extent to which a respondent was a victim (CPI-Partner) or perpetrator (CPI-Self) of cyber abuse (including cyber monitoring) within an intimate relationship in the 12 months prior to BIP entry. Cyber abuse includes items such as "sent threatening texts to partner" and "made threatening cell calls to partner". Response to items range from 0 (never) to 4 (four or more times) with higher scores indicating the presence of more cyber abuse. Possible total scores for both cyber abuse perpetration and victimization range from 0 to 36. For the purpose of differentiating cyber monitoring from cyber abuse in the present study, cyber monitoring was measured by summing men's scores on six cyber abuse items that ask respondent to describe the extent to which they check or monitor a partner's activities through technological devices (e.g., "checked social network page to monitor partner" and "checked sent/received email histories"). Items that inquired about harassing or threatening behaviors (e.g., "threatened to post inappropriate photos of partner" and "sent threatening emails/online messages to partner") in the absence of monitoring behaviors were not included in the cyber monitoring total score. The CPI-Self and CPI-Partner demonstrated excellent internal consistency and validity within a sample of men (Burke et al., 2011). Excellent internal consistency was demonstrated by the CPI-Self

and CPI-Partner within the present sample ($\alpha = .91$ and $.94$, respectively). The six cyber monitoring items yielded acceptable internal consistency ($\alpha = .86$).

IPV Perpetration—The perpetration items of the Psychological Aggression (e.g., “I insulted or swore at my partner” and “my partner did this to me”) and Physical Assault (e.g., “I pushed or shoved my partner” and “my partner did this to me”) subscales of the Revised Conflict Tactics Scales (CTS2; Straus, Hamby, Boney-McCoy, & Sugarman, 1996; Straus, Hamby, & Warren, 2003) assessed IPV perpetration in the 12 months prior to BIP entry. Responses to these 20 items ranged from 0 (*this never happened*) to 6 (*more than 20 times*). Total subscale scores were calculated by adding the midpoint for each item response (e.g., a “4” for the response “3–5 times,” and “25” for the response “more than 20 times”), with higher scores representing more frequent IPV perpetration (Straus et al., 2003). The psychological aggression and physical assault subscales of the CTS2 demonstrated adequate validity and internal consistency across studies and are widely used as measures of IPV in offender samples (Straus et al., 1996; Straus et al., 2003). The Psychological Aggression and Physical Assault subscales demonstrated adequate reliability in the present study ($\alpha = .78$ and $.84$, respectively).

Alcohol Problems—The Alcohol Abuse/Dependence Disorder subscale of the Psychiatric Diagnostic Screening Questionnaire (PDSQ; Zimmerman, 2002; Zimmerman & Mattia, 2001) was used to assess alcohol problems during the 12 months prior to BIP entry. The PDSQ screens for Axis I disorders from the Diagnostic and Statistical Manual-IV-TR (DSM-IV-TR; American Psychiatric Association [APA], 2000). The PDSQ Alcohol Abuse/Dependence Disorder subscale consists of 6 yes-no items. Responses that are endorsed are scored “1” and summed for a possible score range of 0 to 6; higher scores indicate greater alcohol problems. The PDSQ Alcohol Abuse/Dependence Disorder subscale is considered a valid measure of alcohol problems as evidenced by its excellent psychometric properties, including specificity and sensitivity in identifying alcohol abuse and dependence as described by the DSM-IV-TR (APA, 2000). This subscale was previously used within offender populations (Shorey, Febres, Brasfield, & Stuart, 2012) and demonstrated good internal consistency in the current sample ($\alpha = .93$).

Procedure

The institutional review board of the last author approved the procedures for the study. Each BIP site administered forty-hour, open-enrollment group interventions with similar intervention content. Participants provided informed consent to participate in the study prior to completing paper-and-pencil questionnaires in small groups during a BIP session; no compensation was provided. All questionnaire responses were confidential and not shared with BIP facilitators or the justice system. The participation rate was 84.03%. Data were collected from approximately 2014 until 2015.

Data Analytic Strategy

Descriptive and correlational analyses were conducted using SPSS Version 21.0. To examine the prevalence of cyber abuse perpetration and victimization, we dichotomized participants' responses to each of the CPI items, the CPI-Self total score, and the CPI-Partner total score

into 1 (*present*) or 0 (*absent*) and computed frequencies for each of these items. We then aimed to determine how frequently men who engage in cyber abuse perpetrate various cyber abuse acts. Frequency of cyber abuse perpetration was assessed by examining the mean scores for each cyber abuse perpetration act among those who endorsed at least one cyber abuse act. To determine the frequency of cyber abuse victimization, we examined the mean scores for each cyber abuse victimization act among those who endorsed at least one cyber abuse victimization experience.

We performed a moderation analysis using the six monitoring items on the CPI described above. We conducted hierarchical multiple regression analyses using Hayes' and Matthes' (2009) macro for SPSS to test the interaction between cyber monitoring and alcohol problems predicting IPV perpetration. Psychological aggression and physical assault perpetration were examined as separate outcome variables. IPV perpetration subscale scores were entered as the criterion variable, PDSQ Alcohol Abuse/Dependence total scores as the focal predictor, and cyber monitoring total scores as the moderating variable. PDSQ Alcohol Abuse/Dependence and cyber monitoring total scores were entered in the first step of the regression and the interaction term (i.e., PDSQ Alcohol Abuse/Dependence total scores multiplied by cyber monitoring total scores) was entered in the second step. All variables were mean centered to reduce multicollinearity (Cohen, Cohen, West, & Aiken, 2003). To explicate the interaction, we tested the relation between alcohol problems and IPV perpetration at high (+1 *SD*), mean, and low (−1 *SD*) levels of cyber monitoring (Aiken & West, 1991).

Results

Descriptive Statistics

With regards to non-technological IPV perpetration, 94.0% of men endorsed perpetrating at least one act of psychological aggression within the 12 months prior to BIP entry. Fifty-nine percent of men endorsed perpetrating at least one act of physical assault within the 12 months prior to BIP entry. Number of BIP sessions completed did not relate to any of the study variables. Means, standard deviations, and bivariate correlations among study variables are displayed in Table 1.

Prevalence and Frequency of Cyber Abuse

Prevalence and frequency of cyber abuse perpetration and victimization are displayed in Table 2. A majority of men endorsed perpetrating (81%), and being victimized by (84%) at least one act of cyber abuse in the 12 months prior to BIP entry.

Moderation Analyses

Table 3 displays regression results. Hypothesis 1 was supported. Results of a two-way interaction between alcohol problems and cyber monitoring predicting psychological aggression perpetration revealed that the overall model fit was significant. The addition of the interaction term contributed to a significant increase in R^2 ; the interaction term significantly predicted psychological aggression perpetration. Explication of this interaction evidenced a positive association between alcohol problems and psychological aggression

perpetration for men who endorsed high ($B = 5.52, p = .00$) and mean ($B = 3.27, p = .00$), but not low ($B = 1.01, p = .45$), levels of cyber monitoring perpetration. See Figure 1 for a visual depiction of this interaction.

Hypothesis 2 was supported. Results of a two-way interaction between cyber monitoring and alcohol problems predicting physical assault perpetration revealed that, again, the overall model fit was significant. The addition of the interaction term contributed to a significant increase in R^2 ; the interaction significantly predicted physical assault. Explication of this interaction evidenced a positive association between alcohol problems and physical assault perpetration for men who endorsed high ($B = 1.97, p = .00$) and mean ($B = .99, p = .03$), but not low ($B = .01, p = .98$), levels of cyber monitoring perpetration. See Figure 2 for a visual depiction of this interaction.

Discussion

The present study is the first to examine cyber abuse in a sample of men arrested for DV and court-referred to BIPs. Results revealed that a majority of men arrested for DV perpetrate cyber abuse, which includes cyber monitoring. Consistent with our hypothesis, our findings suggest that alcohol problems are positively related to IPV perpetration in men who engage in high, but not low, levels of cyber monitoring.

That our hypotheses were supported suggests that cyber monitoring may be a potential instigatory cue for men arrested for DV. That is, the association between alcohol problems and IPV perpetration was stronger among men who engaged in high levels of cyber monitoring. These findings are consistent with, and extend, existing conceptualizations of the relations between alcohol problems and IPV (Finkel & Eckhardt, 2013; Rothman et al., 2012). Alcohol problems are well-established predictors of IPV due, in part, to alcohol's disinhibiting and myopic effects that, when paired with an instigatory cue that elicits negative affect, increases the likelihood of violence (Finkel & Eckhardt, 2013; Steele & Josephs, 1990). In the absence of instigatory cues, alcohol consumption is less likely to facilitate violence (Finkel & Eckhardt, 2013). Indeed, negative affect is an important proximal correlate of IPV (Shorey, McNulty, Moore, & Stuart, 2015). Cyber monitoring is an accessible strategy that is associated with a number of negative emotional reactions, including jealousy and conflict among couples (Brem et al., 2015; Cohen et al., 2014; Utz et al., 2015). It follows, then, that information obtained via cyber monitoring might serve as an instigatory cue that elicits aggressive responses when also paired with problematic alcohol use. Future research using event-level research methods is needed to determine whether, for whom, and to what extent, alcohol use paired proximally with cyber monitoring coincides with affective experiences and facilitates IPV.

Results of the present study are consistent with and extend previous studies which documented a positive relation between cyber monitoring and abuse and IPV perpetration among samples of undergraduates (Borrajó et al., 2015; Brem et al., 2015; Burke et al., 2011; Wolford-Clevenger et al., 2016). Results of the present study provide insight into the specific tactics used by male DV offenders to monitor and abuse romantic partners with technology. A majority of men monitored partners' social interactions through common

technological mediums (e.g., cell phone, email, and SNS). What is perhaps more alarming is the prevalence of more explicit cyber monitoring behaviors. For instance, 43% of men gained access to a partner's password-protected information as a way to "check up on them," and over 15% used GPS technology to monitor a partner's activities. While the contexts under which cyber monitoring and abuse remain unknown, the association between these behaviors and IPV perpetration suggests future research should investigate traits and circumstances which elicit cyber monitoring and abuse as well as their potential impact on victims.

Limitations

There are a number of limitations to consider when interpreting results. First, our sample was primarily composed of employed, White men whose sexual orientation was not ascertained, which limits the generalizability of our findings to more diverse samples. Future research should consider examining these constructs in ethnically and socioeconomically diverse samples that include women. More research is needed to determine the extent to which samples of non-offenders consider cyber monitoring to be invasive, controlling, or abusive. It is plausible that cyber monitoring contributes to healthy relationship dynamics if both members of a dyad are aware of, and agree to, monitoring (Norton & Bishops, 2009). Second, our data were obtained through retrospective, cross-sectional methods, thereby precluding conclusions regarding the causality and directionality of the variables. For instance, we cannot ascertain whether cyber monitoring occurred before, during, or after alcohol use or IPV perpetration, nor could we conclude that men in our sample experienced negative reactions to information obtained via cyber monitoring. Indeed, it is possible that some cyber behaviors are perceived as indicative of care and affection (Brem et al., 2015). It is also plausible that negative affect, if present at all, preceded cyber monitoring (Tokunaga, 2016). Given the cross-sectional nature of our data, it is plausible that alcohol problems moderate the association between cyber monitoring and IPV perpetration. Longitudinal research using event-level research methods (e.g., daily diary research) and robust measures of alcohol use is needed to determine the proximal relations among alcohol use, cyber monitoring, emotions elicited from cyber monitoring, and IPV perpetration. Third, use of self-report methods within a sample of men arrested for DV may be influenced by social desirability. Indeed, it is suspect that not all men endorsed IPV perpetration in the past year despite being arrested for DV. Future research should employ couple-level research designs to elucidate the relations among these variables between intimate partners. Finally, researchers should examine other variables (e.g., romantic jealousy, neuroticism, perceived partner infidelity, emotion regulation, trait aggressiveness, and attachment) which may influence the results from the present study. Because jealousy is a well-established correlate of IPV and cyber monitoring, it is certainly plausible that jealousy better explains the relations between the study variables (Babcock, Costa, Green, & Eckhardt, 2004; Brem et al., 2015).

Research Implications

In addition to improving upon the aforementioned limitations, future research is needed to clarify the link between psychological aggression and cyber abuse perpetration. Although the association between psychological aggression and physical assault was stronger than the

association between psychological aggression and cyber abuse in the present study, some researchers speculate cyber abuse is simply a manifestation of psychological aggression (Borrajó et al., 2015). In addition, the growing body of research exploring the role of technology in intimate relationships yielded numerous terms used to describe potentially synonymous constructs, including cyber abuse (Temple et al., 2016), cyber aggression (Pabian, de Backer, & Vandebosch, 2015), cyber harassment (Kuzma, 2013), electronic surveillance (Tokunaga, 2011), and cyber stalking (Pittaro, 2007). Concurrence among researchers regarding the nature, definition, and terms used to explore these constructs will advance research, intervention, and social policy in these domains. Researchers aiming to further explore how cyber monitoring and abuse manifest in intimate relationships are encouraged to move beyond measures particular to a given SNS or technological medium. As technology and SNS continue to quickly evolve, measures that consider the broad similarities across SNS and technological mediums may be more efficient.

Whereas the past decade witnessed a surge in research exploring the role of technology in adolescent dating relationships (see Stonard, Bowed, Lawrence, & Price, 2014, for a review), less is known regarding how adults use technology within their intimate relationships. As the adolescent population ages into adulthood, there is a growing impetus to expand conceptualizations of cyber abuse to adult populations, including DV offenders. For instance, it remains unclear whether adults engage in cyber monitoring in an effort to intimidate or control a partner (Borrajó et al., 2011), retain their partner (Brem et al., 2015; Tonkunaga, 2016), and/or reduce uncertainty regarding their relationship (Fox & Warber, 2014). By using qualitative methods observed in early cyber abuse studies among adolescents (e.g., Bove, 2010), researchers may better understand how and under what circumstances technology is used to monitor, insult, and threaten a partner, how alcohol might influence these behaviors, and how such behaviors relate to IPV perpetration. Although men arrested for domestic violence are more likely to evidence male-to-female violence perpetration (Dobash, Dobash, Wilson, & Daly, 1992; Johnson & Leone, 2005), it is plausible that cyber dating abuse among this population is bi-directional. Such an exploration is particularly important for DV offenders. Previous research indicates that a majority of adults engage in cyber monitoring (Burke et al., 2011). However, given the high rate of severe violence and controlling behaviors observed in offender samples (Hamby, 2014), future investigations should consider potential differences in the way cyber monitoring and abuse is used among DV offenders as well as the effects these behaviors have on victims.

Clinical and Policy Implications

Given the relations between cyber monitoring, cyber abuse, IPV, and alcohol problems observed in the present study, clinicians should assess an offender's use of technology within romantic relationships, as well as the function of his or her monitoring behaviors in various contexts. Our findings suggest that the combination of problematic alcohol use and cyber monitoring increases the frequency with which IPV occurs. Therefore, helping an individual become more aware of his or her desire to monitor a partner, the context in which it occurs (e.g., in the presence or absence of alcohol use), his or her interpretation of information obtained thereafter, and subsequent methods of coping may facilitate more

adaptive conflict resolutions strategies. Similarly, results of the present study may be used to educate individuals regarding the potential dangers of technology within, and outside of, romantic relationships. The privacy policies and security measures individuals use affect the ways in which a current or former partner is able to obtain information, which may have implications for such couples' use of violence within romantic relationships. Given the prevalence of cyber abuse perpetration and victimization in the present study, social media campaigns should focus efforts on educating the public about the legality of various cyber abuse and monitoring behaviors, as well as the criminal implications of perpetrating such acts. Finally, efforts to amend legal policies and stalking statutes may be informed by this, and future, research in this understudied domain.

Conclusions

Results revealed that a majority of men perpetrate, and are victimized by, cyber abuse. Moreover, our findings provide evidence for conceptualizing cyber monitoring as a prevalent, readily-available instigatory cue which, when paired with alcohol problems, increases the likelihood of men's IPV perpetration. Results of the present study contribute to the growing body of literature highlighting the implications of technology within intimate relationships and extend these implications to DV offenders.

Acknowledgments

This work was supported, in part, by grant K24AA019707 from the National Institute on Alcohol Abuse and Alcoholism (NIAAA) awarded to the last author. The content is solely the responsibility of the authors and does not necessarily represent the official views of the NIAAA or the National Institutes of Health.

References

- Aiken, LS, West, SG. Multiple regression: Testing and interpreting interactions. Newbury Park: Sage; 1991.
- American Psychiatric Association. Diagnostic and statistical manual of mental disorders (4th ed., text rev.). Washington, D.C: American Psychiatric Association; 2000.
- Breiding MJ, Smith SG, Basile KC, Walters ML, Chen J, Merrick MT. 2014; Prevalence and characteristics of sexual violence, stalking, and intimate partner violence victimization in the United States: National Intimate Partner and Sexual Violence Survey, United States, 2011. Morbidity and Mortality Weekly Report. 63:1–18. [PubMed: 24402465]
- Brem MJ, Spiller LC, Vandehey MA. 2015; Online mate-retention tactics on Facebook are associated with relationship aggression. Journal of Interpersonal Violence. 30(16):2831–2850. [PubMed: 25339609]
- Borrajó E, Gámez-Guadix M, Pereda N, Calvete E. 2015; The development and validation of the cyber dating abuse questionnaire among young couples. Computers in Human Behavior. 48:358–365.
- Bowe G. 2010; Reading romance: The impact Facebook rituals can have on a romantic relationship. Journal of Comparative Research in Anthropology and Sociology. 1(2):61–77.
- Burke SC, Wallen M, Vail-Smith K, Knox D. 2011; Using technology to control intimate partners: An exploratory study of college undergraduates. Computers in Human Behavior. 27:1162–1167.
- Buss DM. 2002; Human mate guarding. Neuroendocrinology Letters. 23(4):23–29.
- Capaldi DM, Shortt JW, Kim HK, Wilson J, Crosby L, Tucci S. 2009; Official incidents of domestic violence: Types, injury, and associations with nonofficial couple aggression. Violence and Victims. 24(4):502–519. [PubMed: 19694354]
- Chermack S, Giancola P. 1997; The relationship between alcohol and aggression: An integrated biopsychosocial approach. Clinical Psychology Review. 6:621–649.

- Choi YH, Bazarova NN. 2014; Self-disclosure characteristics and motivations in social media: Extending the functional model to multiple social network sites. *Human Communication Research*. 41(4):480–500.
- Cohen EL, Bowman ND, Borchert K. 2014; Private flirts, public friends: Understanding romantic jealousy responses to an ambiguous social network site message as a function of message access exclusivity. *Computers in Human Behavior*. 35:535–541.
- Cohen, J, Cohen, P, West, SG, Aiken, LS. *Applied multiple regression/correlation analysis for the behavioral sciences*. 3rd. Mahwah, NJ: Erlbaum; 2003.
- Dunlap JA. 2012; Intimate terrorism and technology: There's an app for that. *UMass Law Review*. 7:10–38.
- Elphinston RA, Noller P. 2011; Time to face it! Facebook intrusion and the implications for romantic jealousy and relationship satisfaction. *Cyberpsychology, Behavior, and Social Networking*. 14:631–635.
- Finkel, EJ, Eckhardt, CI. Intimate partner violence. In: Simpson, JA, Campbell, L, editors. *The Oxford handbook of close relationships*. NY: Oxford University Press; 2013. 452–474.
- Foran HM, O'Leary KD. 2008; Alcohol and intimate partner violence: A meta-analytic review. *Clinical Psychology Review*. 28:1224–1234.
- Fox J, Warber KM. 2014; Social networking sites in romantic relationships: Attachment, uncertainty, and partner surveillance on Facebook. *Cyberpsychology, Behavior, and Social Networking*. 17(1): 3–7.
- Giancola PR, Duke AA, Ritz KZ. 2011; Alcohol, violence, and the alcohol myopia model: Preliminary findings and implications for prevention. *Addictive Behaviors*. 36:1019–1022. [PubMed: 21665371]
- Hamby S. 2014; Intimate partner and sexual violence research: Scientific progress, scientific challenges, and gender. *Trauma, Violence, and Abuse*. 15(3):149–158.
- Hayes A, Matthes J. 2009; Computational procedures for probing interactions in OLS and logistic regression: SPSS and SAS implementations. *Behavior Research Methods*. 41(3):924–936. [PubMed: 19587209]
- Hirschel D, Buzawa E, Pattavina A, Faggiani D. 2008; Domestic violence and mandatory arrest laws: To what extent do they influence police arrest decisions? *The Journal of Criminal Law & Criminology*. 98(1):255–298.
- Holtzworth-Munroe A, Stuart GL. 1994; Typologies of male batterers: Three subtypes and the differences among them. *Psychological Bulletin*. 116(3):476–497. [PubMed: 7809309]
- Johnson, MP. Domestic violence: The intersection of gender and control. In: O'Toole, LL, Schiffman, JR, Edwards, MK, editors. *Gender violence: Interdisciplinary perspectives*. 2nd. New York: New York University Press; 2007. 257–268.
- Kuzma J. 2013; Empirical study of cyber harassment among social networks. *International Journal of Technology and Human Interaction*. 9(2):53–65.
- Lampe, C; Ellison, N; Steinfield, C. A Face(book) in the crowd: Social searching vs. social browsing. Paper presented at the ACM Special Interest Group on Computer-Supported Cooperative Work; Banff, Canada. 2006.
- Leisring PA, Giumetti GW. 2014; Sticks and stones may break my bones, but abusive text messages can also hurt: Development and validation of the Cyber Psychological Abuse (CPA) Scale. *Partner Abuse*. 5(3):323–341.
- Muise A, Christofides E, Desmarais S. 2009; More information than you ever wanted: Does Facebook bring out the green-eyed monster of jealousy? *Cyberpsychology & Behavior*. 12(4):441–444. [PubMed: 19366318]
- Norton AM, Baptist J. 2014; Couple boundaries for social networking in middle adulthood: Associations of trust and satisfaction. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*. 8(4)
- Ogle RL, Miller WR. 2004; The effects of alcohol intoxication and gender on the social information processing of hostile provocations involving male and female provocateurs. *Journal of Studies on Alcohol*. 65:54–62. [PubMed: 15000504]

- Pabian S, De Backer CJ, Vandebosch H. 2015; Dark triad personality traits and adolescent cyber-aggression. *Personality and Individual Differences*. 75:41–46.
- Perrin, A. Social media usage: 2005–2015. Pew Research Center. 2015. Retrieved from <http://www.pewinternet.org/2015/10/08/2015/Social-Networking-Usage-2005-2015/>
- Pittaro ML. 2007; Cyber stalking: an analysis of online harassment and intimidation. *International Journal of Cyber Criminology*. 1:180–197.
- Rothman EF, Reyes LM, Johnson RM, LaValley M. 2012; Does the alcohol make them do it? Dating violence perpetration and drinking among youth. *Epidemiologic Reviews*. 34(1):103–119. [PubMed: 22128086]
- Schnurr MP, Mahatmya D, Basche RA. 2013; The role of dominance, cyber aggression perpetration, and gender on emerging adults' perpetration of intimate partner violence. *Psychology of Violence*. 3(1):70–83.
- Shimizu A. 2013; Recent Developments: Domestic violence in the digital age: Towards the creation of a comprehensive cyberstalking statute. *Berkeley Journal of Gender, Law, & Justice*. 28(1):116–137.
- Shorey RC, Febres J, Brasfield H, Stuart GL. 2012; The prevalence of mental health problems in men arrested for domestic violence. *Journal of Family Violence*. 27(8):741–748. [PubMed: 23284227]
- Shorey RC, MucNulty JK, Moore TM, Stuart GL. 2015; Emotion regulation moderates the association between proximal negative affect and intimate partner violence perpetration. *Prevention Science*. 16:873–880. [PubMed: 25995047]
- Smith, A. U. S. smartphone use in 2015. Pew Research Center. 2015. Retrieved from <http://www.pewinternet.org/2015/04/01/us-smartphone-use-in-2015/>
- Spitzberg, B, Cupach, W. Paradoxes of Pursuit: Toward a Relational Model of Stalking-related Phenomena. In: Davis, J, editor. *Stalking, Stalkers and Their Victims: Prevention, Intervention, and Threat Assessment*. Boca Raton, FL: CRC Press; 2001. 97–136.
- Spitzberg H, Hoobler G. 2002; Cyberstalking and the technologies of interpersonal terrorism. *New Media & Society*. 4(1):71–92.
- Steele CM, Josephs RA. 1990; Alcohol myopia: Its prized and dangerous effects. *American Psychologist*. 45(8):921. [PubMed: 2221564]
- Stonard KE, Bowen E, Lawrence TR, Price SA. 2014; The relevance of technology to the nature, prevalence and impact of adolescent dating violence and abuse: A research synthesis. *Aggression and Violent Behavior*. 19(4):390–417.
- Straus MA, Hamby SL, Boney-McCoy S, Sugarman DB. 1996; The Revised Conflict Tactics Scale (CTS2). *Journal of Family Issues*. 17(3):283.
- Straus, MA, Hamby, SL, Warren, WL. *The Conflict Tactics Scales Handbook*. Western Psychological Services; Los Angeles, CA: 2003.
- Stuart GL, Meehan J, Moore TM, Morean M, Hellmuth J, Follansbee K. 2006; Examining a conceptual framework of intimate partner violence in men and women arrested for domestic violence. *Journal of Studies on Alcohol*. 67:102–112. [PubMed: 16536134]
- Temple J, Choi H, Brem M, Wolford-Clevenger C, Stuart GL, Peskin M, Elmquist J. 2016; The temporal association between traditional and cyber dating abuse among adolescents. *Journal of Youth and Adolescence*. 45(2):340–349. [PubMed: 26525389]
- Thompson RS, Bonomi AE, Anderson M, Reid RJ, Dimer JA, Carrell D, Rivara FP. Intimate partner violence: prevalence, types, and chronicity in adult women. 2006; *American Journal of Preventive Medicine*. 30(6):447–457. [PubMed: 16704937]
- Tokunaga RS. 2011; Social networking site or social surveillance site? Understanding the use of interpersonal electronic surveillance in romantic relationships. *Computers in Human Behavior*. 27(2):705–713.
- Tokunaga RS. 2016; Interpersonal surveillance over social network sites: Applying a theory of negative relational maintenance and the investment model. *Journal of Personal and Social Relationships*. 33(2):171–190.
- Utz S, Muscanell N, Khalid C. 2015; Snapchat elicits more jealousy than Facebook: A comparison of Snapchat and Facebook use. *Cyberpsychology, Behavior, and Social Networking*. 18(3):141–146.

- Wolford-Clevenger C, Zapor H, Brasfield H, Febres J, Elmquist J, Brem M, Shorey RC, Stuart GL. 2016; An examination of the partner cyber abuse questionnaire in a college student sample. *Psychology of Violence*. 6(1):156–162. [PubMed: 27014498]
- Zimmerman, M. *The Psychiatric Diagnostic Screening Questionnaire manual*. Los Angeles: Western Psychological Services; 2002.
- Zimmerman M, Mattia JI. 2001; The Psychiatric Disgnostic Screening Questionnaire: Development, reliability, and validity. *Comprehensive Psychiatry*. 42:175–189. [PubMed: 11349235]
- Zweig JM, Dank M, Yahner J, Lachman P. 2013; The rate of cyber dating abuse among teens and how it relates to other forms of teen dating violence. *Journal of Youth and Adolescence*. 42:1063–1077. [PubMed: 23412689]

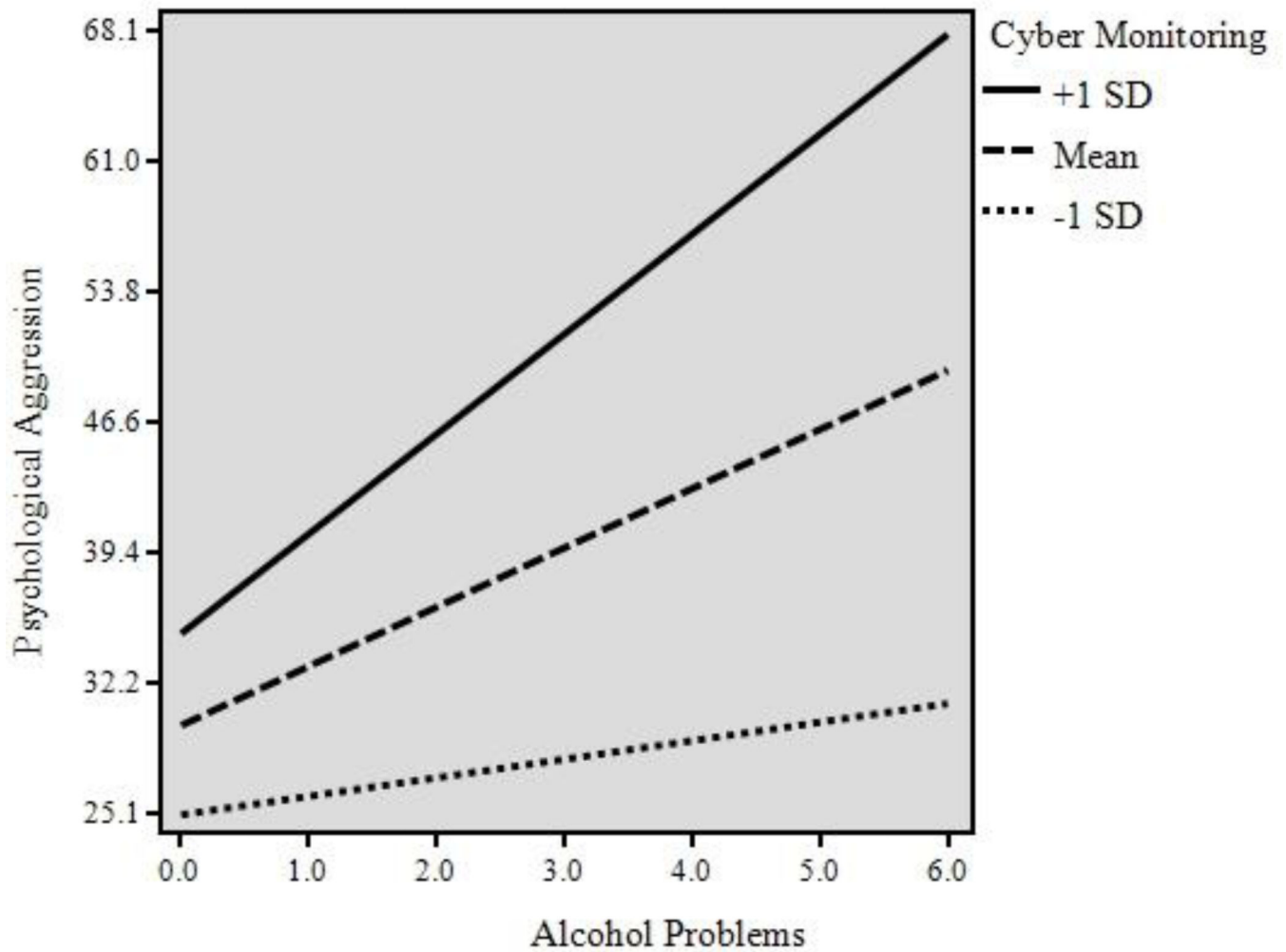


Figure 1.

Alcohol problems are positively related to psychological aggression perpetration at high and mean, but not low, levels of cyber monitoring in men arrested for domestic violence and court-referred to attend BIPs

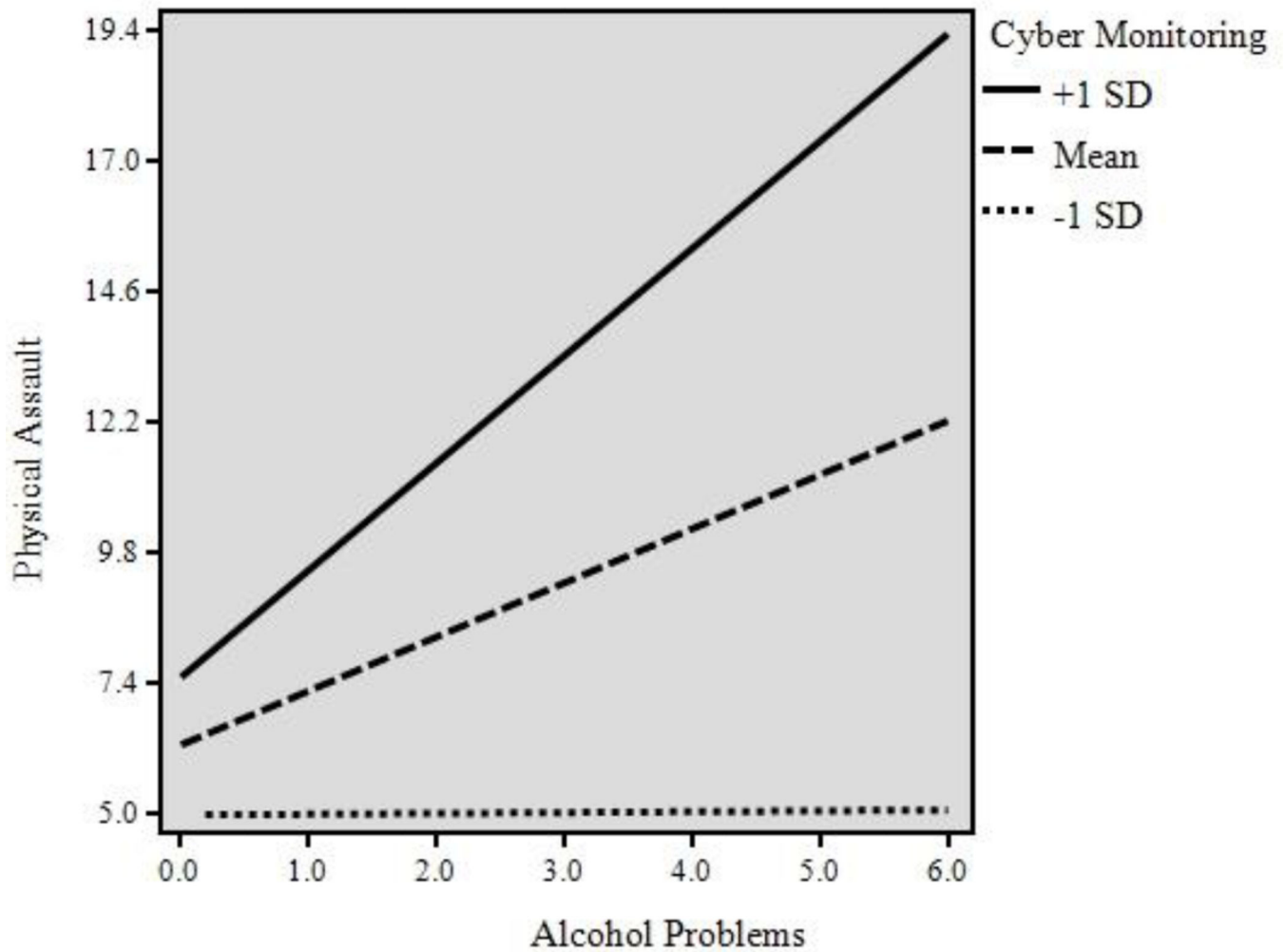


Figure 2. Alcohol problems are positively related to physical assault perpetration at high and mean, but not low, levels of cyber monitoring in men arrested for domestic violence and court-referred to attend BIPs

Table 1

Means, standard deviations, and bivariate correlations of study variables

Variable	1	2	3	4	5	6
1 Cyber Abuse Perpetration	---					
2 Cyber Abuse Victimization	.56**	---				
3 Cyber Monitoring Perpetration	.87**	.49**	---			
4 Psychological Aggression Perpetration	.39**	.37**	.27**	---		
5 Physical Assault Perpetration	.30**	.23**	.21**	.51**	---	
6 Alcohol Problems	.12	.12	.07	.21**	.14*	---
<i>M</i>	14.51	22.43	7.07	33.14	7.22	1.33
<i>SD</i>	14.80	18.42	6.84	32.85	14.37	2.14

* $p < .01$;** $p < .001$

Table 2

Prevalence and frequency of cyber dating abuse in men arrested for domestic violence

	Item	Perpetrator	Prevalence (%)	Frequency ($M \pm SD$)
1	Checked sent/received email histories [^]	Self	56.8	1.96 \pm 1.64
		Partner	66.4	2.54 \pm 1.61
2	Checked partner's cell call histories [^]	Self	66.5	2.33 \pm 1.53
		Partner	74.8	2.88 \pm 1.45
3	Used partner's password to check up on them [^]	Self	43.0	1.63 \pm 1.71
		Partner	43.5	1.69 \pm 1.82
4	Sent threatening emails/online messages to partner	Self	19.8	0.65 \pm 1.32
		Partner	63.5	2.39 \pm 1.70
5	Made threatening cell calls to partner	Self	27.5	0.83 \pm 1.39
		Partner	41.8	1.44 \pm 1.69
6	Sent threatening text to partner	Self	27.5	0.84 \pm 1.42
		Partner	48.2	1.74 \pm 1.73
7	Sent excessive number of emails/online messages to partner	Self	66.7	0.99 \pm 1.46
		Partner	49.5	1.79 \pm 1.75
8	Made excessive number of cell calls to partner	Self	48.9	1.69 \pm 1.69
		Partner	64.2	2.48 \pm 1.68
9	Sent excessive number of texts to partner	Self	48.4	1.59 \pm 1.65
		Partner	65.5	2.59 \pm 1.64
10	Checked social network page to monitor partner [^]	Self	52.8	1.75 \pm 1.63
		Partner	45.9	1.69 \pm 1.75
11	Checked partner's cell phone bill [^]	Self	19.5	0.65 \pm 1.29
		Partner	59.4	2.26 \pm 1.73
12	Made embarrassing, insulting, or threatening wall posts	Self	19.8	0.58 \pm 1.17
		Partner	30.6	1.00 \pm 1.55
13	Threatened to post inappropriate photos of partner	Self	14.1	0.37 \pm 0.94
		Partner	16.3	0.49 \pm 1.17
14	Posted inappropriate photos of partner	Self	8.1	0.20 \pm 0.65
		Partner	13.1	0.36 \pm 1.00
15	Used GPS etc. to monitor partner's location [^]	Self	15.5	0.44 \pm 1.03
		Partner	25.1	0.79 \pm 1.41
16	Used web cam to monitor partner's activities	Self	4.6	0.13 \pm 0.60
		Partner	8.8	0.29 \pm 0.93
17	Used hidden camera to monitor my partner's activities	Self	3.2	0.09 \pm 0.53
		Partner	8.1	0.24 \pm 0.84
18	Used spyware to monitor my partner's activities	Self	5.6	0.21 \pm 0.84
		Partner	10.3	0.34 \pm 1.01

[^] denotes items included in the total score for cyber monitoring;* $p < .05$,

^{**}
 $p < .01$

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

Hierarchical regression analyses predicting psychological aggression and physical assault perpetration ($n = 216$)**Table 3**

Predictor	Psychological Aggression					Physical Assault				
	R^2	R^2	β	B	F	R^2	R^2	β	B	F
Step 1	.10				13.49***	.05				5.83**
Alcohol			.21***	3.31***				.14*	1.01*	
Cyber Monitoring			.23***	1.11***				.16*	.35*	
Step 2	.12	.02	.20**	3.16**	10.86***	.06	.02	.13*	.95*	5.38**
Alcohol			.24***	1.16***				.17**	.37**	
Cyber Monitoring			.14*	.33*				.13*	.14*	
Alcohol \times Cyber Monitoring										

Note. All continuous variables are centered. Cyber Monitoring = cyber monitoring perpetration; Alcohol = alcohol problems

* $p < .05$,

**

$p < .01$;

$p < .001$