Digital Dating Abuse: Applications of the Theory of Planned Behavior

By
Jennifer Lynn McArthur

A Thesis Submitted to
Saint Mary's University, Halifax, Nova Scotia
In Partial Fulfillment of the Requirements for
the Degree of MSc in Applied Psychology, Forensic Stream.

August 2022, Halifax, Nova Scotia

Approved: Dr. Meg Ternes
Supervisor

Approved: Dr. Julie Blais
Examiner

Approved: Dr. Leanna Closson
Examiner

Approved: Dr. Wendy Craig
External Examiner

Date: August 5th, 2022

Digital Dating Abuse: Applications of the Theory of Planned Behavior

By Jennifer Lynn McArthur

Abstract

Using Ajzen's theory of planned behaviour (TPB) as a framework, the present study investigated the factors associated with emerging adults' intentions to perpetrate three different forms of digital dating abuse (DDA), as well as intentions to seek support from mental health professionals following victimization. The extended TPB models explained 47%, 37%, and 49% of the variance in intentions to commit digitally facilitated monitoring and control, direct aggression, and sexual coercion, respectively. Attitudes and injunctive norms significantly predicted intentions whereas descriptive norms and perceived behavioural control did not. Past behaviour, past victimization, and gender norms had indirect effects on intentions. Additionally, the extended TPB model accounted for 41% of intentions to seek help following DDA victimization. Attitudes emerged as a significant predictor, along with fear and past use of mental health services. Given the increasing prevalence of DDA, prevention efforts should target attitudes towards DDA-related behaviours and perceptions of social acceptability.

August 5th, 2022

Table of Contents

List of Tables

List of Figures

Defining Digital Dating Abuse

In 2018, Inyoung You was sending her boyfriend, Alexander Urtula, almost 800 text messages a day (Taylor, 2019). It was a constant and inescapable barrage of cruel messages - You repeatedly called her boyfriend "worthless", threatened physical violence, and urged him to "do everyone a favor and go [*expletive*] kill [him]self". Despite encouragement from friends, Urtula elected not to seek help from mental health professionals. After two months and more than 47,000 text messages from You, Urtula took his own life on the day he was set to graduate from Boston College. Although extreme, the You/Urtula case highlights the emerging trend of digital dating abuse (DDA) which involves the use of internet-enabled technologies and social media to harass, control, coerce, and harm a current or former dating partner (Zweig et al., 2014).

Estimates vary considerably, however, upwards of 93% of undergraduate students report experiencing at least one instance of online aggression at the hands of a dating partner (Leisring & Giumetti, 2014), suggesting that these behaviours have become increasingly common within romantic relationships. And despite the persistent belief that cyber-based violence is harmless, at least compared to physical violence (Stonard et al., 2017), empirical studies have documented a myriad of adverse psychological effects associated with cybervictimization, such as low self-esteem, depression, suicide ideation, as well as maladaptive coping behaviours (e.g., substance use; Gracia-Leiva et al., 2020; Marganski & Melander, 2018; Smith et al., 2018). The increasing use of technology to perpetrate dating violence, in conjunction with the increasing recognition of its negative impact on victims, indicates a growing urgency to examine the factors associated with emerging adults' perpetration of DDA, as well as victims' intentions to seek support from

mental health professionals following DDA. It is envisioned that a better understanding of the psychological and social factors that underpin these behaviours can aid in identifying modifiable factors and promoting effective DDA prevention and intervention strategies aimed at circumventing dating violence and encouraging healthy responses to victimization.

Dating Violence in the Digital Age

Dating violence is defined as the occurrence of actual or threatened physical, sexual, or psychological aggression within the context of a dating relationship (Centers for Disease Control [CDC], 2021). Dating violence peaks during emerging adulthood (ages 18 – 25), a developmental phase between adolescence and young adulthood defined by the exploration and instability of intimate relationships (Arnett, 2000; Johnson et al., 2015; Kim et al., 2008). According to estimates, 10-50% of college students, a subgroup of emerging adults, have experienced physical or sexual victimization by a dating partner, while an even greater proportion have experienced psychological violence (Kaukinen, 2014).

With nearly 100% of emerging adults owning a smart phone (Vogels, 2019) and using social media on a daily basis (Statistics Canada, 2019), technology has become interwoven into the daily lives of young people and is playing an increasingly pivotal role in intimate relationships. Undoubtably, social media can have a positive influence on relationships. Dating apps, for example, have emerged as a common way to connect with potential partners (Anderson et al., 2020), while burgeoning relationships are often made "official" on social media (Baker & Carreño, 2016). Emerging adults also report that social media increases emotional connections (Lenhart et al., 2015). However, there is increasing

evidence that the near-constant access to a dating partner via internet-enabled technologies also facilitates aggression between young people in romantic relationships (Borrajo et al., 2015; Draucker & Martsolf, 2010).

Forms of Digital Dating Abuse

A growing body of research conceptualizes DDA as encompassing at least three related, but distinct, forms of aggression perpetrated using technology: digital monitoring or control, digital direct aggression, and digital sexual coercion (Reed et al., 2016; Rocha-Silva et al., 2021; Thulin et al., 2020). Evidence suggests that these three forms differ in terms of behaviours, prevalence, motives, and consequences. Moreover, gender differences in perpetration and victimization have emerged across the three forms of DDA.

Often considered the most pervasive form of DDA (Borrajo et al., 2015; Gracia-Leica et al., 2020; Hancock et al., 2017; Lara, 2020), *digital monitoring or control* is characterized by intrusive behaviours aimed at controlling or intimidating a dating partner (Reed et al., 2016). Overlapping with cyberstalking, monitoring and controlling behaviours include repeatedly calling or texting a partner, accessing accounts without permission, and monitoring a partner's location via technology and social media (Reed et al., 2016). While digital monitoring and control can be done covertly (i.e., spyware), it is commonly perpetrated overtly with a perpetrator coercing a partner into giving them access to devices and accounts (Leitão, 2021).

Burke et al. (2011) found, of 804 American undergraduate students, 50% were either the perpetrator or victim of monitoring behaviours facilitated by technology, with women four times more likely than men to report using controlling behaviours on a partner. Common behaviours include monitoring a partner's call history and social media

and sending an excessive number of calls or texts. Similarly, over three-quarters of a Canadian sample of undergraduate students reported receiving texts from a partner checking up on them and one in five students said that a partner made them feel afraid when they neglected to respond (Hancock et al., 2017). Again, women were more likely to report monitoring a partner's activities compared to men (Hancock et al., 2017).

Although evidence suggests that these behaviours can be motivated by jealousy, recent studies have also noted a social shift where certain monitoring behaviours are considered normative in relationships, rather than intrusive (Reed et al., 2016; Stonard, 2017). For instance, when discussing a partner's excessive texting, several adolescents perceived this to indicate interest or concern (Stonard, 2017). However, digital monitoring and controlling behaviour can be used to restrict a partner's access to others outside the relationship (Leitão, 2021). Given its isolating nature, victims of digital monitoring and control experience higher levels of emotional loneliness and have fewer social supports than those who have not experienced victimization (Cava et al., 2020). Overall, digital monitoring and control has also been linked to lower self-esteem, distress, and depressive symptoms (Duerksen & Woodin, 2019; Smith et al., 2018). Further, monitoring and control behaviours may serve a precursor to other forms of violence. Leitão's (2021) qualitative analyses of online forum posts, for example, found a pattern of using cyber surveillance to justify further verbal and physical violence in relationships.

Digital direct aggression refers to the use of social media and communication technologies to harass a dating partner privately or publicly (Reed et al., 2016). A distinction has been made between minor direct digital aggression, such as swearing or insulting a partner through text or email, to more severe forms, including sending threats or

using social media to publicly humiliate a partner (Leisring & Giumetti, 2014). Minor digital aggression has been found to be extremely common with the bulk of American undergraduate students reporting past perpetration and/or victimization (Leisring & Giumetti, 2014). Although severe digital aggression is comparatively less common, over one in ten American and Canadian undergraduate students report being a victim of such abuses, with men being at a higher risk of victimization than women (e.g., Hancock et al., 2017; Leisring & Giumetti, 2014; Zapor et al., 2017). Direct aggression appears to be motivated by anger and often occurs within the context of a fight (Reed et al., 2021).

Like digital monitoring and control, digital dating aggression victimization has also been linked to poor mental health outcomes. In Smith et al.'s (2018) analyses of an adolescent sample, victimization was found to be associated with lower self-esteem and psychological distress. Digital direct aggression victimization has also been associated with higher levels of depressive symptoms, both six and 12 weeks after victimization (Duerksen & Woodin, 2019).

Finally, *digital sexual abuse* is characterized by "unwanted or unwelcome sexual behaviour conducted by electronic means" and often involves high levels of coercion (Powell & Henry, 2019, p. 3640). Unwanted behaviours may include, but are not limited to, pressuring a partner to send a sexually explicit message or nude image/video (i.e., coerced sexting) or disseminating sexually explicit images or videos without permission (Powell & Henry, 2019; Reed et al., 2016). Although seemingly less prevalent than digital aggression and digital monitoring behaviours, an estimated 20% of young adults have felt pressured into sexting by a dating partner (Drouin et al., 2015). Another study found that over 10% of college women and 6% of college men were pressured by a partner to engage

in sexual activities via technology (Reed et al., 2016). Findings also indicated that partners are more likely to disseminate an intimate image without consent than an acquaintance or stranger (Champion et al., 2022).

Gender differences largely align with the broader literature on sexual violence (e.g., Dank et al., 2014; Sutton & Simons, 2015) and suggest that men are more likely to perpetrate sexual abuse via technologies (e.g., Reed et al., 2016; Zweig et al., 2013), whilst women are at a higher risk of victimization (e.g., Dick et al., 2014; Reed et al., 2016; Zweig et al., 2013). Some evidence, however, suggests that men and women may experience similar rates of sexual DDA victimization with gender differences emerging in the type of sexual victimization experienced (Powell & Henry, 2019). A study of 2,956 Australian adults, for instance, found that women were more likely to report online sexual harassment (e.g., repeated sexual requests), while men were more likely to report victimization through the dissemination of non-consensual images by a partner (Powell & Henry, 2019). Further, emerging evidence suggests that both men and women experience similar adverse outcomes as a result of digital sexual coercion, with many experiencing trust issues, symptoms of posttraumatic stress disorder (PTSD), anxiety, depression, and suicidal ideation from a single incident (Bates, 2016; Champion et al., 2022). Even the perceived risk of non-consensual distribution is sufficient to cause high levels of distress; women who were pressured into sexting with a partner experienced similar outcomes to women whose image was shared and greater trauma than women who were coerced into having sex (Drouin et al., 2015).

Current Studies

Digital dating abuse is a growing phenomenon among emerging adults and although there has been increasing recognition of DDA as a form of violence by the academic community, there remains a notable lack of theoretically informed research examining this emerging phenomenon. As such, there is much we do not fully understand about the factors that influence behaviours associated with DDA perpetration or victimization. The following studies adopt the Theory of Planned Behaviour (TPB), a behavioural framework, as a theoretical lens to (i) explore socio-cognitive determinants (e.g., attitudes, social norms) of intentions to commit emerging adults' intentions to commit and, in turn, perpetrate digital direct aggression, digital monitoring and control, and digital sexual abuse, respectively and (ii) investigate the socio-cognitive factors that influence emerging adults' intentions to seek help following digital victimization by a romantic partner.

Theory of Planned Behaviour: Theoretical Overview

The Theory of Planned Behaviour is a well-established behavioural framework that has been previously used to explain prosocial (e.g., help-seeking; Tomczyk et al., 2020; Zorrilla et al., 2019) and antisocial behaviours (e.g., dating violence; Betts et al., 2011; Kernsmith, 2005; Kernsmith & Tolman, 2011; Tolman et al., 1996). Developed by social psychologist Ajzen (1991), the TPB is rooted in social learning and expectancy-value theories and incorporates both personal and social factors as motivational determinants of intentions and behaviours. The TPB is an extension of Fishbein and Ajzen's (1975) Theory of Reasoned Action (TRA). According to the theories of Reasoned Action and Planned Behaviour, behavioural intention is the strongest and most immediate predictor of the

actual performance of the behaviour. Behavioural intentions represent an individual's motivation to perform a behaviour (Ajzen, 1991, p. 181). The TRA originally assumed that individuals had complete volitional control over all social behaviours and that an individuals' intentions, in turn, would accurately predict behaviour (Fishbein & Ajzen, 1975). Subsequent research, however, demonstrated that many behaviours are not under complete self-control, which limited the applicability of the model (Armitage & Conner, 2001). To address this limitation, Ajzen (1991) extended the TRA into the TPB by including perceived behavioural control (i.e., beliefs about an individual's ability to perform a behaviour) as an additional predictor of intentions and actual behaviour.

According to Ajzen's (1991) TPB, behavioural intentions are motivated by three conceptually independent constructs: attitudes toward the behaviour, subjective norms, and perceived behavioural control (See Figure 1; Ajzen, 1991). Generally, the more favorable the attitudes and subjective norms, and the greater the perceived behavioural control, the stronger the intention should be to engage in a behaviour; however, the relative importance of these three constructs in prediction of intention vary across behaviours and situations.

Within the TPB, behavioral beliefs about the expected outcome of performing a behavior produce favourable or unfavourable attitudes towards (Ajzen, 1991). Generally, the intention to engage in a specific behaviour will be higher if the behaviour is expected to lead to a desirable affective, normative, or moral outcome.

Subjective norms, the social influence of the TPB, originally referred to the degree to which an individual perceives social pressure to engage in a specific behaviour (Ajzen, 1991). Past work using the TPB, however, revealed that subjective norms were the weakest predictor of intentions (Armitage & Conner, 2001). However, the inclusion of descriptive

norms, or the perception that others are performing that behaviour, into the TPB model increased the variance explained in behavioural intention by 5%, above and beyond attitudes, subjective norms, and perceived behavioural control. Descriptive norms have been previously found to be the second strongest predictor of intention to engage in a variety of behaviours, following attitudes (Rivis & Sheeran, 2003). Accordingly, to improve the predictive ability of the model, subjective norms have since been expanded, encompassing two normative aspects: injunctive norms refer to the expectation that socially important reference groups (e.g., peers, family) endorse the behaviour, while descriptive norms are the perceptions that others are performing that behaviour (Fishbein & Ajzen, 2011).

Perceived behavioural control, the final predictor in the TPB, reflects the extent to which an individual believes that he or she is capable of performing a given behaviour and consists of two aspects: self-efficacy (i.e., confidence to perform a behaviour) and controllability (i.e., degree of personal control over the performance of a behaviour; Ajzen, 2002). Control beliefs determine perceived behavioural control, and they are defined as salient beliefs about the possible factors available to them which may facilitate or hinder the performance of the behaviour, such as resources, skills, and opportunity (Ajzen, 1991). As illustrated in Figure 1, perceived behavioural control exerts influence on intentions by moderating the effect of attitudes and subjective norms, as well as exert a direct influence on behaviour (Ajzen, 1999, 2002). As a general rule, individuals with higher levels of perceived behavioural control are more likely to expend effort to execute a behaviour.

The TPB has broad support with meta-analytic studies demonstrating the predictive power of the model (e.g., Armitage & Conner, 2001). A large meta-analysis of 161

published studies by Armitage and Conner (2001) examined the general predictive ability of the model, revealing that the TPB accounted for, on average, 39% and 27% of the variance in intentions and behaviour, respectively. Further, intentions have been shown to reliably predict behaviours with an average correlation of .47 (R^2 = .22) between the two variables (Armitage & Conner, 2001).

Study 1: Using an Extended Theory of Planned Behaviour to Explain Digital Dating Abuse Perpetration

With the recent increase in scholarly interest in DDA in the past decade, a number of studies have identified correlates of DDA perpetration, including sociodemographic predictors, such as gender (Zweig et al., 2014) and age (Zweig et al., 2013; Peskin et al., 2017), behavioural predictors, such as internet use (Dake et al., 2012; Ricketts et al., 2015) and substance use (Peskin et al., 2017; Zweig et al., 2013). Studies have also noted the high prevalence of perpetration of DDA together with dating violence and (cyber)bullying (Peskin et al., 2017; Reed et al., 2016; Smith et al., 2018; Zweig et al., 2013). However, few have taken a theoretical approach to understanding the psychological and social factors that influence emerging adult's decision to engage in digital monitoring and control, digital direct aggression, and digital sexual coercion (Darvell et al., 2011).

In the sole study to collectively examine all three TPB components in relation to DDA, Darvell and colleagues (2011) measured the theory's ability to predict partner monitoring behaviours. The authors found evidence that attitudes and subjective norms were significant predictors of intentions to engage in partner monitoring using Facebook (Darvell et al., 2011). While Darvell et al.'s (2011) findings are encouraging, past studies indicate that the predictive ability of the TPB can vary by the specific behaviour in question (e.g., Betts et al., 2011; Doane et al., 2014; Kernsmith, 2005). For example, Betts

et al. (2011) found that attitudes and perceived behavioural control were significant predictors of college students' intentions to engage in verbally, physically, and sexually abusive behaviours in conventional (i.e., offline) contexts while subjective norms were only related to intentions to use physical violence. Accordingly, a more nuanced exploration of the key predictors of behaviour across the three forms of DDA is necessary to gain a comprehensive understanding of the predictive value of the antecedents which contribute to monitoring and control, direct aggression, and sexual coercion in broad cyber contexts beyond Facebook.

Although few studies have applied the TPB to DDA, several studies have examined the association between the TPB components and DDA, separately. According to the TPB, personal beliefs and, in turn, attitudes about DDA are primarily guided by the expected benefits and risks of engaging in the behaviour. Several studies suggest that individuals who believe that engaging in DDA behaviours will lead to beneficial outcomes are more likely to engage in the behaviour. For instance, individuals who perceive relational uncertainty resort to digital monitoring and control as a way to maintain or protect their relationship (Cavalcanti et al., 2020). Borrajo et al. (2015) also found that young adults who equated digital monitoring and control with love and affection engaged in higher levels of the behaviour than young adults who did not hold the same views. Likewise, adolescents who hold more sexting-positive attitudes have been shown to be at a higher risk of perpetrating technology-facilitated sexual coercion against another individual (Peskin et al., 2017; Reed et al., 2021). Adolescent girls, specifically, were more likely to engage in digital sexual abuse, such as sending intimate images to their partner without

consent, when they believed that it would make them feel sexy or desired by their partner (Reed et al., 2021).

In addition to one's own personal beliefs regarding the expected outcome of a behaviour, social pressures appear to play an important role in the decision to perpetrate DDA. Certainly, one of the most consistent predictors of intimate partner violence (IPV), in general, is one's social environment. A meta-analysis by Park and Kim (2018), for instance, identified 131 family- and community-related risk factors across 27 studies with family relationship problems, witnessing IPV, and deviant peers emerging as the strongest predictors of committing IPV. Early evidence from the DDA literature also suggests that individuals are more likely to engage in DDA if they perceive their friends and family as generally supportive of the behaviour or perceive them to be engaging in the behaviour. Peskin et al. (2017), for example, found that adolescents were more likely to perpetrate DDA if they knew peers who had engaged in related behaviours in the past year. Moreover, Van Ouytsel et al. (2020) found the belief that peers were engaging in similar behaviours was the most important correlate of digital monitoring and controlling activities. Having witnessed a father, but not a mother, use digital controlling behaviours was also associated with the enactment of similar behaviours (Van Ouytsel et al., 2020).

According to the TPB, behavioural decisions are also guided by beliefs about the possible factors which may facilitate or hinder the performance of a behaviour, such as DDA (Ajzen, 1991). In addition to having the technological skill, the digital environment itself may facilitate the perpetration of DDA. In the highly influential paper discussing online behaviours, Suler (2004) outlined several factors which promote online disinhibition, making it easier for individuals to "avert responsibility" and engage in

deviant activities online. For instance, most online communication occurs asynchronously via text and individuals are often less reserved about engaging in hurtful behaviours because they do not see or experience the victims' emotional response.

Although the ease of perpetrating DDA has not yet been examined as a direct correlate of actual DDA perpetration, several aspects highlighted by Suler (2004) have been echoed by young users of technology when discussing how social media and cell phones enable the perpetration of DDA. Stonard (2019), for example, examined perceptions regarding the use of technology for DDA in a qualitative study with adolescent focus groups. Adolescents recognized that online anonymity and the physical distance increases an individual's confidence to perpetrate DDA behaviours. Adolescents also reported that technology makes it easier to commit aggressions against a dating partner because constant access to a partner and their private information provide ample opportunities. Comparatively, the aspects of technology that made it more difficult to perpetrate abuses against a partner, such as targeted partner's ability to potentially block or ignore unwanted behaviour, were infrequently mentioned. Accordingly, the near constant access to a partner via technology, coupled with online disinhibition and the necessary technological skills (Vandebosch & Van Cleemput, 2009), may contribute to the personal belief that DDA can be perpetrated with relative ease.

Extending the Theory of Planned Behaviour

As an emerging phenomenon, there is a growing interest in understanding the correlates of DDA, and several studies have identified gender norm beliefs, past perpetration, and past victimization as common contributors to both conventional and digital violence (e.g., Ellyson et al., 2021; Van Ouytsel et al., 2020). Although not

explicitly included in the TPB, these constructs may contribute to the proximal cognitive processes that guide attitudes and subjective norms. Thus, their inclusion within the TPB framework as distal determinants of intentions and behaviour may offer additional insight into the factors that contribute to DDA perpetration and identify important prevention or treatment targets.

Past Perpetration. Ajzen (2011) stipulates that past behaviour is not a causal antecedent of intentions (i.e., it does not directly influence current intentions); rather, there are intervening mechanisms that mediate this relationship, namely the TPB components. Ajzen (1991), for instance, suggests that the repetition of a behaviour should produce increased perception of control. Arguably, past behaviour can also influence attitudes. General learning theories illustrate that behaviour is a function of basic learning principles whereby past behaviour exerts a strong influence on personal attitudes and, in turn, behavioural decisions (Kirsch et al., 2004). Operant conditioning, for instance, can be used to strengthen or weaken attitudes towards DDA perpetration through feedback from reinforcement or punishment, respectively (Kirsch et al., 2004). An individual would be more likely to develop favourable attitudes towards DDA if previous attempts to pressure a partner resulted in a partner sending an intimate image, especially in the absence of any repercussions. As such, past experiences provide individuals with explicit information about the consequences of performing a behaviour, shape personal attitudes and cognitions, and serve as a guide for future behaviour (Sommer, 2011).

In addition to informing expected outcomes (i.e., attitudes), past behaviour may influence perceptions of other's engagement and the social acceptability of the behaviour (i.e., subjective norms). Past studies demonstrate that individuals who have previously

perpetrated partner violence are more likely to overestimate the prevalence of abuse in intimate relationships (e.g., Neighbors et al., 2010; Witte & Mulla, 2013). For instance, perpetrators of partner violence perceived the prevalence of physical and sexual aggression as being higher than the actual national average (Neighbors et al., 2010).

Past Victimization. Evidence indicates that DDA typically occurs in the context of mutually violent relationships (Ellyson et al., 2021). One study suggests that almost 60% of young adults with DDA involvement played the role of perpetrator and victim at different points in time (Ellyson et al., 2021). Extant literature on intimate partner violence has demonstrated that one of the strongest predictors of partner violence perpetration is past victimization (Spencer et al., 2021). Further, young adults commonly cite anger and revenge as the primary motives for perpetrating DDA (Ellyson et al., 2021). Studies suggest that women, in particular, use violence in response to male-initiated violence (Kimmel, 2002). Accordingly, past victimization may directly influence attitudes towards DDA via the appraisal of affective outcomes, such that DDA perpetration is viewed favorably as a way to ameliorate negative feelings or protect oneself.

Similarly, victimization has also been shown to shape social cognitions. Miller (2011) found that women who experienced violence within a relationship were significantly more likely to perceive dating abuse as common compared to non-abused women. Attributing cognitions to the false consensus effect, Pipes and LeBov-Keeler (1997) also found that, compared to non-abused women, those who had been psychologically abused by an intimate partner were more likely to overestimate the number of others in abusive relationships. As a result of these misconceptions concerning the social norms of dating violence, past victimization has also been shown to increase the

acceptance of abuse (Miller, 2011; Pipe & LeBov-Keeler, 1997; Simon et al., 2001). For example, men who experienced dating violence perceived abuse as more effective, appropriate, and necessary compared to non-abused men (Miller, 2011).

Gender Norm Beliefs. Perceived social norms may also be a function of traditional gender role ideologies, or preconceptions concerning the roles that should be possessed or performed by each gender. Although often viewed as gendered, estimates of psychological IPV indicate gender symmetry, with men and women perpetrating at similar rates (Kimmel, 2002); however, notable differences in perceived motives for and, thus, in the social acceptability of the certain partner violence have been noted in the literature. For men, western societies traditionally emphasize male assertiveness, aggression, sexual entitlement, and dominion over women and scholars have previously attributed male-perpetrated aggression and sexual violence against women to this traditional role (e.g., McCarthy et al., 2018). In contrast, women's jealousy and possessiveness in relationships is considered appropriate behaviour, as is female-perpetrated aggression towards a male partner for self-protective reasons (Scarduzio et al., 2017).

Powell and Henry (2017) argue that the same stereotypical beliefs about gender roles that support conventional violence extend to online violence. However, the current evidence concerning this relationship between gender role beliefs and DDA is equivocal. Consistent with Powell and Henry's (2017) claim, Peskin et al. (2017) found that middle school students who endorsed gender norms concerning violence perpetrated by boys against girls were more likely to commit DDA behaviours than those who did not endorse the same norms. The endorsement of gender stereotypes has also been associated with the use of digitally facilitated controlling behaviours among high school students (Van Ouytsel

et al., 2020). However, in contrast to prior claims that gender-based attitudes results in violence against women, Cava and colleagues (2020) found that the endorsement of sexist attitudes was a predictor of DDA perpetration for adolescent girls, but not boys. The association between gender stereotypes and DDA may be specific to the behaviour. For example, boys with higher endorsements of gender stereotypes were more likely to engage in digital direct aggression while girls who endorsed gender stereotypes were more likely to engage in digital monitoring or control behaviours (Reed et al., 2021). Still, other research has failed to find evidence of an association between gender stereotypes and the perpetration of DDA (Víllora et al., 2019).

Study 1

Although a growing number of studies have examined the perpetration of DDA (e.g., Borrajo et al., 2015; Peskin et al., 2017; Van Ouytsel et al., 2020), there have been few attempts to devise a holistic understanding of DDA perpetration from a theoretical standpoint. The current study aimed at examining emerging adults' intentions and perpetration of three forms of DDA –monitoring and control, direct aggression, and sexual coercion – using an extended model of the TPB. In addition to the components in the original TPB model, past perpetration of DDA, past DDA victimization, and the endorsement of gender norm beliefs were considered as distal determinants of intentions mediated by the TPB components. The following hypotheses were constructed and examined based on theoretical (e.g., Ajzen, 1991) and empirical (e.g., Borrajo et al., 2015; Darrvell et al., 2011; Peskin et al., 2017; Van Ouytsel et al., 2020) evidence (See Figure 2):

H1: Attitudes towards DDA, injunctive and descriptive norms, and perceived behavioural control, independently and in combination, were expected to positively predict emerging

adults' behavioural intentions to perpetrate digital monitoring and control, digital direct aggression, and digital sexual abuse, respectively.

H2: Behavioural intentions, in turn, were expected to predict emerging adults' actual perpetration of digital monitoring and control, digital direct aggression, and digital sexual abuse, respectively, at a four-week follow-up with perceived behavioural control moderating this relationship.

H3: Emerging adults' past perpetration, past victimization, and gender norm beliefs were expected to positively predict emerging adults' behavioural intentions to perpetrate digital monitoring and control, digital direct aggression, and digital sexual abuse, respectively.

H4a: The effect of emerging adults' past perpetration of DDA on intentions to perpetrate digital monitoring and control, digital direct aggression, and digital sexual abuse, respectively, was expected to be mediated by the TPB variables.

H4b: The effect of emerging adults' past victimization on intentions to perpetrate digital monitoring and control, digital direct aggression, and digital sexual abuse, respectively, was expected to be mediated by attitudes, injunctive norms, and descriptive norms.

H4c: The effect of emerging adults' endorsement of gender norms on intentions to perpetrate digital monitoring and control, digital direct aggression, and digital sexual abuse, respectively, was expected to be mediated by attitudes, injunctive norms, and descriptive norms.

H5: Gender was expected to moderate the association between the TPB's central constructs and emerging adults' intention to perpetrate digital monitoring and control, digital direct aggression, and digital sexual coercion. More specifically, associations between attitudes toward DDA and intentions to perpetrate are expected to be stronger for

men and associations between subjective norms (i.e., injunctive and descriptive) and intentions to perpetrate are expected to be stronger for women.

Method

Participants

Wave 1 participants. Participants were eligible to participate if they were between the ages of 18 and 25, resided in Canada or the US at the time of the survey, and had been in at least one romantic relationship since the age of 18. Of the 639 participants who provided consent, data from 216 participants were removed from the final data set: 45 were excluded because the unique Participant ID and/or IP address was duplicated (in such cases the initial response was retained), 98 were excluded because participants did not meet eligibility criteria (e.g., have never been in a romantic relationship), 20 were removed for responding to the attention checks incorrectly, 54 were excluded due to excessive missing data (i.e., < 50% of survey items). Given the focus on gender differences between men and women in the present study, only participants who identified as one or the other were included. As such, 13 participants who identified as non-binary and 1 participant who did not report their gender were excluded from the study.

The final sample of $N = 408$ was composed of 334 females and 74 males recruited from two local universities ($n = 352$) and social media ($n = 56$). The sample had a mean age of 20.43 ($SD = 1.95$) and most participants identified as female (81.9%) and as non-Hispanic White (76.2%). Two-thirds (69.1%) of participants identified as heterosexual and 20.1% identified as bi-sexual. In terms of current relationship status, most participants reported being in a dating relationship (55.4%), followed by single (36.0%), married (7.1%), and other (1.5%; e.g., casually dating).

Wave 2 participants. Wave 2 responses were collected from 77 participants who participated in wave 1. The final matched sample represented 18.9% of the wave 1 sample. The final wave 2 sample was composed of 61% females and had a mean age of 20.48 (*SD* = 1.92).

Power analysis. There is no consensus in the literature on assessing the statistical a priori power for SEM; however, a sample of 200 has been recommended as a minimum sample for models of moderate complexity (Boomsma, 1983), while another widely accepted heuristic is a minimum of 10 participants per estimated parameter (e.g., path variance, covariance, disturbance; Bentler & Chou, 1987). Based on a maximum of 55 estimated parameters per extended model, the final wave 2 sample of $N = 77$ would be insufficiently powered. The sample from wave 1 ($N = 408$) would, however, meet the guidelines proposed by Boomsma (1983). As such, the behavioural outcome variables measured during wave 2 were removed from main analyses (i.e., H2) and behavioural intent to perpetrate was used as the dependent variable in all models.

Similarly, the small male sample ($n = 74$) did not meet the power guidelines set by Boomsma (1983) or Bentler and Chou (1987). As such, hypotheses requiring gender-based investigations using moderations (i.e., H5) were also dropped from the main analyses.

Measures

Demographics (Appendix A). For descriptive purposes, participants provided basic demographic information, including age, gender, race/ethnicity, level of education, and sexual orientation.

Dating experience. Participants were screened about their dating experience. Adapted from Reed et al. (2016), "dating partner" was defined as "… ANY of the

following: a boyfriend or girlfriend, someone you are a 'thing' with, someone you have dated or are currently dating (e.g., going out without being supervised), someone who you like or love and spend time with, or a relationship that might involve sex since the age of 18". Only those who responded "yes" to having a dating partner since the age of 18 were screened into the study.

Digital dating abuse (DDA). Digital Dating Abuse (DDA) assessed past perpetration and victimization using a 36-item instrument developed by Reed et al. (2016) which measured 18 behaviours across three broad forms of DDA: digital monitoring and control, digital direct aggression, and digital sexual coercion. All responses were measured on a 4-point scale, ranging from *never* (0) to *very often* (3), with higher average aggregated scores reflecting higher chronicity for each form of DDA.

Past perpetration. The DDA perpetration subscale ("I have…") included 18 items. Composed of six items, the digital monitoring and control subscale measured the use of technologies to control or intimidate a dating partner (e.g., pressured to respond quickly to calls, texts, or other messages). The digital direct aggression subscale included eight items and measured the use of social media or other technologies to hurt, humiliate, or threaten a dating partner, either publicly or privately (e.g., sent a threatening message). The digital sexual coercion subscale, comprising four items, measured the use of technology to pressure a dating partner to engage in unwanted sexual conduct, online or in-person (e.g., sent a sexual or naked photo to others without consent*).* The DDA perpetration subscales have previously yielded acceptable reliability: digital monitoring or control ($\alpha = .76$); direct digital aggression ($\alpha = .81$); and digital sexual coercion perpetration ($\alpha = .67$) (Reed et al., 2016). In the current study, the full DDA perpetration scale demonstrated high internal

consistency *(*α = .83). Internal consistency was acceptable for digital monitoring and control subscale (α = .77), digital direct aggression (α = .66) perpetration and the digital sexual coercion perpetration (α = .60) subscales.

Past victimization. The victimization subscale ("A dating partner has…") included 18 parallel items measuring a partner's use of digital monitoring and control subscale (6 items), digital direct aggression (8 items) and digital sexual abuse (4 items). The digital monitoring or control, direct digital aggression, and digital sexual coercion victimization subscales have previously yielded Cronbach's alphas of .83, .81, and .70, respectively (Reed et al., 2016). In the current study, the DDA victimization scale yielded high internal consistency (α = .94). High internal consistency was also demonstrated for the three victimization subscales: digital monitoring and control (α = .89); digital direct aggression (α = .89); and sexual coercion (α = .82).

Theory of Planned Behaviour Variables. Following recommendations from Ajzen (2006), an author-defined scale was developed to assess the central TPB constructs – attitudes towards DDA, subjective norms and perceived behavioural control, as well as behavioural intentions to commit DDA in the near future.

***Attitudes toward digital dating abuse*.** Attitudes were measured by assessing the degree to which participants favorably evaluate the perpetration of each specific DDA behaviour. Specifically, attitudes for each of the 18 DDA behaviours were evaluated using two seven-point semantic differential scales to get at the instrumental and affective aspects, respectively. Participants indicated if each behaviour (e.g., "To me, pressuring my partner to respond quickly to calls, texts, or other messages is…") was *unenjoyable* (1) to *enjoyable* (7); and *harmful to me* (1) to *beneficial to me* (7). For each behaviour, the two

attitude items were averaged, and composite scores were computed for the three forms of DDA with higher scores indicating more favorable attitudes toward the perpetration of digital direct aggression, digital monitoring and control, and digital sexual coercion, respectively. High internal consistency for attitudes was also demonstrated when assessed by DDA type: digital monitoring and control (α = .87); digital direct aggression (α = .89); and digital sexual coercion (α = .84).

***Subjective norms*.** Subjective norms were measured by evaluating perceptions of others' approval to engage in DDA behaviours (i.e., injunctive norms) and perceptions of others' behaviour (i.e., descriptive norms). Each of the 18 DDA behaviours consisted of two parallel items: one for injunctive norms (e.g., People who are important to me think I should monitor who my partner talks to and is friends with) and one for descriptive norms (e.g., People who are important to me monitor who their partners talk to and is friends with). All items were measured on a seven-point Likert scale ranging from *strongly disagree* (1) to *strongly agree* (7). Composite scores for injunctive and descriptive norms were computed for each of the three types of DDA with higher scores representing greater perceptions of others' approval and greater perceptions of others perpetrating DDA, respectively. Internal consistency for injunctive norms ranged from adequate to high when it was assessed by the three DDA types: digital monitoring and control (α = .84); digital direct aggression (α = .78); and digital sexual abuse (α = .73). High internal consistency for descriptive norms was also demonstrated when assessed by DDA type: digital monitoring and control (α = .88); digital direct aggression (α = .83); and digital sexual coercion (α = .82).

***Perceived Behavioural Control*.** Perceived behavioural control was measured by evaluating the perceived ease or difficulty of perpetrating the 18 digital abuse behaviours within the context of a relationship. Example items include "It is easy to monitor someone's whereabouts and activities". Items were scored on a seven-point Likert scale ranging from *strongly disagree* (1) to *strongly agree* (7). The perceived behavioural control scale demonstrated high internal consistency (α = .96). High internal consistency for perceived behavioural control was also demonstrated when assessed by DDA type: digital monitoring and control (α = .89); digital direct aggression (α = .96); and digital sexual coercion (α = .87).

***Behavioural intention to perpetrate*.** Behavioural intentions were assessed by evaluating a participant's expectation of perpetrating each of the 18 DDA behaviours in the next four weeks on a 7-point scale (*extremely unlikely* (1), *extremely likely* (7)). Scores for intentions were computed by averaging responses across the three forms of DDA. The intentions scale demonstrated high internal consistency (α = .86). Internal consistency for intentions ranged from adequate to high when assessed by DDA type: digital monitoring and control (α = .84); digital direct aggression (α = .77); and digital sexual abuse (α = .77).

Endorsement of gender role beliefs. The 13-item Social Roles Questionnaire (SQR; Baber & Jenkins Turner, 2006) was used to measure the endorsement of gender stereotypical beliefs across two subscales (α = .76). Composed of five items, the Gender Transcendent subscale (α = 0.61) assessed beliefs that gender did not dictate an individual's behaviours and included items like "People can be both aggressive and nurturing regardless of sex". All five items of the Gender Transcendent subscale were reverse coded. The Gender-Liked subscale (8 items; α = 0.75) measured the endorsement

of gender-based stereotypes. Example items include “Men are more sexual than women” and “Some types of work are just not appropriate for women”. All 13 item responses are anchored by *strongly disagree* and *strongly agree* and rated from 0 to 100%.

Attention checks. Two attention checks were included throughout the survey: “To help reduce the risk of bots, please select ‘very often’ as your response” (0 = *never*, 3 = *very often*) and “To help reduce the risk of bots, please enter CLOUD into the textbox”.

Procedure

Participants were recruited from two sources: a university sample was recruited from Saint Mary’s University and Dalhousie University through psychology participant pools (i.e., SONA systems) and a community sample was recruited from social media (i.e., Reddit). Advertisements invited individuals to participate in a two-wave study examining perceptions and experiences of digital dating aggressions (See Appendix B). The advertisement posted to social media included a brief description of the study, inclusion criteria, amount of compensation, and a link to the study.

Participants were presented with an electronic consent form which provided information about the purpose of the study (See Appendices C-E). After providing consent, participants were re-directed to Qualtrics, an online survey platform, to complete the study. To begin the survey, participants created a unique identifier by answering four questions (e.g., First letter of your mother’s first name; see Appendix A). This unique identifier was used to track the participants’ data across the two waves. All participants completed demographic questions and were screened for eligibility. Participants who were not between the ages of 18 and 25, did not reside in Canada or the US, or who indicated that they had not been in at least one romantic relationship since the age of 18 were redirected

to the end of the study. Eligible participants then completed the following measures: DDA perpetration and victimization subscales, TPB variables (attitudes, injunctive norms, descriptive norms, and perceived behavioural control), intentions to perpetrate DDA over the next four weeks; and the SQR.

As part of the larger study, participants who indicated that they had been the victim of at least one DDA behaviour were asked to complete additional help-seeking measures. These measures are covered under study 2 and readers are referred to the methodology section for study 2 for further information (see Page 59). Following the completion of all measures, participants were redirected to a new Qualtrics page and asked to provide their email address if they were interested in completing wave 2. Email addresses were not linked to participants' responses. After completion, participants were provided with a feedback form which outlined the purpose of the study (See Appendices F-G). SONA-eligible participants completed wave 1 in exchange for partial course credit (0.5 bonus points) and participants recruited via social media completed wave 1 in exchange for a chance to win one of five CDN$100 Amazon gift cards.

After four weeks, consenting wave 1 participants were contacted through email and invited to complete the second survey where they would complete a questionnaire on their DDA behaviour over the past four weeks. University participants recruited through SONA were directed to access the second study via their SONA portal while social media participants were provided a link in the email. Participants were presented with an electronic consent form for the second survey (see Appendices H-J). After participants consented, they were redirected to the online survey through Qualtrics. Participants were again asked to provide the unique identifier, based on the same four questions asked during

wave 1, to assist in data matching. Next, participants completed the digital dating abuse – perpetration subscale (see Appendix K; Reed et al., 2016). Following the completion of the second survey, participants were provided with a feedback form (see Appendices L and M). SONA-eligible participants were compensated with partial course credit (0.25 bonus points) and one entry into a draw for one of five CDN$100 Amazon gift cards. Participants recruited from social media received two entries into a draw for one of five CDN$100 Amazon gift cards. Prior to data collection, the study was cleared by the Saint Mary University's (REB #21-109) and the Dalhousie University (REB #2021-5821) Ethics Review Boards (REB).

Data Analysis Plan

First, exploratory analyses were conducted to examine the composition of the samples recruited through local universities and social media using SPSS v. 28.0. Specifically, analyses assessed for differences across demographics using Chi-Square analyses and key study variables using independent samples *t*-tests to determine if the two samples belonged to the same population. Next, descriptive statistics and correlations were examined. Pearson's and Spearman's *rho* correlations were calculated to assess the strength of the associations between variables.

To examine the hypotheses, path analyses were performed using SPSS AMOS v.28.0 to assess the predictive effects of the TPB variables and hypothesized antecedents on intentions to perpetrate the three forms of DDA. Separate models were tested for digital monitoring and control, digital direct aggression, and digital sexual aggression. For each model, past perpetration, past victimization, and gender norm beliefs were modeled as antecedents, predicting attitudes, injunctive norms, descriptive norms, perceived

behavioural control and intentions. Attitudes, injunctive norms, descriptive norms, and perceived behavioural control were then modeled as predictors of intentions to perpetrate. Given the relationship between TPB components, error terms were allowed to covary for attitudes, injunctive norms, descriptive norms, and perceived behavioural control. Age and gender (male = 1; female =2) were controlled in each model by including them as predictors of all endogenous variables. Mediation effects were tested using the bootstrapping method as recommended by Preacher and Hayes (2004). The total, direct, and indirect effects of predictor variables on help-seeking intentions were examined using percentile bootstrapping based on 5,000 bootstrapped samples. Partial mediation occurred when the indirect and direct effects were non-zero (i.e., significant) and full, or complete, mediation occurred when the indirect effect was non-zero, and the direct effect was zero (Rucker et al., 2011).

Maximum likelihood (ML) estimation was used to estimate parameters for all models. Model fit statistics are not reported as all models were fully saturated (i.e., $df = 0$). Excluding the exploratory moderation analyses, four separate models were conducted on the dataset (including the model from study 2). As such, a Bonferroni correction was used in the current study and significance was evaluated at .05/4 = .013.

Results

Exploratory Analysis

Demographic characteristics of the sample by recruitment source are provided in Table 1. Exploratory analyses detected several demographics differences across the two recruitment samples. Welch's *t* test revealed that two recruitment samples significantly differed in terms of age. Specifically, the university-recruited sample was more likely to be younger than the social media-recruited sample. Moreover, Fisher's Exact Test revealed

that the two samples also significantly differed in terms of gender, ethnicity, country of residence, level of education, sexual orientation, and relationship status. The social media sample had a higher proportion of Americans than the SONA sample, which was composed primarily of Canadians. Compared to Canadians, American participants had significantly higher intentions to perpetrate digital monitoring and control, $F(1, 406) = 6.96$, $p = .009$, digital direct aggression, $F(1, 406) = 26.91$, $p < .001$, and digital sexual coercion, $F(1, 406) = 12.36$, $p < .001$. Further, participants currently in a relationship had higher intentions to perpetrate digital monitoring and control than participants who reported being single, $F(3, 404) = 3.54$, $p = .015$.

Key study variables were also compared for the two samples (See Table 2). Attitudes were found to differ across the two samples for DDA with those recruited on social media holding more favourable attitudes towards digital monitoring and control and digital sexual coercion than those recruited through university participant pools. Compared to the university-recruited sample, the social media sample also rated social norms higher and had higher intentions to perpetrate digital direct aggression. Given the differences across the sample, analyses were conducted to compare models for the university-recruited sample and the combined sample (university plus social media recruited participants). Results indicated that the university-only models diverged from the combined sample models (See Appendix N). Therefore, the social media-recruited sample was dropped and only the university-recruited sample was included in further analyses.

Preliminary Data Screening and Assumption Checks

An analysis of missing values revealed a low number of cases with missing data per variable (i.e., <5%). Bootstrap analysis in AMOS requires a complete data set, so missing

values were replaced using mean imputation. Path analysis assumptions are guided by multivariate regression assumptions (Meyers et al., 2017). Univariate outliers were defined as any standardized composite score (i.e., *z*-score) that exceeded an absolute value of 3.29. Univariate outliers were detected on the digital monitoring and control perpetration ($n = 6$) and victimization ($n = 7$); digital direct aggression perpetration ($n = 5$) and victimization ($n = 10$); and digital sexual coercion perpetration ($n = 4$) and victimization ($n = 3$). Univariate outliers were also detected on the TPB-related variables: digital monitoring and control attitudes ($n = 3$), injunctive norms ($n = 5$); digital direct aggression attitudes ($n = 9$), injunctive norms ($n = 6$), and descriptive norms ($n = 6$); and digital sexual coercion attitudes ($n = 7$), injunctive norms ($n = 9$), and descriptive norms ($n = 7$). Higher scores concerning DDA perpetration were expected to be rare; however, they are also of particular interest for the current study and were thus retained. The univariate outliers ($n = 6$) detected on the gender norm scale were also retained.

To assess for multivariate outliers and influential cases, Mahalanobis' distances and Cook's distances values were calculated. Eight observations exceeded a Mahalanobis score of 24.32 (critical value obtained from Chi-square table with $p < .001$). Next, influential cases were evaluated and defined as cases with a Cook's distance $^{3}1$. Cook's distance scores were all <1 (<.001, .07) and it was determined there were no influential cases. Accordingly, all observations were retained for analysis.

Maximum Likelihood estimation is fairly robust to violations of normality with acceptable values of skewness equal to ±3 and acceptable kurtosis values equal to ±10; however, violations can inflate model statistics and underestimate the standard error (Kline, 2005). Violations of normality were noted across all study variables with absolute

ratios values for skewness ranging from 4.61 to 30.96 and kurtosis ratios ranging from 2.04 to 81.16. The observed leptokurtic values likely reflect the low endorsement of more severe forms of DDA. To preserve power, all cases were retained. Both Pearson's and Spearman's *rho* correlations were reported. Further, given the absence of normality, the significance of model parameters was estimated using a 95% percentile confidence interval based on 5,000 bootstrapped samples (Field, 2018).

Finally, the data was screened for multicollinearity by examining a correlation matrix of predictor variables in each model. Correlations between predictor variables did not exceed an absolute value of .8, indicating there were no issues with multicollinearity. Tolerance values were all greater than .10 and variance inflation factor (VIF) values did not exceed 10 indicating that the assumption was met.

Descriptive Statistics

Item frequencies and means for the digital dating abuse perpetration and victimization subscales are presented in Table 3 and 4, respectively. Overall, mean past perpetration and victimization levels were low for digital monitoring and control (perpetration: M = .41, SD = .40; victimization: M = .61, SD = .66), digital direct aggression (perpetration: M = .09, SD = .14; victimization: M = .28, SD = .47), and digital sexual coercion (perpetration: M = .09, SD = .18; victimization: M = .51, SD = .67). Since item level endorsement across several of the perpetration and victimization behaviours were low, the variables were dichotomized (never perpetrated/victimized = 0, ever perpetrated/victimized = 1) for the remaining analyses.

Of the 352 participants, 7.4% reported never perpetrating or experiencing any DDA behaviour, 14.2% reported being either a perpetrator or victim of any DDA behaviour, and

78.4% reported being both a perpetrator and victim of any DDA behaviour. Over 80% of participants reported engaging in a monitoring and control behaviour at least once and 75.6% reported being a victim of digital monitoring and control. Two-thirds (67.3%) reported being both a perpetrator and victim. Less than half (45.5%) of the sample reported engaging in digital direct aggression at least once although several of the digital direct aggression behaviours were endorsed by less than 5% of the sample. Over half the sample (55.7%) reported being a victim of digital direct aggression. One-third (33.8%) reported having been both a perpetrator and victim of digital direct aggression behaviours. Roughly a quarter (25.6%) of participants reported engaging in digital sexual coercion at least once, while comparatively, 55.4% of the participants reported being a victim of digital sexual coercion. Less than a quarter (22.7%) of the sample reported being both a perpetrator and victim of digital sexual coercion. Almost half (48.8%) of the sample engaged in poly-perpetration, such that they perpetrated two or more forms of DDA, while almost two-thirds (62.5%) experienced poly-victimization.

Concerning the TPB constructs, emerging adults in the sample had low favourable attitudes towards digital monitoring and control, digital direct aggression, and digital sexual coercion (see Table 2, university-recruited sample). Similarly, there was a low perception of social acceptability and social engagement for the three types of behaviours, although perceptions were highest for digital monitoring and control behaviours, compared to digital direct aggression and digital sexual coercion. In comparison, the sample reported high perceived behavioural control for the three types of DDA. Overall, intentions to commit digital monitoring and control, digital direct aggression, and digital sexual coercion in the next four weeks were low.

Correlations between past perpetration, past victimization, gender norm beliefs and the central TPB constructs are presented in Table 5 by DDA type. Past perpetration and past victimization were weak-to-moderately associated with attitudes, injunctive and descriptive norms, and intentions to perpetrate for all three DDA behaviours. Gender norm beliefs were associated with intentions to perpetrate the three DDA behaviours; however, these correlations were non-significant when Spearman's *rho* correlations were examined. Attitudes, injunctive norms, and descriptive norms were moderately associated with intentions to perpetrate for all three DDA behaviours. Perceived behavioural control was negatively associated with intentions to perpetrate digital monitoring and control; however, when Spearman's *rho* correlations were examined, this correlation was not significant. Perceived behavioural control was not significantly associated with intentions to perpetrate digital direct aggression or digital sexual coercion.

Evaluation of an extended Theory of Planned Behaviour

The extended TPB model accounted for 46.5%, 37.1%, and 48.7% in intentions to perpetrate digital monitoring and control, digital direct aggression, and digital sexual coercion, respectively. Direct effects for the three models presented in Figures 3, 4, and 5. Attitudes had a significant and positive effect on intentions for all three forms of DDA. That is, more favourable attitudes towards DDA were associated with higher intentions to perpetrate. Attitudes had a small effect on intentions to perpetrate digital monitoring and control (f^2 = .12), digital direct aggression (f^2 = .13) and digital sexual coercion (f^2 = .09).

Injunctive norms had a significant effect on intentions to perpetrate digital monitoring and control and digital sexual coercion, such that a greater perception of social acceptability was associated with higher intentions to perpetrate. Injunctive norms had a

small effect on intentions to perpetrate digital monitoring and control (f^2 = .07) and digital sexual coercion (f^2 = .09). Injunctive norms also had a small effect on intentions to perpetrate digital direct aggression (f^2 = .08); however, the effect failed to reach statistical significance. For all three forms of DDA, the direct effect of descriptive norms and perceived behavioural control on intentions was non-significant.

Past perpetration had a significant total effect on intentions to perpetrate digital monitoring and control, digital direct aggression, and digital sexual coercion. Specifically, previous engagement in DDA was associated with higher intentions to perpetrate DDA in the future. For digital monitoring and control and digital sexual coercion, results revealed an indirect effect of past perpetration on intentions via attitudes and injunctive norms. After accounting for the mediating role of the TPB variables, the effect of past perpetration on intentions to perpetrate digital monitoring and control was non-significant, suggesting that this association was fully mediated by attitudes and injunctive norms while the effect of past perpetration on intentions to perpetrate digital sexual coercion remained significant, suggesting that this association was partially mediated by the TPB variables. For digital direct aggression, only attitudes were found to partially mediate the relationship between past perpetration and intentions.

Past victimization also had a significant total effect on intentions to perpetrate digital monitoring and control, digital direct aggression, and digital sexual coercion. Specifically, prior DDA victimization was associated with higher intentions to perpetrate DDA. For digital monitoring and control, the predictive effect of past victimization on intentions was fully mediated by attitudes and injunctive norms. For digital direct aggression, the predictive effect of past victimization on intentions was fully mediated by

attitudes. For digital sexual coercion, the combined indirect effect of past victimization on intentions was significant indicating mediation; however, neither the effects of past victimization of the TPB variables nor any specific indirect effect reached statistical significance when Bonferroni's Correction was applied. Nonetheless, it should be noted that the effect of past victimization on attitudes and the indirect effects via the attitudes and injunctive norms paths were significant at the $p < .05$ level.

Gender norm beliefs had a significant total effect on intentions to perpetrate digital monitoring and control, but not digital direct aggression or digital sexual coercion. The predictive effects of gender norm beliefs on intentions were mediated by attitudes and injunctive norms. After accounting for the mediating role of the TPB variables, the effect of gender norm beliefs on digital monitoring and control was non-significant, suggesting that this association was fully mediated by attitudes and injunctive norms. A summary of total, indirect, and direct effects for digital monitoring and control, digital direct aggression, and digital sexual coercion are presented in Tables 6, 7, and 8, respectively.

Discussion

DDA is a growing societal problem and, as demonstrated in the current study, emerging adults commonly utilize technology as a mechanism for perpetrating aggressions against an intimate partner. The current exploration of socio-cognitive factors found that the central TPB components influenced intentions to perpetrate digital monitoring and control, digital direct aggression, and digital sexual coercion; however, attitudes was the only component to uniquely predict intentions for all three behaviours. Further, past perpetration, past victimization, and gender norm beliefs emerged as important correlates of emerging adults' attitudes, injunctive norms, and intentions to perpetrate DDA.

Consistent with prior findings (e.g., Borrajo et al., 2015; Gracia-Leica et al., 2020; Hancock et al., 2017; Lara, 2020), findings from the present study indicate that DDA is commonplace among emerging adults with many perpetrating and/ or experiencing DDA at least once. Further, DDA is frequently bidirectional, with the vast majority of participants reporting experiences of both perpetration and victimization. In accordance with previous work (Reed et al., 2016), digital monitoring and control was the most common of the three forms of DDA in terms of both past perpetration and victimization. Although prevalence rates appear high, most of the sample reported engaging in behaviours often described as normative courtship behaviours, such as excessive texting, using social media to tease a partner, and sexting a romantic partner (Reed et al., 2016; Stonard, 2017). Arguably more severe (and potentially unlawful) forms of DDA, such as threatening a partner or disseminating intimate images without consent, were less commonly perpetrated by those in the sample (see Table 3).

In contrast to the relatively high prevalence rates found, emerging adults in the current study were not found to hold overly favourable attitudes towards DDA or high perceptions of social acceptability and social engagement regarding DDA when accounting for both minor and severe forms of DDA. There may be several explanations for this discrepancy. First, as mentioned, each form of DDA comprised a mix of minor and severe behaviours. While the perpetration scores were converted into “ever” perpetrated, the TPB scores included both forms and were likely strongly influenced by the low endorsement of more severe forms of DDA. Further, it is possible that methodological issues, such as high face validity, may have also accounted for the low favourable attitudes with emerging adults unwilling to report enjoyment from engaging in several of the behaviours, such as

threatening a partner or engaging in behaviours without consent. For social acceptability and engagement, it is also possible that while these behaviours are being commonly carried out between romantic partners, emerging adults are not openly discussing these actions with other socially relevant parties. For instance, compared to conventional sex-based topics, high school students are less likely to discuss digital sex-based topics (e.g., sexting) with both their parents *and* friends (Widman et al., 2021). This may lead to a general perception that others are not partaking in various DDA-related behaviours, particularly sexually coercive behaviours.

The main aim of the present study was to examine the utility of an extended TPB as a framework for explaining DDA intentions and behaviours. Due to high rates of attrition in the sample, the study was focused solely on the associations between antecedents, TPB variables, and intentions to perpetrate. As expected, the extended models were found to partially explain emerging adults' intentions to perpetrate DDA, accounting for 37% to 49% of the variance in intentions. These findings are in line with prior studies utilizing the TPB in similar violence-related contexts, such as conventional dating violence (e.g., Alimoradi et al., 2021; Betts et al., 2011; Hou et al., 2020; Lin et al., 2021; Kernsmith & Tolman, 2011) and cyberbullying (Heirman & Walrve, 2012; Pabian & Vandebosch, 2014).

The relationship between attitudes and antisocial behaviour has been widely documented and consistent with the literature examining other cyber-based aggressions (e.g., Darvell et al., 2011; Doane et al., 2014; Pabian & Vandebosch, 2014) as well as the broader literature on the TPB (Rivis & Sheeran, 2003), attitudes towards perpetration emerged as the most robust predictor of intentions for all three forms of DDA. That is, the

severity and likelihood of personal consequences play an important role in emerging adults' decisions to engage in DDA (Ajzen, 1991). Contrary to expectations, however, attitudes were the only TPB component found to consistently predict intentions to perpetrate all three forms of DDA. Only partially consistent with past findings, injunctive norms were associated with intentions to perpetrate digital monitoring and control and digital sexual coercion. Interestingly, the present study found no evidence of an association between injunctive norms and intentions, despite moderate correlations between these variables for digital direct aggression in the extended models. One possible explanation is that digital direct aggression is a form of reactive aggression. Previous investigations into the reasons for engaging in direct aggression has revealed anger as a key motivator (Reed et al., 2016). As such, the expected outcome of performing the behaviour (i.e., revenge, alleviate anger) may drive the decision to perpetrate in the heat of the moment, irrespective of social opinion. However, it should be noted that the effect of injunctive norms on intentions to perpetrate digital direct aggression was similar to that of digital monitoring and control and digital sexual coercion. Future studies should re-examine this relationship.

In the current study, there was no evidence that descriptive norms directly influenced intentions to perpetrate any form of DDA. Although previous TPB-based studies have demonstrated that norms are the weakest predictor of behaviour (e.g., Armitage & Conner, 2001), previous non-TPB studies examining predictors of DDA indicate that social pressures, specifically the endorsement *and* actions of peers and family members, are highly influential on decisions to perpetrate conventional and digital dating abuse (Park & Kim, 2018; Peskin et al., 2017; Van Ouytsel et al., 2020). As such, these findings are difficult to interpret. One possible explanation is that social influence is

difficult to separate from attitudes towards violence and prior exposure can shape the belief that a behaviour is acceptable and/ or instrumental. For example, Temple et al. (2013) found that watching mother-to-father violence produced more favourable attitudes towards violence which, in turn, predicted psychological and physical acts of violence against a dating partner. While further exploration is needed to understand this relationship in terms of DDA, norms may not directly influence aggressive behaviour; rather, norms may play an indirect role in perpetration by shaping attitudes towards digital monitoring and control, digital direct aggression, and digital sexual coercion.

Perceived behavioural control also failed to predict DDA perpetration. While also incongruent with the TPB, these findings are consistent with prior research examining the TPB in the context of cyber-based violence. Darvell et al. (2011) found no evidence that perceived behavioural control predicted intentions to engage in partner monitoring using Facebook. Likewise, in applying the TPB to cyberbullying, Pabian et al. (2014) found no effect of perceived behavioural control on intentions or behavioural outcomes. Such findings led Doane et al. (2014) to posit that, as avid users of technologies and social media, emerging adults possess the opportunity and proficiency to carry out many cyber-based aggressions. Given the lack of evidence that perceived behavioural control influences intentions to perpetrate DDA, in conjunction with relatively high perceived behavioural control scores overall, the present findings may provide further support to the argument that emerging adults have complete volitional control over their use of technologies and, therefore, the perceived ease with which one could commit DDA is not a deciding factor.

The present study also examined the role of past victimization, past perpetration, and gender norm beliefs as possible distal predictors of intentions, with components of the TPB acting as mediators. Prior research has noted that DDA is bidirectional with partners playing the role of perpetrator and victim at varying points in time (Ellyson et al., 2021; Reed et al., 2016). Understanding the mechanisms between past experiences and future decisions to engage in similar behaviours may help to further clarify this relationship. In partial support of the hypotheses, results from the current study demonstrate that past perpetration and past victimization play a role in shaping personal and social cognitions that support intentions to perpetrate DDA. Results suggest that prior experiences perpetrating DDA inform expected outcomes concerning future decisions to perpetrate and, if positive, increases an individual's intentions to re-engage. Likewise, being a victim of DDA had a similar influence on personal cognitions and promoted more favourable attitudes. As mentioned in the literature review, victims may view the performance of DDA positively when attempting to protect themselves or ameliorate distressing feelings associated with their situations (Ellyson et al., 2021). However, for digital direct aggression and digital sexual coercion, past perpetration was only partially mediated by the TPB components, suggesting that the four TPB factors may be insufficient for explaining DDA.

Although the same gender role stereotypes that support conventional dating violence are expected to influence DDA perpetration (Giaccardi et al., 2016; Powell & Henry, 2017), empirical evidence has been previously mixed (Cava et al., 2020; Peskin et al., 2017; Van Ouytsel et al., 2020). Similar to previous studies that explored the role of gender norm beliefs on controlling behaviours (e.g., Van Ouytsel et al., 2020), the current

findings demonstrate that the endorsement of gender norm beliefs is associated with higher intentions to perpetrate digital monitoring and control; however, the study failed to find evidence that gender norm beliefs contribute to intentions to perpetrate digital direct aggression or digital sexual coercion. The present sample was predominately women, which may explain the association between gender norm beliefs and intentions to perpetrate digital monitoring and control, which is typically motivated by jealousy and possessiveness, acceptable qualities for women (Scarduzio et al., 2017). Comparatively, prior literature on violence demonstrates that gendered beliefs tend to support men's use of aggression and sexual coercion; however, men were underrepresented in the present study and gender differences were largely unexplored. Further work is needed in this area to elucidate the influence of gender norm beliefs on attitudes, norms, intentions and, ultimately, behavioural outcomes.

When examining the effect of stereotypical gender and dating beliefs on DDA perpetration, Reed et al. (2021) found that gendered beliefs predicted digital monitoring and control for women, but not men, and digital direct aggression for men, but not women. While an association between gendered beliefs and direct sexual coercion was found for men and women, adversarial sexual beliefs (i.e., opposite-sex relationships are inherently exploitative) drove this association for women. The current sample was primarily composed of women and their influence may be responsible for a similar pattern emerging in the findings, such that gender norm beliefs were indirectly associated with digital monitoring and control, but not the other two behaviours. Further research is needed to better understand the influence of gender norm beliefs on DDA perpetration.

Despite previous evidence that the predictive ability of the TPB can vary across different forms of violence (e.g., Betts et al., 2011; Doane et al., 2014; Kernsmith, 2005), the current study identified similar patterns across the three forms of DDA. Notably, the effect of attitudes and injunctive norms on intentions to perpetrate were small in magnitude across all three forms, although the relationship between norms and intentions failed to reach statistical significance. While future research may delineate potential differences in the predictive ability of the TPB across genders, it is possible that digital monitoring and control, digital direct aggression, and digital sexual coercion do not represent distinct forms of aggression perpetrated using technology; rather, all related behaviours constitute psychological violence. As previously noted, poly-perpetration and poly-victimization is also common among emerging adults and several of the behaviours have become normative courtship behaviours (Reed et al., 2016). Overall, these findings highlight that addressing digital monitoring and control, digital direct aggression, and digital sexual coercion concurrently may be a beneficial prevention strategy.

Implications

Using a theoretical approach, the aim of present study was identify modifiable factors important in the prevention of DDA perpetration and, thus, may have practical implications for social-cognitive-based prevention efforts. While there are nuanced differences in the factors predicting the three types of DDA, the findings do not suggest that different approaches would be more efficient in preventing digital monitoring and control, digital direct aggression, and digital sexual coercion. Rather, DDA prevention efforts should focus on modifying the personal and social cognitions that support emerging adults' perpetration of DDA. For example, programs should increase negative evaluations

of DDA by addressing the potential seriousness of these actions for both the perpetrator (e.g., legal repercussions) as well as the victim (e.g., adverse mental health outcomes). Further, programs should address the misconception that these behaviours are normative and harmless (Stonard, 2019). Moreover, meta-analytic investigations have shown that prevention programs that include discussions around gender role stereotypes reduce the acceptance of dating violence behaviours (Lee & Wong, 2022). As such, programs should challenge the gender role stereotypes that serve to support digitally facilitated partner violence given its relationship to attitudes and norms, particularly for digital monitoring and control. Finally, pro-active prevention efforts are needed to mitigate the development of DDA-supportive cognitions which may develop through experience. Future efforts are needed to evaluate prevention programs' ability to induce long-term changes in attitudes and perceived norms and, in turn, intentions and behaviours related to DDA perpetration.

While the present findings provide a useful foundation for understanding critical factors which contribute to different forms of DDA, findings also suggest that the TPB may not be an appropriate model to explain DDA perpetration. First, there was a lack of association between perceived behavioural control and intentions for all three behaviours and future studies examining cyber-based violence in young people should adopt the Theory of Reasoned Action as a framework with posits that attitudes and subjective norms predict intentions to perform a behaviour under compete volitional control (Fishbein &Ajzen, 1975).

That said, future studies examining DDA may benefit from moving away from general theories of behaviour altogether. Consistent with other TPB-based studies examining interpersonal conflicts (e.g., Alimoradi et al., 2022; Betts et al., 2011; Hou et

al., 2020; Lin et al., 2021; Kernsmith & Tolman, 2011), a considerable proportion of the variance in intentions to perpetrate was not accounted for by the extended TPB accounted. Further, the TPB components only had small effects on intentions. Given the TPB's simplicity, it fails to capture a range of other important factors relevant in decision-making, such as personality and motivational factors.

Future studies should examine the possible correlates of DDA using other established theories specific to antisocial behaviour and, perhaps more importantly, theories specific to the type of behaviour under examination. For example, the motivation-facilitation model (MFM) of sexual offending may provide a more in-depth explanation of critical motivational and situational factors contributing to the perpetration of digital sexual coercion (Seto, 2019). Influenced by Finkelhor's (1984) preconditions model and Gottfredson and Hirschi's (1990) general theory of crime, the MFM addresses several limitations of the TPB by tapping into psychological processes that specifically direct sex offending behaviour (e.g., paraphilia, high sex drive) along with state (e.g., affect, substance use) and trait (e.g., antisocial personality, attitudes) factors that promote or inhibit action. Further, the MFM allows for individual-environment interactions (e.g., motivated individuals will seek out or create opportunities to commit sexual offenses), which is often neglected in Ajzen's (1991) general model of behaviour.

Strengths, Limitations, and Future Directions

The present study adds to the growing body of literature on DDA and is among the first to adopt a behavioural framework to examine the influence of potentially modifiable factors which may contribute to the intentions to perpetrate. However, the current study is not without limitations. First, the sample was mostly white, female students from

universities in Atlantic Canada and this impairs our ability to generalize the findings to other populations. Following on these narrow demographics, potentially important gender distinctions could not be examined given the current sample. Future research may address these limitations and arrive at a more nuanced understanding of DDA perpetration by examining and comparing the socio-cognitive factors related to intentions to perpetrate DDA for males and females.

Second, self-reported scores for intentions were relatively low for all three behaviours. As previously highlighted, intentions and the other TPB scores may have been influenced by the combination of minor and severe items. Alternatively, response bias and social desirability may have affected responses. As such, further studies may benefit from measuring social desirability and including it as a co-variate.

Third, the present study experienced low rates of retention between wave 1 and wave 2. Retention is a known challenge in longitudinal studies; however, the current rates of attrition were higher than those previously noted in the literature on emerging adults (Hanna et al., 2014). Given the low retention, the present study adopted a cross-sectional approach which means that no causal inferences can be made between the variables used in the study and intentions to perpetrate. Further, it was not possible to examine the relationship between intentions and the actual perpetration of DDA behaviours. Although past studies have established a general relationship between intentions and behaviours (Armitage & Conner, 2001), emerging adults typically underestimate the likelihood that they will engage in dating violence in the future (Kernsmith & Tolman, 2011). Intimate relationships are complex and dynamic with aggression often occurring reactively without much forethought (Branson & March, 2021). Therefore, a longitudinal approach is needed

to elucidate the relationship between intentions and the actual, sustained perpetration of DDA behaviours within intimate relationships. Additionally, future research should consider the motivation and situational context when examining predictors of perpetration.

Fourth, many of the effects detected were small, suggesting that a substantial proportion of intentions to perpetrate DDA remains unexplained. The current research centered on the socio-cognitive aspects of DDA perpetration which may not offer a comprehensive explanation of this phenomena. As such, future research should examine additional explanations of DDA including, but not limited to, personality and environmental systems into the extended model of the TPB or, better yet, adopt a multi-theoretical approach to help further our understanding DDA perpetration.

Additionally, most of the research into DDA has primarily focused on cis-gender and heterosexual samples or, like the present study, failed to distinguish between LGBTQ2+ and non-LGBTQ2+ members. Evidence, however, indicates that individuals in non-heterosexual relationships and well as non-gender conforming individuals experience elevated rates of DDA (e.g., Dank et al., 2014; Zweig et al., 2013). Accordingly, future research should focus on understanding the prevalence and identifying possible risk factors unique to these populations.

Recent research, including the present study, has also highlighted the bidirectional nature of DDA (Ellyson et al., 2021; Reed et al., 2016). There is also emerging evidence that DDA perpetration is mostly reactive in nature, rather than instrumental (Branson & March, 2021). Thus, analyses focused on an individual's behaviour is ignoring much of what promotes violent or aggressive acts within a relationship. Thus, future studies may

benefit from using a dyadic approach to understanding how DDA perpetration unfolds within the dynamics of an intimate relationship.

Study 2: Using an Extended Theory of Planned Behaviour to Explain Help-Seeking Intentions Among Digital Dating Abuse Victims

Digital dating abuse victimization has been linked to poor mental health outcomes, including anxiety, depression, and suicide ideation (e.g., Gracia-Leiva et al., 2020; Hancock et al., 2017; Lindsay et al., 2016). As such, DDA victims' decisions to seek professional mental health support can have important implications for their overall well-being. Help-seeking behaviour, as defined by the World Health Organization (WHO), is "any action or activity carried out by [an individual] who perceives herself/himself as needing personal, psychological, affective assistance or health or social services, with the purpose of meeting this need in a positive way" (Barker et al., 2001, p. 2). Having access to and using supports is considered a protective factor and has been linked to improved psychosocial functioning. However, explorations into formal (e.g., psychologists, school counsellors, helplines) and informal (e.g., friends, family) help-seeking behaviours following dating violence victimization indicates that many victims elect not to seek help from formal sources, with rates of mental health services use below 20% (Fugate et al., 2005; Sabina & Ho, 2014). Although few studies have examined the help-seeking behaviours in the context of DDA, emerging evidence reveals similar help-seeking patterns for DDA victims (Lachman et al., 2019).

Empirical support has been found for the TPB (Ajzen, 1991) as a theoretical framework for identifying predictors in the decision-making process related to help-seeking intentions and behaviours across a variety of contexts, including dating and intimate partner violence (e.g., Anthony-Brown, 2009; Fleming & Resick, 2017). Anthony-

Brown (2009), for example, applied a modified TPB to explain help-seeking behaviour for dating violence and found that attitudes, but not subjective norms, significantly predicted help-seeking intent for university women. Notably, however, the modified TPB framework excluded perceived behavioural control. Fleming and Resick's (2017) examination of the behavioural predictors of help-seeking in female survivors of physical partner violence indicated that the TPB accounted for 11% of the variance in help-seeking intentions, with attitudes and perceived control significantly predicting help-seeking behaviours. Taken together, prior TPB research on help-seeking behaviours in the context of partner violence may serve as a useful framework for illuminating important and unique factors which predict the help-seeking intentions of DDA victims as well.

As previously detailed, attitudes develop from the set of beliefs an individual holds regarding the expected outcome of engaging in a specific behaviour. That is, a positive attitude towards help-seeking will emerge if an individual holds the belief that help-seeking will lead to a positive outcome. Research into the use of formal supports in relation to conventional dating violence indicates that young victims are often motivated to use formal help-seeking services believing that such services will help to ameliorate the abuse and reduce psychological distress (Evans & Feder, 2015). However, explorations into youths' formal and informal help-seeking behaviours following victimization also indicate that many chose not to seek help due to the perceived threat of shame and embarrassment, a fear of retaliation from the aggressor, as well as concerns about how others may react (Edwards et al., 2012; Evans & Feder, 2015; Miller et al., 2010). Priebe et al. (2013) investigated youths' reasons for not disclosing cyber victimization and found that the majority believed the situation was not serious enough or too common to warrant help;

however, several victims also cited fear, embarrassment, and concerns about getting in trouble as reasons. Notably, the majority of youths who elected not to disclose their victimization still experienced distress as a result of online sexual solicitation or online harassment.

Norms are a reflection of an individual's belief that others approve (or disapprove) of the behaviour, as well as the belief that socially important groups are also engaging (or not engaging) in the behaviour (Fishbein & Ajzen, 2010). The use of mental health services, in general, remains highly stigmatized (Wynaden et al., 2014) and a recent study by Lynch and colleagues (2018) found that almost half of the 155,000 college students surveyed identified perceived stigma and endorsed the following statement: "most people would think less of a person who has received mental health treatment" (p. 61). While considerably fewer students held negative views of help-seeking themselves, just the perception of stigma has been shown to negatively influence decisions to seek support from professional mental health services (Vogel et al., 2007, 2008).

Moreover, past studies indicate that individuals who feel they receive less encouragement to utilize mental health services from family, friends, as well as doctors are also less likely to seek formal help (Bayer & Peay, 1997). In the context of DDA victimization, this perceived stigma or lack of encouragement may be amplified given that DDA often perceived as less consequential compared to face-to-face IPV due to the inherent lack of imminent physical violence (Stonard, 2019). Moreover, through interviews with women abused by their dating partners via digital media, Weathers et al. (2019) found a pattern whereby victims' friends and family did not acknowledge victims' experiences as abuse and, in some case, normalized the behaviour. When discussing her attempt at

seeking out support from friends, one victim of DDA was quoted as saying "'I even tried to tell other people about it, and they were like oh we know him, he's not that creepy'" (p. 337). Moreover, there is a perception that cyber-based aggression can be quickly removed by deleting the contact, exiting an app, or turning off the computer, thus negating the need to seek help from formal sources (Douglas et al., 2019; Levy, 2014). Together, these broad social attitudes may shape an individual's cognition that others would not and are not using mental health serves in response to DDA victimization

And although the decision to use mental health services may seem ostensibly volitional, several psychological and contextual factors related to accessing such services may impact intentions and prevent individuals from seeking professional services. To the author's knowledge, however, no study has examined DDA victims' confidence or perceived ease of using mental health services. The limited studies investigating the validity of the TPB model on help-seeking behaviours in the context of conventional partner violence have also failed to examine victims' confidence or perceived ease. In Fleming and Resick's (2017) study of help-seeking among physically abused women, perceived behavioural control was operationalized using the Causal Dimension Scale, a measure of how victims perceived causes to the violence experienced. As such, Fleming and Resick (2017) assessed a victim's perception of control over future incidences of partner violence as a predictor of help-seeking, rather than their perceived capacity to access and use mental health services. Studies, however, examining the use of mental health services outside the context of partner violence have identified perceived behavioural control as strong predictor of help-seeking intentions and behaviours (e.g., Bohon et al., 2016; Mak & Davis, 2014; Mo & Mak, 2009; Zorrilla et al., 2019). In two

independent studies examining of young adults' help-seeking behaviours for depression, Bohon et al. (2016) and Zorrilla et al. (2019) found evidence that perceived behavioural control was the second strongest predictor of help-seeking intentions with attitudes emerging as the most robust predictor.

Extending the Theory of Planned Behaviour

Beyond the TPB, several factors have been identified as key predictors of help-seeking behaviours and warrant further exploration as possible distal determinants of intentions and help-seeking behaviours in victims of DDA.

Perceived Barriers. Not directly captured by perceived behavioural control as defined by Ajzen (2002), several contextual factors – perceived or actual – discouraging victims from utilizing formal supports have been identified in the broader partner violence literature. Commonly implicated barriers include monetary constrains, a lack of insurance, as well as a lack of time (Fugate et al., 2005). In the absence of such resources and opportunities, the likelihood of seeking help is relatively low regardless of need. Past TPB studies examining the role of perceived barriers on formal help-seeking behaviour for mental health concerns have found that perceived barriers are weakly associated with help-seeking intentions or behaviours (e.g., Mo & Mak, 2009; Zorrilla et al., 2019). Together, findings suggest that perceived barriers, such as money and time constraints, hinder a victim's ability to seek help; however, the weak association between perceived barriers, intentions, and behaviour suggests that perceived barriers may be a distal determinant of intentions and behaviour, exerting its influence through perceived behavioural control (Mo & Mak, 2009).

Chronicity and Fear. Characteristics of the violence itself has been linked to help-seeking behaviours. For instance, recent studies suggest that the chronicity, or duration, of cyber-based violence is a predictor of help-seeking behaviour (Fissel, 2018; Pereira et al., 2016). Fissel (2018), for instance, found that victims who experienced at least one month to less than a year of cyberstalking were 2.5 times more likely to engage in professional help-seeking behaviours. Interestingly, however, victimization lasting less than one month or victimization lasting over a year was not associated with help-seeking. While shorter victimization periods may not be perceived as serious, Fissel (2018) argued that longer periods of victimization may be associated with feelings of helplessness and, as such, victims may not perceive themselves as capable of changing their situation.

Help-seeking has been linked to the subjective level of fear felt by the victims of cyberstalking and conventional partner violence (e.g., Demers et al., 2018; Pereira et al., 2016; Wiesen-Martin, 2017). Although most young victims of cyberstalking reported low levels of fear, the severity of the behaviours and the level of fear felt by the victim has been positively associated with help-seeking behaviours (Demers et al., 2018; Fissel, 2018). Higher levels of fear resulting from partner violence predicted the use of hotlines, victim services, and law enforcement (Wiesen-Martin, 2017), with the odds of college students disclosing conventional partner violence increasing by almost 75% with each incremental increase in the level of fear (Demer et al., 2018). These characteristics, chronicity and fear, may influence the anticipated benefits and risks associated with help-seeking behaviours. As such, fear and chronicity are both expected to positively influence intentions to seek help from mental health professional via attitudes. Following on Fissel's (2018) findings, however, a higher chronicity (i.e., one year or more) of DDA is expected to further affect a

victim's perceived behavioural control and, in turn, negatively influence intentions to seek help.

Gendered Norm Beliefs. Gender has emerged as an important moderator affecting the likelihood of help-seeking with men utilizing mental health services less frequently than women (Cho et al., 2020; Vessey & Howard, 1993); however, past work on help-seeking behaviours of partner violence victims has largely centered on women (Fleming & Resick, 2017). Previous findings indicate that women, in general, hold more positive attitudes towards help-seeking (e.g., Nam et al., 2010) and report more positive control beliefs than men (Mak & Davis, 2014). In relation to dating violence, men have been found to be 73.4% less likely to seek help compared to women, despite experiencing similar rates of partner abuse (Ameral et al., 2020). This observed gender gap in help-seeking behaviour has been largely attributed to societal expectations surrounding gendered norm beliefs (Good et al., 1989; Lynch et al., 2018). Seeking help is often found to be in conflict with stereotypical views that men should be emotionally muted, not exhibit weakness and be self-reliant. As such, societal expectations regarding gender roles likely contribute to negative beliefs concerning the outcomes associated help-seeking behaviours – embarrassment, shame, and disapproval by peers (Martin et al., 2012). Young men often describe hesitation in seeking out formal support in the context of dating violence, considering it a threat to their masculinity (Martin et al., 2012). Together, it is believed that stereotypical gender norms will exert an indirect influence on help-seeking intentions to via attitudes; however, the endorsement of gender norm beliefs will have a negative influence on the help-seeking behaviour of men, while the endorsement of gender norm beliefs will positively influence the help-seeking behaviours of women.

Past use of services. A review of the literature suggests that the role of past behaviour has not been directly tested in a population of DDA victims; however, the past use of mental health services has been shown to be a direct, albeit weak, predictor of intentions to seek support from a mental health professional for various mental health concerns (MacKenzie et al., 2006; Zorrilla et al., 2019). Past research has examined past use of services as a direct antecedent of intentions. However, a positive experience with the past use of services is likely to exert an influence of intentions through the TPB variables by producing more favourable attitudes, increasing subjective norms, and increasing one's perceived control over seeking help again in the future for the predicted behaviour.

Study 2

Research into the help-seeking behaviours of dating violence victims, including those who experience DDA, suggest that professional mental health services are underutilized (Lachman et al., 2019). The present study was aimed at elucidating modifiable psychological and social factors that influence the help-seeking intentions of emerging adults who have experienced DDA victimization. More specifically, the study examined the predictive ability of an extended model of TPB. Beyond the TPB constructs, several factors have been identified as key predictors of help-seeking behaviours and warrant further exploration as antecedents to help-seeking intentions of victims of DDA. Thus, in addition to the central TPB constructs, the extended model also examined possible direct and distal predictors of intentions, including perceived barriers to mental health, the endorsement of gendered norm beliefs, the chronicity and fear associated with DDA experienced previously, and the past use of mental health services. The following hypotheses were investigated (see Figure 6):

H7: Attitudes toward help-seeking, subjective norms, and perceived behavioural control, independently and in combination, were expected to positively predict emerging adults' behavioural intentions to seek help from a mental health professional following DDA victimization.

H8: Fear, chronicity, gender norm beliefs, and past use of services were expected to positively predict emerging adults' behavioural intentions to seek help from a mental health professional following DDA victimization.

H9: Perceived barriers to mental health services was expected to negatively predict emerging adults' behavioural intentions to seek help from a mental health professional following DDA victimization.

H10a: The effect of subjective fear on help-seeking intentions was expected to be mediated by attitudes toward help-seeking.

H10b: The effect of chronicity on help-seeking intentions was expected to be mediated by attitudes toward help-seeking.

H10c: The effect of gender norm beliefs on help-seeking intentions was expected to be mediated by the TPB variables.

H10d: The effect of perceived barriers to mental health services on help-seeking intentions were expected to be mediated by perceived behavioural control.

H10e: The effect of past use of mental health services following DDA on help-seeking intentions was expected to be mediated by the TPB variables.

H11: Gender was expected to moderate the association between the endorsement of gender stereotype beliefs and the TPB variables. More specifically, higher endorsement of gender

norms was expected to have a negative effect on attitudes, subjective norms, and perceived behavioural control for men and a positive effect for women.

Method

Participants

Participants for study 2 were recruited during study 1 (wave 1). Of the 408 participants who completed study 1, 341 reported being a victim of at least one form of DDA in the past. Data from 10 participants were removed after they failed to complete the related help-seeking questionnaires. The final sample comprised 331 participants. Of the 331 participants, 86.1% were recruited from one of two Atlantic Canadian universities and the remaining 13.9% were recruited from social media. The sample had a mean age of 20.40 (*SD* = 1.95). Most identified as female (81.9%) and as non-Hispanic White (77.3%). Most identified as heterosexual (68.0%) and over half of the participants were in a current a dating relationship (55.6%) or were married or common law (6.6%).

Power analysis. As mentioned, a sample of 200 has been recommended as a minimum sample for models of moderate complexity (Boomsma, 1983) or a minimum of 10 participants per estimated parameter (Bentler & Chou, 1987). According to these guidelines and an extended model with a maximum of 66 estimated parameters, a sample between 200 and 660 cases would be recommended. The final sample of 331 meets the guidelines for the minimum sample size; however, it is roughly half of the upper range. Therefore, it should be noted that the sample may not represent sufficient power. And similar to study 1, the small male sample (n = 60) did not meet the power guidelines set by Boomsma (1983) or Bentler and Chou (1987). As such, hypotheses requiring gender-based investigations using moderations (i.e., H11) were also dropped from the main analyses.

Measures

Demographics (See Appendix O). Readers are referred to methodology section of Study 1 for information about questions related to demographics (see Page 25).

Past victimization. Reed and colleague's (2016) Digital Dating Abuse – Victimization subscale was used to identify past victims of DDA. Readers are referred to methodology section of Study 1 for further information about the past victimization measure (see Page 26).

Fear. The level of fear experienced from past DDA victimization was measured using a single author-defined item. Participants rated their agreement with the following statement on a seven-point scale (1 = *strongly disagree*, 7 = *strongly agree*): "I was fearful or afraid because of what my dating partner did to me."

Chronicity. An author-defined item based on Fissel (2018) measured the chronicity of past DDA victimization. Participants indicated how long the DDA behaviours occurred: *less than one month, at least one month but less than a year*, or *over a year*.

Endorsement of gender role beliefs. Readers are referred to methodology section of Study 1 for information about the measure related to the endorsement of gender stereotypical beliefs (See Page 29).

Past help seeking behaviour. Participants indicated their actual past use of ten different formal (i.e., mental health services, doctor/GP, police) and informal (i.e., friends, parents, siblings, extended family, partner's family, religious affiliations, social media/Internet service providers) supports in response to past DDA victimization. The response options were binary (*yes*/*no*).

Theory of Planned Behaviour variables. The TPB variables (i.e., attitudes towards help-seeking, subjective norms, and perceived behavioural control) were evaluated

using a modified questionnaire developed to assess help-seeking via mental health services (Mo & Mak, 2009). The original questionnaire focused on help-seeking in general; however, for the purposes of the present study, the items were modified to address help-seeking within the context of DDA.

Attitudes towards help-seeking. Attitudes towards mental health services were assessed using one item measured across five response scales: "For me to seek mental health services following digital dating abuse is": very useless (1) to very useful (7); very worthless (1) to very worthwhile (7); very bad (1) to very good (7); very foolish (1) to very wise (7); and very rare (1) to very common (7). All response scales were measured on a 7-point scale with higher scores indicating more favorable attitudes towards help seeking for a specific source. The attitudes scale has previously demonstrated adequate internal reliability (= .84; Mo & Mak, 2009). Good internal consistency (= .89) was demonstrated for the attitudes scale in the current study.

Subjective norms. Subjective norms were measured using three items. The items, such as "Most people who are important to me would seek mental health service if they experienced digital dating abuse", were measured on a seven-point scale ranging from (1) strongly disagree to (7) strongly agree. The subjective norms scale has previously yielded good internal reliability (= .85; Mo & Mak, 2009); however, in the current study, the internal consistency was poor (= .37). Given the poor reliability, the subjective norms measure was not included in further analyses.

Perceived behavioural control. Perceived behavioural control was measured using the three-item scale (e.g., I think I can decide whether to seek mental health service or not) from Mo and Mak (2009). Each item was measured on a seven-point scale ranging from

(1) strongly disagree to (7) strongly agree. Higher scores indicated higher levels of perceived behavioural control over help-seeking intentions and behaviours. The perceived behavioural control scale has previously demonstrated adequate internal reliability (Cronbach's □ = .77; Mo & Mak, 2009). In the current study, the scale yielded adequate internal consistency (□ = .71).

***Perceived Barriers*.** Perceived barriers to seeking mental health services were measured using a six-item scale developed by Mo and Mak (2009). Items, such as "I think I can get the information about mental health service easily" and "I can't afford the money needed for mental health service" were measured on a seven-point scale ranging from (1) *strongly disagree* to (7) *strongly agree*. Higher average scores reflected greater levels of perceived barriers to mental health services. The perceived barriers scale has demonstrated high internal reliability (Cronbach's □ = .99; Mo & Mak, 2009). In the current study, the scale demonstrated adequate internal consistency (□ = .78).

Help-seeking intentions. Behavioural intentions to seek help from mental health services was measured using a single-item from the General Help-Seeking Questionnaire (GHSQ; Wilson et al., 2005). Participants were asked to indicate the future likelihood of seeking support from mental health services following DDA victimization on a seven-point scale, ranging from *extremely unlikely* (1) to *extremely likely* (7). In addition to mental health services, participants also indicated the future likelihood of seeking support from the following sources: doctor/GP, police, friends, parents, siblings, extended family, partner's family, religious affiliations, social media/Internet service providers. For the purposes of the current study, however, only intentions to seek help from mental help services was of interest and included in the analyses.

Procedure

Participants, recruited from two Atlantic Canadian universities and social media (i.e., Reddit) were invited to participate in a study on perceptions and experiences of DDA. The methods for study 2 used the same procedure as study 1 and readers are referred to the method section for study 1 for further information about procedure (See Page 29). Participants who indicated that they had been a victim of at least one incident of DDA victimization on the Reed and colleagues (2016) instrument (i.e., selected □1 for any of the 18 victimization items) during study 1/wave 1 were also asked to complete several help-seeking related measures. Victims were first asked to rate their fear and the duration of the behaviours and report their past use of mental health services before completing the measures related to the TPB and help-seeking intentions.

Data Analysis Plan

Similar to study 1, exploratory analyses were first conducted to examine the composition of the samples recruited through two local universities and social media. Next, correlations were calculated to assess the relationships between variables. A path analysis was then performed to test the hypotheses by examining the predictive effects of the TPB variables and hypothesized antecedents on intentions to seek help from a mental health profession following DDA victimization.

To investigate the utility of an extended TPB model and test the mediated relationships between the hypothesized antecedents and help-seeking intentions, fear, chronicity, gender norms, perceived barriers, and past use of services were added as antecedents of the TPB variables. Each antecedent was modeled as a predictor of attitudes, perceived behavioural control and intentions. Attitudes and perceived behavioural control

were then modeled as predictors of intentions. As previously mentioned, subjective norms were not included in the analyses due to low internal consistency. Given the relationship between TPB variables, error terms were allowed to covary for attitudes, injunctive norms, descriptive norms, and perceived behavioural control. Age was controlled for in the model including it as a predictor of all endogenous variables. Mediation effects were tested using the bootstrapping method as recommended by Preacher and Hayes (2004). The total, direct and indirect effects of predictor variables on help-seeking intentions were examined using percentile bootstrapping based on 5,000 bootstrapped samples. All analyses were performed in SPSS AMOS v.28.0.0. Maximum likelihood (ML) estimation was used to estimate parameters for all models. Model fit statistics are not reported as all models were fully saturated (i.e., $df = 0$). As discussed in study 1, a Bonferroni correction was used with significance evaluated at .05/4 = .013 for main analyses.

Results

Exploratory Analyses

Demographic data for the university-recruited and social media-recruited samples are provided in Table 9. Analyses revealed that the two samples differed in terms of demographics. Specifically, a Welch's *t*-test revealed that the two recruitment samples significantly differed by age and Fisher's Exact Tests revealed that two recruitment samples significantly differed in terms of gender, country of residence, level of education, and sexual orientation.

A series of *t*-tests were used to determine if the samples differed in key study variables (see Table 10). Results indicated that the social media-recruited sample had, on average, higher rates of subjective fear, higher endorsement on gender norm beliefs, higher use of mental health services in the past, and higher intentions to use mental health services

in the future than the university-recruited sample. Given these differences, analyses were conducted to compare models for the university-recruited sample and the combined sample (i.e., university plus social media-recruited participants). Results indicated that the combined sample models did not diverge from the university-recruited sample models (See Appendix P for university-only model results). Therefore, the models for the combined sample were retained to preserve power.

Preliminary Data Screening and Assumption Checks

Prior to data analyses, assumptions were checked using regression assumptions (Meyers et al., 2017). An analysis of missing values revealed a low number of cases with missing data per variable (i.e., <3%). Missing values were replaced using mean imputation. Univariate outliers were detected for perceived behavioural control (n = 5) and gender norms (n = 2). While these cases were considered outliers, all scores fell within the appropriate scales. No univariate outliers were detected for fear, chronicity, past use of services, attitudes towards help-seeking, or perceived barriers to help-seeking. Multivariate outliers and influential cases were assessed using Mahalanobis' distance (critical value of $\chi^2(8) = 26.14$, $p < .001$) and Cook's Distance (values exceeding one). Four multivariate outliers were detected; however, no influential cases were detected.

As mentioned previously, maximum likelihood estimation is fairly robust to violations of normality with acceptable values of skewness equal to ±3 and acceptable kurtosis values equal to ±10. Based on this guidance, three variables (fear, gender norms, and perceived behavioural control) violated the assumption of normality; however, all cases were retained for analyses to preserve power. Given the violations, both Pearson and

Spearman's *rho* correlations are reported. Moreover, model parameters were estimated using a percentile bootstrap based on 5,000 bootstrapped samples.

A correlation matrix was used to assess multicollinearity. Correlations between predictor variables did not exceed an absolute value of .8, indicating there were no issues with multicollinearity. Further, tolerance values were all greater than .10 and VIF values did not exceed 5 further indicating that there were no issues with multicollinearity or homoscedasticity.

Descriptive Statistics

Means, standard deviations, range of scores, and Cronbach's alphas are provided in Table 11. In terms of DDA experiences, participants in the current study reported that low levels of fear accompanied the DDA behaviours. For chronicity, 42.6% of the participants reported that the DDA behaviour lasted less than a month, 41.4% reported that the behaviour lasted less than a year, and a minority (16.0%) reported the behaviours persisted for longer than a year. Although most participants (79.5%) had not previously sought support from a mental health professional following DDA victimization, the emerging adults in the sample held relatively high attitudes towards help-seeking. Although the sample reported that there were moderate barriers to help-seeking, perceived behavioural control for help-seeking was high.

Bivariate correlations for antecedents and the TPB constructs are presented in Table 12. Among emerging adults in the current study, fear correlated significantly and positively with attitudes towards help-seeking, and intentions to seek help from a mental health professional following future victimization. Fear was also negatively associated with perceived behavioural control. Chronicity correlated positively and significantly with

intentions to seek help. Gender norms were not significantly associated with any TPB construct or intentions to seek help. Past use of mental health services was positively and significantly associated with attitudes towards help-seeking and had a moderate-to-strong correlation with intentions to seek help in the future. Past use was negatively associated with perceived behavioural control. Perceived barriers had a moderate, negative association with perceived behavioural control but was not significantly associated with intentions. Attitudes towards help-seeking were significantly and positively associated with intentions to seek help. No significant associations were found between perceived behavioural control and intentions to use mental health services following DDA victimization.

Evaluation of the Extended Theory of Planned Behaviour

Direct effects are presented in Table 13 and Figure 7. The overall extended model accounted for 40.6% of the variance in intentions to seek help from a mental health professional following DDA victimization. Attitudes had significant and positive effects on intentions, accounting for 6% of the total effect on intentions. Perceived behavioural control did not have a unique effect on intentions to seek-help.

As shown in Table 14, the total effect of fear on intentions was significant and positive, such that higher levels of subjective fear from DDA victimization was associated with higher intentions to seek help from a mental health professional. Fear had a significant direct effect on the hypothesized mediator of attitudes. In addition, fear had a significant indirect effect on intentions, indicating that the predictive effect of fear on intentions was partially mediated by attitudes.

Past use of services also had a significant total and direct effect on intentions indicating that past use of mental health services to deal with DDA victimization was associated with future intentions to seek help from a mental health professional. The combined indirect effect of past use of service on intentions was non-significant, indicating no mediation when Bonferroni's Correction was applied; however, the direct effect of past use of services on attitudes and the indirect effect via attitudes were significant at the $p < .05$ level.

Chronicity, gender norm beliefs, and perceived barriers did not have significant total, indirect or direct effects on intentions to seek help from a mental health professional following DDA victimization.

Discussion

As demonstrated by the tragic death of Boston College student Alexander Urtula, digital dating abuse victimization is associated with poor mental health outcomes (e.g., Gracia-Leiva et al., 2020; Hancock et al., 2017). Accordingly, the primary aim of the current study was to empirically examine the socio-cognitive factors which promote emerging adults' intentions to seek help from a mental health professional following DDA victimization using an extended TPB. Results revealed that attitudes were significantly associated with intentions. The inclusion of antecedents increased the predictive power of the model, with attitudes partially mediating the association between fear and help-seeking intentions.

Emerging adults in the study reported experiencing low levels of subjective fear, which may reflect the types of behaviours experienced. As highlighted in study 1, digital monitoring and control is the most prevalent form of DDA and is often considered

normative courtship behaviour unless coupled with other aggressive behaviours (Reed et al., 2016). Further, consistent with prior studies (Lachman et al., 2019), the present findings suggest that few emerging adults have elected to seek help from a mental health professional for DDA victimization.

The purpose of the present research was to assess the utility of an extended TPB model and identify socio-cognitive factors that contribute to emerging adults' intentions to seek help from a mental health professional following DDA victimization. Findings indicate the extended model partially explains help-seeking intentions. Of the TPB components modeled, attitudes were found to uniquely predict intentions. Specifically, results indicate that attitudes towards help-seeking were associated with higher intentions to seek support from a mental health professional in the context of DDA. Notably, the current study found no support for perceived behavioural control as a predictor of help-seeking intentions.

These findings deviate from the TPB, as well as past literature applying the TPB to the help-seeking behaviours of conventional partner violence. Fleming and Resnick (2017), for instance, have found previous support for perceived behavioural control as a predictor of victims' help-seeking behaviour. Emerging adults in the present study had, on average, high perceived behavioural control over their ability to seek help from a mental health professional. This may indicate that emerging adults, particularly university students with access to counselling centres, have complete volitional control over their help-seeking behaviours. Alternatively, perceived behavioural control may exert a greater influence on help-seeking behaviour compared to intentions, particularly in the presence of prohibitive barriers (Ajzen, 1991).

The role of chronicity, subjective fear, and past use of services on intentions to seek help were also examined in the present study. Partially consistent with expectations, subjective fear, but not chronicity, influenced intentions to seek help from a mental health professional. This finding suggests that an emerging adult's intention to seek help is driven by fear and not chronicity which may reflect the type of behaviours captured by DDA. Some behaviours, such as digital sexual coercion, need to occur only once to inflict devastating effects on a victim (Bates, 2016; Drouin et al., 2015), whereas digital monitoring and control behaviours may occur frequently and persistently over a period of time; however, emerging adults are increasingly viewing these behaviours as normative and do not consider them threatening without accompanying aggressions regardless of the duration (Reed et al., 2016).

Further, attitudes partially mediated the association between fear and intentions. That is, emerging adults who experienced more subjective fear during previous experiences of DDA held more positive attitudes towards help-seeking and were more likely to intend to seek help from a mental health professional should they re-experience DDA victimization in the future. Subjective fear was found to influence intentions to seek help, above and beyond what is accounted for by attitudes, suggesting that the TPB may not fully explain help-seeking intentions and that other variables not included in the model mediate this association. While additional research is needed to assess the full TPB, including subjective norms, future research may also benefit from examining additional mediating variables, such as symptomology (i.e., distress, anxiety) and/or distress tolerance (MacKenzie et al., 2006).

Prior studies have demonstrated that men are less likely than women to seek help, attributing the underutilization to societal expectations that men remain stoic and emotionally muted even when facing adversity (Good et al., 1989; Lynch et al., 2018). This stoicism appears even more pronounced when men are the victim of partner violence. Thus, it was expected that gender norm beliefs would play an important role in men's intentions to seek help for DDA victimization. Overall, gender norm beliefs failed to predict intentions, and this may be a result of the proportionally small sample of men used in the current study compared to women. Further, gender-specific analyses were not possible due the small sample. More research is needed to understand how gender roles influence help-seeking behaviour with larger samples of men.

In accordance with prior studies (MacKenzie et al., 2006; Zorrilla et al., 2019), the past use of mental health services in the context of DDA victimization positively contributed to intentions to seek help for future circumstances involving DDA. In contrast to expectations, the past use of services was not found to shape attitudes towards help-seeking or the perceived ability to carry out the behaviour. Rather, past use of services was found to directly influence intentions. Few emerging adults in the present sample had previously used services in the past and, as noted previously, the mediating effect of attitudes was significant at the $p < .05$ level; however, when Bonferroni corrections were applied, the effect was non-significant. These results indicate that further research is needed to better understand the mechanism between past use of services and intentions to use mental health services in the future using an ample sample that has previously used these services.

Implications

Motivated by a lack of theoretically based research, the current study examined the low use of mental health services by victims of DDA. Although results from the current study add to our understanding of help-seeking in the context of DDA, findings only partially support the use of the TPB as a framework for understanding the help-seeking intentions by DDA victims. Attitudes were the only identified predictor and they account for a small proportion of the variance in intentions. Notably, subjective norms were excluded from the current analyses and, while research is needed to test the full TPB, subjective norms are consistently shown to be the weakest predictor of behaviour among the core TPB constructs (Armitage & Conner, 2001). Thus, it is unlikely that the inclusion of subjective norms would have explained a considerable proportion of help-seeking behaviour above and beyond that of attitudes.

Adopting a multi-theoretical approach may provide a more holistic understanding of the factors that promote or hinder help-seeking behaviours of victims. Previous studies, for example, have demonstrated support for the Andersen model of health service utilization in explaining victims' help-seeking behaviours following physical partner violence (Choi et al., 2021; Fleming & Resick, 2017). The Andersen model accounts for demographic and need-based variables, such as symptomology, while the TPB focuses on the cognitive factors related to behaviour (Ajzen, 1991; Andersen, 1968). When combined with the TPB, Fleming and Resick (2017) demonstrated that an integrated model accounted for twice as much variance as each model did separately. As such, future research should investigate a multi-theoretical approach for DDA help-seeking.

Findings may also have important implications in dating violence interventions. Given the increasing evidence that emerging adults experience adverse outcomes following

DDA victimization (Gracia-Leiva et al., 2020; Hancock et al., 2017), dating violence intervention efforts should address the reluctance to seek help from mental health services for cyber-based violence. Specifically, efforts should foster more positive attitudes towards help-seeking for cyber-based aggression, both broadly and in the context of DDA victimization. Given the high prevalence of DDA on university campuses, proactive outreach efforts should be undertaken. Past studies have demonstrated that minimal outreach, such as brochures, is effective at improving attitudes and reducing stigma towards counselling (Hammer & Vogel, 2010). As such, including information about the university counselling services and options for victims of DDA in prospective students' informational packets may improve overall intentions to seek help from formal supports following future incidences of DDA victimization. Researchers should explore this as a possibility for increasing emerging adults' intentions to seek help, as well as demonstrate its effectiveness at increasing help-seeking behaviour for DDA victimization.

Strengths, Limitations, and Future Directions

As the first study to examine the help-seeking intentions of DDA victims using the TPB, the present study adds to the limited theoretical research exploring help-seeking in the context of dating violence. It is also the first study to examine how the characteristics of the violence and gender norm beliefs influence help-seeking intentions. These strengths notwithstanding, it is important to recognize the limitations of this study. Similar to the first study, the current sample was composed primarily of white female students from universities in Atlantic Canada. These narrow demographic parameters may impair the generalizability of our findings. Moreover, the small male sample prevented gender-based investigations into the socio-cognitive factors that predict help-seeking intentions. Given

that previous studies have highlighted the role of gender in help-seeking behaviour (e.g., Cho et al., 2020; Vessey & Howard, 1993), future research should explore the possibility of differential predictors for men and women, as well as the interaction between gender norm beliefs and gender on the TPB variables and intentions to seek help.

Second, the study may have been underpowered resulting from a smaller than recommended sample size based on the complexities of the model assessed (Bentler & Chou, 1987). Given that the current study was underpowered, it is possible that potential effects of interest were not detected. Although the current study found support for several of the hypotheses, further exploration and replication of these effects using a sufficiently powered sample is encouraged.

Third, the current study used a cross-sectional design and causal inferences cannot be made between study variables. Furthermore, the study did not assess the relationship between intentions and behavioural outcomes. While the relationship between help-seeking intentions and behaviours have been established in the literature (e.g., Tomczyk et al., 2020), perceived behavioural control is most likely to have an influence on help-seeking behaviour, not intentions, in the presence of prohibitive barriers (Ajzen, 1991). Accordingly, before any conclusions about the influence of perceived behavioural control on help-seeking behaviours can be established, a longitudinal study examining the relationship between perceived barriers, the TPB constructs, intensions, *and* behaviour is needed.

A fourth limitation of the present study is the low reliability coefficients of the three-item scale used to measure subjective norms. Although shorter scales are known to have lower validity, a lower Cronbach alpha's may also indicate that some items are not

representative of the behaviour in question or that they are not relevant to the current sample (Tavakol & Dennick, 2011). Regardless, the low reliability meant that we were unable to explore subjective norms as an explanatory factor of help-seeking behaviour.

Finally, while the extended TPB accounted for a considerable portion of variance in intentions, other unexplored factors may contribute to help-seeking intentions in the context of DDA. For example, attitudes about DDA and the harms associated with cyber violence may further explain attitudes towards help-seeking in a DDA context as well as help-seeking intentions.

The current study was a step towards understanding the help-seeking behaviours of DDA victims; however, there remains a scarcity of studies examining the help-seeking behaviours of victims using a theoretical approach despite the prevalence of conventional and digital partner violence. Building on the current study, future studies should examine intentions to seek help following victimization of the different forms of DDA. Evidence suggests that digital monitoring and control behaviours are becoming increasingly viewed as normative courtship behaviour and, in the absence of more aggressive behaviours, may not be perceived as problematic (Reed et al., 2016; Stonard, 2017), thus, reducing the likelihood that help-seeking would be advantageous.

Future studies may also benefit from examining the factors that influence help-seeking behaviours of adolescent and adult victims. The current study focused primarily on university students who have access to counselling centres. Comparatively, adolescents and adults may not have similar access to mental health services. Moreover, adolescents may also fear repercussions from parents, such as losing internet or cell phone privileges, that emerging adults do not have to contend with (Priebe et al., 2013).

General Discussion

The present studies used a behavioural framework, the Theory of Planned Behaviour, to help explain two emerging issues related to DDA: (i) the perpetration of DDA and (ii) the help-seeking intentions of DDA victims. Together, these studies add to the burgeoning body of literature on cyber-based aggressions, particularly that which focuses on interpersonal violence. Findings indicate that socio-cognitive factors, namely attitudes and to a lesser extent injunctive norms, play a role in emerging adults' behaviours related to DDA perpetration and victimization.

Practical Implications

By understanding the factors that drive behaviour, it is envisioned that the research findings presented here will aid the work of professionals – researchers, policymakers, and practitioners – when developing DDA-based prevention and intervention strategies. Findings suggest that the effectiveness of interventions might be enhanced by addressing perpetration-supportive cognitions. Specifically, attitudes and norms should be considered as critical factors when designing DDA prevention and intervention programs. Additionally, the current findings emphasize the contribution of past perpetration and past victimization on future DDA behaviour. Accordingly, programs may be most effective if delivered to youth before they begin dating (Kernsmith & Tolman, 2011). Furthermore, programs should emphasize victims' prosocial options for dealing with distress or violence in a relationship, such as speaking with a mental health professional or law enforcement, rather than resorting to reactive violence themselves.

While the current findings identified modifiable factors related to circumventing DDA-related harms, future research is needed to better understand how prevention and

intervention strategies can best target attitudes and perceptions of norms concerning DDA. Drawing on previous research on dating and intimate partner violence prevention (e.g., Campbell & Manganello, 2006), public education campaigns aimed at changing public attitudes and norms may be a proactive way to manage the growing normalization of DDA. Specifically, social media has demonstrated promise as a tool for changing users' behaviour (Freeman et al., 2015) and may be a particularly appropriate way for targeting DDA perpetrators and victims. However, additional evaluation work is needed to assess whether changing attitudes and perceived norms can reduce DDA perpetration among emerging adults and promote help-seeking behaviour in cases involving victimization.

Theoretical and Research Implications

The findings add to the literature on the TPB and its utility in predicting behaviour. The current study found that the TPB components failed to explain a substantial portion of variance in intentions, for both perpetration and help-seeking. Furthermore, some antecedents, namely past behaviour (perpetration and past use of services) and fear, were only partially mediated by the core TPB components, suggesting that that the TPB and its constructs are insufficient for explaining cyber-based perpetration and help-seeking behaviours. These findings are not novel to the current study. Rather, critics of the TPB have long argued that the theory has limited predictability (Sniehotta et al., 2014) with meta analyses and other reviews consistently demonstrating that the TPB components do not account for most of the variability in intentions and behaviours (Armitage & Conner, 2001; Rivis & Sheeran, 2003).

Accordingly, despite being a well-adopted theory for explaining behaviour, the TPB may be insufficient for explaining the complexities associated with cyber-based perpetration

and help-seeking behaviours. An extended theory which incorporates *direct* antecedents of intentions or behaviour may be more suitable for explaining DDA-related behaviours. Similarly, adopting a multi-theoretical approach to understanding DDA perpetration and help-seeking behaviours may help to account for variance not accounted for by the TPB components. Alternatively, future studies should explore DDA perpetration and help-seeking within a non-TPB framework.

Conclusion

Given its prevalence among emerging adults and associated harms, DDA remains an important empirical topic for exploration. The present study adds to a growing body of literature by applying a theoretical framework to DDA and suggests that related behaviours can be, at least partially, explained using the TPB. Although further investigations are needed to build upon the foundation laid in this study, prevention and intervention efforts may benefit from challenging prevailing attitudes and social norms towards DDA, as well as those towards help-seeking for those victimized. In doing so, we may be able to intervene and prevent tragic events, like that of You and Urtula, from unfolding.

References

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*(2), 179–211. https://doi.org/10.1016/0749-5978(91)90020-T

Ajzen, I. (2002). Perceived behavioral control, self-efficacy, locus of control, and the theory of planned behavior. *Journal of Applied Social Psychology*, *32*(4), 665–683. https://doi.org/10.1111/j.1559-1816.2002.tb00236.x

Ajzen, I. (2006). *Constructing a Theory of Planned Behavior Questionnaire*. https://people.umass.edu/aizen/pdf/tpb.measurement.pdf

Ajzen, I. (2011). The theory of planned behaviour: Reactions and reflections. *Psychology & Health*, *26*(9), 1113-1127. https://doi.org/10.1080/08870446.2011.613995

Alimoradi, K., Davarpanah, S.H., Taymoori, P., Ostovar, A. and Rahmani, K. (2022). Predicting physical and verbal aggression perpetration among teenage boys: an application of the theory of planned behavior. *International Journal of Human Rights in Healthcare*, 15(3), 276-287. https://doi.org/10.1108/IJHRH-12-2020-0110

Ameral, V., Palm Reed, K. M., & Hines, D. A. (2020). An analysis of help-seeking patterns among college student victims of sexual assault, dating violence, and stalking. *Journal of Interpersonal Violence*, *35*(23–24), 5311–5335. https://doi.org/10.1177/0886260517721169

Anderson, M., Vodels, E.A., & Turner, E. (2020, February 6). The virtues and downsides of online dating. https://www.pewresearch.org/internet/2020/02/06/the-virtues-and-downsides-of-online-dating/

Anthony-Brown, K. (2009). *The influence of family violence and attitudes toward help-seeking on adolescents' intent to seek help for intimate partner aggression*

[Unpublished Master's thesis]. University of Windsor. https://scholar.uwindsor.ca/etd/22

Armitage, C. J., & Conner, M. (2001). Efficacy of the theory of planned behaviour: A meta-analytic review. *British Journal of Social Psychology, 40*, 471-499. https://doi.org/10.1348/014466601164939

Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist, 55*(5), 469–480. https://doi.org/10.1037/0003-066X.55.5.469

Baker, C., & Carreño, P.K. (2016). Understanding the role of technology in adolescent dating and dating violence. *Journal of Child and Family Studies, 25*, 308-320. https://doi.org/10.1007/s10826-015-0196-5

Barker, G., Nascimento, M., Deva, M.P., Talukder, K., Kirumira, E., & Kanaan, N. (2001). Adolescents, social support and help-seeking behaviour: An international literature review and programme consultation with recommendations for action. World Health Organization. https://doi.org/10.13140/RG.2.2.13536.89605.

Bates, S. (2016). Revenge porn and mental health: A qualitative analysis of the mental health effects of revenge porn on female survivors. *Feminist Criminology*, *12*(1), 22–42. https://doi.org/10.1177/1557085116654565

Bayer, J. K., & Peay, M. Y. (1997). Predicting intentions to seek help from professional mental health services. *The Australian and New Zealand Journal of Psychiatry*, *31*(4), 504–513. https://doi.org/10.3109/00048679709065072

Bentler, P.M. & Chou, C.P. (1987). Practical issues in structural modeling. *Sociological Methods & Research*, *16*(1). 78-117. https://doi.org/10.1177/0049124187016001004

Betts, K. R., Hinsz, V. B., & Heimerdinger, S. R. (2011). Predicting intentions of romantic partner abuse with the theory of planned behavior. *Current Psychology: A Journal for Diverse Perspectives on Diverse Psychological Issues, 30*(2), 130–147. https://doi.org/10.1007/s12144-011-9105-2

Bohon, L. M., Cotter, K. A., Kravitz, R. L., Cello, P. C., Jr, & Fernandez Y Garcia, E. (2016). The Theory of Planned Behavior as it predicts potential intention to seek mental health services for depression among college students. *Journal of American college health, 64*(8), 593–603. https://doi.org/10.1080/07448481.2016.1207646

Boomsma, A. (1987). The robustness of maximum likelihood estimation in structural equation models. In P. Cuttance & R. Ecob (Eds.), *Structural modeling by example: Applications in educational, sociological, and behavioral research* (pp. 160–188). Cambridge University Press.

Borrajo, E., Gámez-Guadix, M., & Calvete, E. (2015). Cyber dating abuse: Prevalence, context, and relationship with offline dating aggression. *Psychological reports*, *116*(2), 565–585. https://doi.org/10.2466/21.16.PR0.116k22w4

Branson, M. & March, E. (2021). Dangerous dating in the digital age: Jealousy, hostility, narcissim, and psychopathy as predictors of Cyber Dating Abuse. *Computers in human Behaviour*, *119*, 106711. https://doi.org/10.1016/j.cnb.2021.106711

Burke, S. C., 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*(3), 1162–1167. https://doi.org/10.1016/j.chb.2010.12.010

Campbell, J.C. & Manganello, J. (2006). Changing public attitudes as a prevention strategy to reduce intimate partner violence. *Journal of Aggression, Maltreatment & Trauma, 13*, 13-39. https://doi.org/10.1300/J146v13n03_02

Cava, M-J, Tomás, I, Buelga, S, & Carrascosa, L. (2020). Loneliness, depressive mood and cyberbullying victimization in adolescent victims of cyber dating violence. *International Journal of Environmental Research and Public Health*, *17*(12), 4269. https://doi.org/10.3390/ijerph17124269

Cavalcanti, J.G., de Lima Coutinho, M.P., de Lima Pinto, A.V. (2020). Cyber dating abuse: A study of social representations with Brazilian university students. *Ciencias Psicológicas, 14*(2), e-2312. https://doi.org/10.22235/cp.v14i2.2312

Centers for Disease Control and Prevention. (2021). *Preventing teen dating violence*. U.S. Department of Health and Human Services. https://www.cdc.gov/violenceprevention/pdf/ipv/TDV-factsheet_508.pdf

Champion, A.R., Oswald, F., Khera, D. & Pedersen, C.L. (2022). Examining the gendered impacts of technology-facilitated sexual violence: A mixed methods approach. *Archives of Sexual Behaviour*, 51, 1607–1624. https://doi.org/10.1007/s10508-021-02226-y

Cho, H., Seon, J., Han, J.-B., Shamrova, D., & Kwon, I. (2020). Gender differences in the relationship between the nature of intimate partner violence and the survivor's help-seeking. *Violence Against Women*, *26*(6–7), 712–729. https://doi.org/10.1177/1077801219841440

Choi, Y. J., Rai, A., Cho, H., Son, E., An, S., & Yun, S. H. (2021). Help-seeking behaviors for intimate partner violence among college students: Implications for intimate

partner violence prevention and intervention. *Violence and Victims*, *36*(4), 548–564. https://doi.org/10.1891/VV-D-20-00124

Cialdini, R. B., Reno, R. R., & Kallgren, C. A. (1990). A focus theory of normative conduct: Recycling the concept of norms to reduce littering in public places. *Journal of Personality and Social Psychology*, *58*(6), 1015–1026. https://doi.org/10.1037/0022-3514.58.6.1015

Dake, J.A., Price, J.H., Maziarz, L., & Ward, B. (2012). Prevalence and correlates of sexting behavior in adolescents. *American Journal of Sexuality Education*, *7*(1), 1-15. https://doi.org/10.1080/15546128.2012.650959

Dank, M., Lachman, P., Zweig, J. M., & Yahner, J. (2014). Dating violence experiences of lesbian, gay, bisexual, and transgender youth. *Journal of Youth and Adolescence*, *43*(5), 846-857. https://doi.org/10.1007/s10964-013-9975-8

Darvell, M. J., Walsh, S. P., & White, K. M. (2011). Facebook tells me so: Applying the theory of planned behavior to understand partner-monitoring behavior on Facebook. *Cyberpsychology, Behavior and Social Networking*, *14*(12), 717–722. https://doi.org/10.1089/cyber.2011.0035

Demers, J.M., Ward, S.K., Walsh, W.A., Banyard, V.A., Cohn, E.S., Edwards, K.M., & Moynihan, M.M. (2018) Disclosure on campus: Students' decisions to tell others about unwanted sexual experiences, intimate partner violence, and stalking. *Journal of Aggression, Maltreatment & Trauma*, *27*(1), 54-75. https://doi.org/10.1080/10926771.2017.1382631

Dick, R. N., McCauley, H. L., Jones, K. A., Tancredi, D. J., Goldstein, S., Blackburn, S., Monasterio, E., James, L., Silverman, J. G., & Miller, E. (2014). Cyber dating abuse

among teens using school-based health centers. *Pediatrics*, *134*(6), e1560–e1567. https://doi.org/10.1542/peds.2014-0537

Doane, A. N., Pearson, M. R., & Kelley, M. L. (2014). Predictors of cyberbullying perpetration among college students: An application of the Theory of Reasoned Action. *Computers in Human Behavior, 36,* 154–162. https://doi.org/10.1016/j.chb.2014.03.051

Douglas, H., Harris, B.A., & Dragiewicz, M. (2019). Technology-facilitated domestic and family violence: Women's experience. *British Journal of Criminology*, *59*(3), 551-570. https:/doi.org/10.1093/bjc/azy068

Draucker, C.B. & Martsolf, D.S. (2010). The role of electronic communication technology in adolescent dating violence. *Journal of Child and Adolescent Psychiatric Nursing, 23,* 133-142. https://doi.org/10.1111/j.1744-6171.2010.00235.x

Drouin, M., Ross, J., & Tobin, E. (2015). Sexting: A new, digital vehicle for intimate partner aggression? *Computers in Human Behavior, 50,* 197-204. https://doi.org/10.1016/j.chb.2015.04.001

Duerksen, K. N., & Woodin, E. M. (2019). Cyber dating abuse victimization: Links with psychosocial functioning. *Journal of Interpersonal Violence*. https://doi.org/10.1177/0886260519872982

Edwards, K. M., Dardis, C. M., & Gidycz, C. A. (2012). Women's disclosure of dating violence: A mixed methodological study. *Feminism & Psychology*, *22*(4), 507–517. https://doi.org/10.1177/0959353511422280

Ellyson, A.M., Adhia, A., Lyons, V.H., Rivara, F.P. (2021). Prevalence, age of initiation, and patterns of co-occurrence of digital dating abuse behaviors nationwide. *Children*

and Youth Services Review, 122, 105921. https://doi.org/10.1016/j.childyouth.2020.105921

Evans, M. A., & Feder, G. S. (2015). Help-seeking amongst women survivors of domestic violence: A qualitative study of pathways towards formal and informal support. *Health Expectations: An International Journal of Public Participation in Health Care and Health Policy*, *19*(1), 62–73. https://doi.org/10.1111/hex.12330

Faverio, M. (2022, January 13). *Share of those 65 and older who are tech users has grown in the past decade.* Pew Research Center. https://www.pewresearch.org/fact-tank/2022/01/13/share-of-those-65-and-older-who-are-tech-users-has-grown-in-the-past-decade/

Field, A. (2018). *Discovering Statistics using IBM SPSS Statistics* (5th ed.). London, UK: Sage Publications Ltd.

Fishbein, M., & Ajzen, I. (1975). *Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research.* Reading, MA: Addison-Wesley.

Fishbein, M., Ajzen, I. (2011). *Predicting and Changing Behavior: The Reasoned Action Approach.* United Kingdom: Taylor & Francis.

Fissel, E. R. (2018). The reporting and help-seeking behaviors of cyberstalking victims. *Journal of Interpersonal Violence*, *36*(11–12), 5075–5100. https://doi.org/10.1177/0886260518801942

Fleming, C. J., & Resick, P. A. (2017). Help-seeking behavior in survivors of intimate partner violence: toward an integrated behavioral model of individual factors. *Violence and Victims*, *32*(2), 195–209. https://doi.org/10.1891/0886-6708.VV-D-15-00065

Freeman, B., Potente, S., Rock, V. & McIver, J. (2015). Social media campaigns that make a difference: What can public health learn from the corporate sector and other social change marketers? *Public Health Research & Practice, 25*(2), 1 – 8. https://doi.org/10.17061/phrp2521517

Fugate, M., Landis, L., Riordan, K., Naureckas, S., & Engel, B. (2005). Barriers to domestic violence help seeking: Implications for intervention. *Violence Against Women, 11*(3), 290–310. https://doi.org/10.1177/1077801204271959

Giaccardi, S., Ward, L. M., Seabrook, R. C., Manago, A., & Lippman, J. (2016). Media and modern manhood: Testing associations between media consumption and young men's acceptance of traditional gender ideologies. *Sex Roles: A Journal of Research, 75*(3-4), 151–163. https://doi.org/10.1007/s11199-016-0588-z

Good, G. E., Dell, D. M., & Mintz, L. B. (1989). Male role and gender role conflict: Relations to help seeking in men. *Journal of Counseling Psychology, 36*(3), 295–300. https://doi.org/10.1037/0022-0167.36.3.295

Gracia-Leiva, M., Puente-Martínez, A., Ubillos-Landa, S., González-Castro, J. L., & Páez-Rovira, D. (2020). *Off*- and *online* heterosexual dating violence, perceived attachment to parents and peers and suicide risk in young women. *International Journal of Environmental Research and Public Health*, *17*(9), 3174. https://doi.org/10.3390/ijerph17093174

Hancock, K., Keast, H., & Ellis, W. (2017). The impact of cyber dating abuse on self-esteem: The mediating role of emotional distress. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, *11*(2), Article 2. https://doi.org/10.5817/CP2017-2-2

Hanna, K. M., Scott, L. L., & Schmidt, K. K. (2014). Retention strategies in longitudinal studies with emerging adults. *Clinical Nurse Specialist*, *28*(1), 41–45. https://doi.org/10.1097/NUR.0000000000000020

Heirman, W., & Walrave, M. (2012). Predicting adolescent perpetration in cyberbullying: An application of the theory of planned behavior. *Psicothema, 24*(4), 614–620.

Hou W.L., Lin C.Y., Wang Y.M., Tseng Y.H., & Shu B.-C. (2020). Assessing related factors of intention to perpetrate dating violence among university students using the Theory of Planned Behavior. *International Journal of Environmental Research and Public Health, 17*, 923-939. https://doi.org/10.3390/ijerph17030923

Johnson, W. L., Giordano, P. C., Manning, W. D., & Longmore, M. A. (2015). The age-IPV curve: Changes in the perpetration of intimate partner violence during adolescence and young adulthood. *Journal of Youth and Adolescence*, *44*(3), 708–726. https://doi.org/10.1007/s10964-014-0158-z

Kaukinen, C. (2014). Dating violence among college students: The risk and protective factors. *Trauma, Violence, & Abuse, 15*, 283-296. https://doi.org/10.1177/1524838014521321

Kernsmith, P. (2005). Treating perpetrators of domestic violence: Gender differences in the applicability of the theory of planned behavior. *Sex Roles: A Journal of Research, 52*(11-12), 757–770. https://doi.org/10.1007/s11199-005-4197-5

Kernsmith, P. D., & Tolman, R. M. (2011). Attitudinal correlates of girls' use of violence in teen dating relationships. *Violence Against Women, 17*(4), 500–516. https://doi.org/10.1177/1077801211404312

Kim, H. K., Laurent, H. K., Capaldi, D. M., & Feingold, A. (2008). Men's aggression toward women: A 10-year panel study. *Journal of Marriage and the Family*, *70*(5), 1169–1187. https://doi.org/10.1111/j.1741-3737.2008.00558.x

Kimmel, M. S. (2002). “Gender symmetry” in domestic violence: A substantive and methodological research review. *Violence Against Women*, *8*(11), 1332–1363. https://doi.org/10.1177/107780102237407

Kirsch, I., Lynn, S. J., Vigorito, M., & Miller, R. R. (2004). The role of cognition in classical and operant conditioning. *Journal of clinical psychology*, *60*(4), 369-392. https://doi.org.10.1002/jclp.10251

Kline, R. B. (2005). *Principle and practice of structural equation modeling* (2nd ed.). Guilford Press.

Lachman, P., Zweig, J., Dank, M. & Yahner, J. (2019), Patterns of help-seeking behavior among victims of teen dating violence and abuse: Variations among boys and girls. *Journal of School Health, 89*, 791-799. https://doi.org/10.1111/josh.12816

Lara, L. (2020). Cyber dating abuse: Assessment, prevalence, and relationship with offline violence in young Chileans. *Journal of Social and Personal Relationships*, *37*(5), 1681–1699. https://doi.org/10.1177/0265407520907159

Lee, C., & Wong, J.S. (2022) Examining the effects of teen dating violence prevention programs: A systematic review and meta-analysis. *Journal of Experimental Criminology*, 18, 1–40. https://doi.org/10.1007/s11292-020-09442-x

Leisring, P. A., & Giumetti, G. W. (2014). Sticks and stones may break my bones, but abusive text messages also hurt: Development and validation of the Cyber

Psychological Abuse scale. *Partner Abuse, 5*(3), 323–341. https://doi.org/10.1891/1946-6560.5.3.323

Levy, K.E. (2014). Intimate Surveillance. *Idaho Law Review, 51*(3), 679.

Leitão, R. (2021) Technology-facilitated intimate partner abuse: A qualitative analysis of data from online domestic abuse forums. *Human–Computer Interaction*, 36(3), 203-242. https://doi.org/10.1080/07370024.2019.1685883

Lenhart, A., Anderson, M., & Smith, A. (2015, October 1). Teens, technology and Romantic relationships. https://www.pewresearch.org/internet/2015/10/01/teens-technology-and-romantic-relationships/

Lin, C. Y., Tseng, Y. H., Lin, M. L., & Hou, W. L. (2021). Factors related to intentions to commit dating violence among Taiwanese university students: Application of the extended theory of planned behavior. *International Journal of Environmental Research and Public Health*, *18*(4), 1956-1970. https://doi.org/10.3390/ijerph18041956

Lindsay, M., Booth, J. M., Messing, J. T., & Thaller, J. (2016). Experiences of online harassment among emerging adults: emotional reactions and the mediating role of fear. *Journal of Interpersonal Violence*, *31*(19), 3174–3195. https://doi.org/10.1177/0886260515584344

Lynch, L., Long, M., & Moorhead, A. (2018). Young men, help-seeking, and mental health services: Exploring barriers and solutions. *American Journal of Men's Health*, *12*(1), 138–149. https://doi.org/10.1177/1557988315619469

Mackenzie, C. S., Gekoski, W. L., & Knox, V. J. (2006). Age, gender, and the underutilization of mental health services: The influence of help-seeking

attitudes. *Aging & Mental Health*, *10*(6), 574–582. https://doi.org/10.1080/13607860600641200

Mak, H. W., & Davis, J. M. (2014). The application of the theory of planned behavior to help-seeking intention in a Chinese society. *Social Psychiatry and Psychiatric Epidemiology*, *49*(9), 1501–1515. https://doi.org/10.1007/s00127-013-0792-x

Marganski, A., & Melander, L. (2018). Intimate partner violence victimization in the cyber and real world: Examining the extent of cyber aggression experiences and its association with in-person dating violence. *Journal of Interpersonal Violence*, *33*(7), 1071–1095. https://doi.org/10.1177/0886260515614283

Martin, C. E., Houston, A. M., Mmari, K. N., & Decker, M. R. (2012). Urban teens and young adults describe drama, disrespect, dating violence and help-seeking preferences. *Maternal and Child Health Journal*, *16*(5), 957–966. https://doi.org/10.1007/s10995-011-0819-4

McCarthy, K.J, Mehta, R., Haberland, N.A. (2018) Gender, power, and violence: A systematic review of measures and their association with male perpetration of IPV. *PLoS ONE, 13*(11), e0207091. https://doi.org/10.1371/journal.pone.0207091

Meyers, L.S., Gamst, G., Guarino, A.J. (2017). *Applied multivariate research: Design and interpretation* (3rd Ed.). Sage Publications Inc.

Miller, L. (2011). Physical abuse in a college setting: A study of perceptions and participation in abusive dating relationships. *Journal of Family Violence, 26*, 71-80. https://doi.org/10.1007/s10896-010-9344-2.

Miller, E., Decker, M. R., Raj, A., Reed, E., Marable, D., & Silverman, J. G. (2010). Intimate partner violence and health care-seeking patterns among female users of

urban adolescent clinics. *Maternal and Child Health Journal*, *14*(6), 910–917. https://doi.org/10.1007/s10995-009-0520-z

Mo, P. K., & Mak, W. W. (2009). Help-seeking for mental health problems among Chinese: the application and extension of the theory of planned behavior. *Social Psychiatry and Psychiatric Epidemiology*, *44*(8), 675–684. https://doi.org/10.1007/s00127-008-0484-0

Nam, S. K., Chu, H. J., Lee, M. K., Lee, J. H., Kim, N., & Lee, S. M. (2010). A meta-analysis of gender differences in attitudes toward seeking professional psychological help. *Journal of American College Health*, *59*(2), 110–116. https://doi.org/10.1080/07448481.2010.483714

Neighbors, C., Walker, D. D., Mbilinyi, L. F., O'Rourke, A., Edleson, J. L., Zegree, J., & Roffman, R. A. (2010). Normative misperceptions of abuse among perpetrators of intimate partner violence. *Violence Against Women*, *16*(4), 370–386. https://doi.org/10.1177/1077801210363608

Pabian, S., & Vandebosch, H. (2014). Using the theory of planned behaviour to understand cyberbullying: The importance of beliefs for developing interventions. *European Journal of Developmental Psychology*, *11*(4), 463–477. https://doi.org/10.1080/17405629.2013.858626

Park, S., & Kim, S.-H. (2018). The power of family and community factors in predicting dating violence: A meta-analysis. *Aggression and Violent Behavior*, *40*, 19–28. https://doi.org/10.1016/j.avb.2018.03.002

Pereira, F., Spitzberg, B. & Matos, M. (2016). Cyber-harassment victimization in Portugal: Prevalence, fear and help-seeking among adolescents. *Computers in Human Behavior*, *62*, 136-146. https://doi.org/10.1016/j.chb.2016.03.039.

Peskin, M. F., Markham, C. M., Shegog, R., Temple, J. R., Baumler, E. R., Addy, R. C., Hernandez, B., Cuccaro, P., Gabay, E. K., Thiel, M., & Emery, S. T. (2017). Prevalence and correlates of the perpetration of cyber dating abuse among early adolescents. *Journal of Youth and Adolescence*, *46*(2), 358–375. https://doi.org/10.1007/s10964-016-0568-1

Pipes, R.B., & LeBov-Keeler, K. (1997). Psychological abuse among college women in exclusive heterosexual dating relationships. *Sex Roles* 36, 585–603. https://doi.org/10.1023/A:1025665907856

Powell, A., & Henry, N. (2017). *Sexual violence: A feminist criminological analysis*. In A. Powell, & N. Henry (Eds.), Sexual violence in a digital age (pp. 23–47). Palgrave Macmillan UK.

Powell, A., & Henry, N. (2019). Technology-facilitated sexual violence victimization: Results from an online survey of Australian adults. *Journal of Interpersonal Violence*, *34*(17), 3637–3665. https://doi.org/10.1177/0886260516672055

Priebe, G., Mitchell, K., & Finkelhor, D. (2013). To tell or not to tell? Youth's responses to unwanted Internet experiences. *Cyberpsychology: The Journal of Psychosocial Research on Cyberspace, 7*. https://doi.org/10.5817/CP2013-1-6.

Reed, L.A., Lawler, S.M., McCullough Cosgrove, J., Tolman, R., & Ward, L.M. (2021). “It was a joke”: Pattern in girls’ and boys’ self-reported motivations for digital dating

abuse behaviors. *Children and Youth Services Review*, *122*(2), 105883. https://doi.org/10.1016/j.childyouth.2020.105883

Reed, L. A., Tolman, R. M., & Ward, L. M. (2016). Snooping and sexting: Digital media as a context for dating aggression and abuse among college students. *Violence Against Women*, *22*(13), 1556–1576. https://doi.org/10.1177/1077801216630143

Ricketts, M.L., Maloney, C., Marcum, C.D. & Higgins, G.E. (2015). The effect of internet related problems on the sexting behaviors of juveniles. *American Journal of Criminal Justice, 40,* 270–284. https://doi.org/10.1007/s12103-014-9247-5

Rivis, A., & Sheeran, P. (2003). Descriptive norms as an additional predictor in the theory of planned behaviour: A meta-analysis. *Current Psychology: A Journal for Diverse Perspectives on Diverse Psychological Issues*, *22*(3), 218–233. https://doi.org/10.1007/s12144-003-1018-2

Rocha-Silva, T., Nogueira, C., & Rodrigues, L. (2021). Intimate abuse through technology: A systematic review of scientific constructs and behavioral dimensions. *Computers in Human Behavior, 122*, 106861. https://doi.org/10.1016/j.chb.2021/106861

Rucker, D. D., Preacher, K. J., Tormala, Z. L., & Petty, R. E. (2011). Mediation analysis in social psychology: Current practices and new recommendations. *Social and Personality Psychology Compass*, *5*(6), 359–371. https://doi.org/10.1111/j.1751-9004.2011.00355.x

Sabina, C., & Ho, L. Y. (2014). Campus and college victim responses to sexual assault and dating violence: disclosure, service utilization, and service provision. *Trauma, violence & Abuse*, *15*(3), 201–226. https://doi.org/10.1177/1524838014521322

Scarduzio, J. A., Carlyle, K. E., Harris, K. L., & Savage, M. W. (2017). "Maybe she was provoked": Exploring gender stereotypes about male and female perpetrators of intimate partner violence. *Violence Against Women*, *23*(1), 89–113.https://doi.org/10.1177/1077801216636240

Seto, M. C. (2019). The motivation-facilitation model of sexual offending. *Sexual Abuse*, *31*(1), 3-24. https://doi.org/10.1177/1079063217720919

Simon, T. R., Anderson, M., Thompson, M. P., Crosby, A. E., Shelley, G., & Sacks, J. J. (2001). Attitudinal acceptance of intimate partner violence among U.S. adults. *Violence and Victims*, *16*(2), 115–126. https://doi.org/10.1891/0886-6708.16.2.115

Smith, K., Cénat, J. M., Lapierre, A., Dion, J., Hébert, M., & Côté, K. (2018). Cyber dating violence: Prevalence and correlates among high school students from small urban areas in Quebec. *Journal of Affective Disorders*, *234*, 220–223. https://doi.org/10.1016/j.jad.2018.02.043

Sniehotta, F.F., Presseau, J., & Araújo-Soares, V. (2014) Time to retire the theory of planned behaviour. *Health Psychology Review*, *8*(1), 1-7. https://doi.org/10.1080/17437199.2013.869710

Spencer, C. M., Toews, M. L., Anders, K. M., & Emanuels, S. K. (2021). Risk markers for physical teen dating violence perpetration: A meta-analysis. *Trauma, Violence & Abuse*, *22*(3), 619–631. https://doi.org/10.1177/1524838019875700

Sommer, L. (2011). The theory of planned behaviour and the impact of past behaviour. *International Business & Economics Research Journal*, *10*(1), 91-110. https://doi.org/10.19030/iber.v10i1.930

Statistics Canada. (2019). A portrait of Canadian youth: March 2019 updates. https://www150.statcan.gc.ca/n1/pub/11-631-x/11-631-x2019003-eng.htm#a2

Stonard, K. (2019). "Technology was designed for this": Adolescents' perceptions of the role and impact of the use of technology in Cyber Dating Violence. *Computers in Human Behavior, 105*, 106211. https://doi.org/10.1016/j.chb.2019.106211.

Stonard, K. E., Bowen, E., Walker, K., & Price, S. A. (2017). "They'll always find a way to get to you": Technology use in adolescent romantic relationships and its role in dating violence and abuse. *Journal of Interpersonal Violence, 32*(14), 2083–2117. https://doi.org/10.1177/0886260515590787

Suler, J. (2004). The online disinhibition effect. *CyberPsychology & Behavior, 7*(3), 321–326. https://doi.org/10.1089/1094931041291295

Sutton, T. E., & Simons, L. G. (2015). Sexual assault among college students: Family of origin hostility, attachment, and the hook-up culture as risk factors. *Journal of Child and Family Studies, 24*(10), 2827–2840. https://doi.org/10.1007/s10826-014-0087-1

Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International Journal Of Medical Education, 2*, 53–55. https://doi.org/10.5116/ijme.4dfb.8dfd

Taylor, K. (2019, November 22). Thousands of texts at center of case against woman charged in boyfriend's suicide. *New York Times.* https://www.nytimes.com/2019/11/22/us/Inyoung-You-texting-suicide-court.html

Temple, J.R., Shorey, R.C., Tortolero, S.R., Wolfe, D.A., & Stuart, GL. (2013). Importance of gender and attitudes about violence in the relationship between exposure to interparental violence and the perpetration of teen dating violence. *Child*

Abuse & Neglect: The International Journal, 37(5), 343-352. https://doi.org/10.1016/j.chiabu.2013.02.001

Thulin, E.J., Heinze, J.E., Kernsmith, P. Smith-Darden, J.P., & Fleming, P.J. (2020). Adolescent risk of dating violence and electronic dating abuse: A latent class analysis. *Journal of Youth and Adolescence*. https://doi.org/10.1007/s10964-020-01361-4

Tolman, R. M., Edleson, J. L., & Fendrich, M. (1996). The applicability of the theory of planned behavior to abusive men's cessation of violent behavior. *Violence and Victims*, *11*(4), 341–354. https://doi.org/10.1891/0886-6708.11.4.341

Tomczyk, S., Schomerus, G., Stolzenburg, S., Muehlan, H., & Schmid, S. (2020). Ready, willing and able? An investigation of the theory of planned behaviour in help-seeking for a community sample with current untreated depressive symptoms. *Prevention Science, 21*, 749–760. https://doi.org/10.1007/s11121-020-01099-2

Van Ouytsel, J., Walrave, M., Lu, Y., Temple, J. R., & Ponnet, K. (2018). The associations between substance use, sexual behavior, deviant behaviors and adolescents' engagement in sexting: Does relationship context matter? *Journal of Youth and Adolescence*, *47*(11), 2353–2370. https://doi.org/10.1007/s10964-018-0903-9

Vandebosch, H., & Van Cleemput, K. (2009). Cyberbullying among youngsters: Profiles of bullies and victims. *New Media & Society*, *11*(8), 1349–1371. https://doi.org/10.1177/1461444809341263

Vessey, J. T., & Howard, K. I. (1993). Who seeks psychotherapy? *Psychotherapy: Theory, Research, Practice, Training*, *30*(4), 546–553. https://doi.org/10.1037/0033-3204.30.4.546

Villora, B., Yubero, S., & Navarro, R. (2019). Associations between feminine gender norms and cyber dating abuse in female adults. *Behavioral Sciences*, *9*(4), 35-48. https://doi.org/10.3390/bs9040035

Vogel, D. L., Gentile, D. A., & Kaplan, S. A. (2008). The influence of television on willingness to seek therapy. *Journal of Clinical Psychology*, *64*(3), 276–295. https://doi.org/10.1002/jclp.20446

Vogel, D. L., Wade, N. G., & Hackler, A. H. (2007). Perceived public stigma and the willingness to seek counseling: The mediating roles of self-stigma and attitudes toward counseling. *Journal of Counseling Psychology*, *54*(1), 40–50. https://doi.org/10.1037/0022-0167.54.1.40

Vogels, E.A. (2019, September 9). Millennials stand out for their technology use, but older generations also embrace digital life. https://www.pewresearch.org/fact-tank/2019/09/09/us-generations-technology-use/

Weathers, M. R., Canzona, M. R., & Fisher, C. L. (2019). Digital media as a context for dating abuse: Connecting adaptive and maladaptive coping strategies to young adult women's well-being. *Affilia*, *34*(3), 325–345. https://doi.org/10.1177/0886109919832005

Wiesen-Martin, D.R. (2017). Nature of formal intimate partner violence help-seeking: The influence of individual and community characteristics. [Unpublished doctoral dissertation]. University of New Hampshire. https://scholars.unh.edu/dissertation/2294

Wilson, C., Deane, F., Ciarrochi, J., & Rickwood, D. (2005). Measuring help-seeking intentions: Properties of the General Help-Seeking Questionnaire. *Canadian Journal of Counselling*, *39*, 15-28.

Witte, T. H., & Mulla, M. M. (2013). Social norms for intimate partner violence. *Violence and Victims*, *28*(6), 959–967. https://doi.org/10.1891/0886-6708.vv-d-12-00153

Wynaden, D., McAllister, M., Tohotoa, J., Al Omari, O., Heslop, K., Duggan, R., Murray, S., Happell, B., & Byrne, L. (2014). The silence of mental health issues within university environments: A quantitative study. *Archives of Psychiatric Nursing*, *28*(5), 339–344. https://doi.org/10.1016/j.apnu.2014.08.003

Zapor, H., Wolford-Clevenger, C., Elmquist, J., Febres, J., Shorey, R. C., Brasfield, H., Leisring, P. A., & Stuart, G. L. (2017). Psychological aggression committed through technology: A study with dating college students. *Partner Abuse, 8*(2), 127–145. https://doi.org/10.1891/1946-6560.8.2.127

Zorrilla, M.M., Modeste, N., Gleason, P.C., Sealy, D., Banta, J.E., & Trieu, S.L. (2019). Depression and help-seeking intention among young adults: The theory of planned behavior. *American Journal of Health Education, 50*(4), 236-244. https://doi.org/10.1080/19325037.2019.1616014

Zweig, J. M., 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*(7), 1063–1077. https://doi.org/10.1007/s10964-013-9922-8

Zweig, J. M., Lachman, P., Yahner, J., & Dank, M. (2014). Correlates of cyber dating abuse among teens. *Journal of Youth and Adolescence, 43*(8), 1306–1321. https://doi.org/10.1007/s10964-013-0047-x

Table 1

Demographic Characteristics by Recruitment Source

Variable	Total Sample (N = 408)	University recruited (n = 352)	Social media recruited (n = 56)	Fisher Exact Test
	% (n)	% (n)	% (n)	
Age *M* (*SD*)	20.43 (1.95)	20.13 (1.75)	22.30 (2.08)	<.001‡
Gender				
Male	18.1 (74)	14.5 (51)	41.1 (23)	<.001
Female	81.9 (334)	85.5 (301)	58.9 (33)	
Race/Ethnicity				.020
White	76.2 (311)	77.8 (274)	66.1 (37)	
Black	5.6 (23)	5.4 (19)	7.1 (4)	
Asian	6.9 (28)	6.3 (22)	10.7 (6)	
Hispanic	3.4 (14)	2.8 (10)	7.1 (4)	
Arab	2.7 (11)	3.1 (11)	0.0 (0)	
Indigenous	1.2 (5)	1.1 (4)	1.8 (1)	
Other/Prefer not to answer	4.1 (16)	3.4 (12)	7.2 (4)	
Country				<.001
Canada	89.0 (363)	99.7 (351)	21.4 (12)	
United States	11.0 (45)	0.3 (1)	78.6 (44)	
Highest level of education				<.001
High school or equivalent	33.3 (136)	35.2 (124)	21.4 (12)	
Some college/university but not degree	56.4 (230)	59.9 (211)	33.9 (19)	
Associate degree	1.2 (5)	0.9 (3)	3.6 (2)	
Bachelor's degree	8.1 (33)	3.7 (13)	35.7 (20)	
Graduate degree	0.7 (3)	0.0 (0)	5.4 (3)	
Missing	0.2 (1)	0.3 (1)	0.0 (0)	
Sexual Orientation				.005
Heterosexual	69.1 (282)	71.0 (250)	57.1 (32)	
Bisexual	20.1 (82)	18.8 (66)	28.6 (16)	
Gay	2.9 (12)	1.7 (6)	10.7 (6)	
Lesbian	2.7 (11)	2.8 (10)	1.8 (1)	
Other/Prefer not to answer	4.9 (20)	6.4 (19)	1.8 (1)	
Missing	0.2 (1)	0.3 (1)	0.0 (0)	
Relationship Status				.008
Dating	55.4 (226)	55.1 (194)	57.1 (32)	
Married/Common-law	7.1 (29)	5.4 (19)	17.9 (10)	
Single	36.0 (147)	37.8 (133)	25.0 (16)	
Other	1.5 (6)	1.7 (6)	0.0 (0)	

Note. ‡Welch's $t(67.97) = -7.41$, $p < .001$, Levene's test for equality of variance indicated unequal variances ($F = 6.34$, $p = .012$)

Table 2

Differences Between University- and Social Media-Recruited Samples Across Key Study Variables.

Variable	University recruited		Social media recruited		*t*	*df*	*p*
	M	*SD*	*M*	*SD*			
Digital monitoring and control							
Past perpetration	.81	.39	.84	.37	-.48	406	.632
Past Victimization	.76	.43	.80	.40	-.78	406	.435
Attitudes	2.10	.94	2.50	1.11	**-2.88**	**406**	**.004**
Injunctive norms	1.75	.89	2.06	1.12	-1.97	66.68	.053
Descriptive norms	2.72	1.45	2.53	1.34	.95	406	.344
PBC	5.31	1.41	5.01	1.33	1.49	406	.137
Intent to perpetrate	1.59	.85	1.84	1.30	-1.40	62.66	.167
Digital direct aggression							
Past perpetration	.45	.50	.48	.50	-.38	406	.701
Past Victimization	.56	.50	.68	.47	-1.78	75.86	.079
Attitudes	1.26	.43	1.44	.76	-1.82	60.97	.074
Injunctive norms	1.14	.33	1.37	.74	**-2.31**	**58.63**	**.025**
Descriptive norms	1.42	.67	1.62	.95	-1.48	64.07	.145
PBC	5.89	1.52	5.65	1.33	1.00	406	.320
Intent to perpetrate	1.08	.24	1.28	.69	**-2.16**	**57.06**	**.017**
Digital sexual coercion							
Past perpetration	.26	.44	.38	.49	-1.88	76.90	.064
Past Victimization	.55	.50	.61	.49	-.810	82.11	.420
Attitudes	1.43	.66	1.79	1.23	**-2.11**	**60.19**	**.039**
Injunctive norms	1.24	.54	1.52	1.05	-1.95	59.80	.056
Descriptive norms	1.57	1.01	1.74	1.28	-1.11	406	.266
PBC	5.16	1.657	5.24	1.48	-.33	406	.740
Intent to perpetrate	1.18	.54	1.47	1.19	-1.80	58.63	.077
Gender norm beliefs	2.67	1.10	3.54	1.97	**-3.21**	**60.58**	**.002**

Note. University-recruited, $n = 352$, social media-recruited, $n = 56$. PBC = perceived behavioural control. Mean scores are based on a 7-point scale (1 – 7), except for perpetration and victimization (0 - 1) and gender norm beliefs (1 – 11).

Table 3

Item Frequencies, Means, and Standard Deviations for Digital Dating Abuse Perpetration Subscale (Reed et al., 2016)

Variables	Never	A few times	Often	Very often	*M* (*SD*)
	% (*n*)	% (*n*)	% (*n*)	% (*n*)	
Digital monitoring and control					
1. pressured my partner to respond quickly to calls, texts, or other messages	48.9 (172)	43.5 (153)	6.5 (23)	1.1 (4)	.60 (.66)
2. monitored my partner's whereabouts and activities	38.1 (134)	44.0 (155)	14.2 (50)	3.7 (13)	.84 (.80)
3. sent so many messages it made my partner feel uncomfortable	80.1 (282)	18.5 (65)	0.6 (2)	0.9 (3)	.22 (.49)
4. monitored who my partner talks to and is/was friends with	54.8 (193)	38.4 (135)	4.5 (16)	2.3 (8)	.54 (.69)
5. pressured my partner for passwords to access cell phone or online accounts	89.8 (316)	8.8 (31)	1.1 (4)	0.3 (1)	.12 (.38)
6. used private information to check on my partner without my partner's permission	86.1 (303)	12.5 (44)	0.6 (2)	0.9 (3)	.16 (.45)
Digital direct aggression					
7. shared embarrassing content (photo or video) with others without my partner's permission	87.2 (307)	11.9 (42)	0.6 (2)	0.3 (1)	.14 (.39)
8. sent my partner a mean or hurtful private message	73.3 (258)	24.7 (87)	1.7 (6)	0.3 (1)	.29 (.51)
9. posted a mean or hurtful public message about my partner using social media	98.0 (345)	1.4 (5)	0.6 (2)	0.0 (0)	.03 (.19)
10. spread a rumor about my partner	97.2 (342)	2.3 (8)	0.3 (1)	0.0 (0)	.03 (.18)
11. sent a threatening message to my partner	96.6 (340)	3.1 (11)	0.0 (0)	0.0 (0)	.03 (.17)
12. threatened to harm my partner physically	98.9 (348)	1.1 (4)	0.0 (0)	0.0 (0)	.01 (.11)
13. used cell phone or online account to pretend to be my partner without my partner's permission	97.4 (343)	2.0 (7)	0.6 (2)	0.0 (0)	.03 (.20)
14. Used information on social network sites to tease my partner	79.5 (280)	19.0 (67)	1.1 (4)	0.0 (0)	.21 (.44)
Digital sexual coercion					
15. Pressured my partner to sext	97.4 (343)	2.6 (9)	0.0 (0)	0.0 (0)	.03 (.16)
16. sent a sexual or naked photo/video of self to my partner without my partner's consent	80.4 (283)	15.6 (55)	3.4 (12)	0.6 (2)	.24 (.54)
17. sent a sexual or naked photo/video of my partner to others without my partner's consent	97.2 (342)	2.3 (8)	0.3 (1)	0.0 (0)	.03 (.18)
18. pressured my partner to have sex or do other sexual activity	92.0 (324)	7.4 (26)	0.3 (1)	0.3 (1)	.09 (.32)

Note. $N = 352$.

Table 4

Item Frequencies, Means, and Standard Deviations for Digital Dating Abuse Victimization Subscale (Reed et al., 2016)

Variables	Never	A few times	Often	Very Often	*M* (*SD*)
	% (*n*)	% (*n*)	% (*n*)	% (*n*)	
Digital Monitoring and Control					
1. Pressured me to respond quickly to calls, texts, or other messages	45.7 (161)	32.7 (115)	14.8 (52)	6.5 (23)	.82 (.92)
2. Monitored my whereabouts and activities	41.2 (145)	36.4 (128)	15.6 (55)	6.8 (24)	.88 (.91)
3. Sent so many messages it made me feel uncomfortable	60.5 (213)	24.7 (87)	10.2 (36)	4.3 (15)	.58 (.84)
4. Monitored who I talk to and am/was friends with	46.9 (165)	32.4 (114)	13.1 (46)	7.4 (26)	.81 (.93)
5. Pressured me for passwords to access my cell phone or online accounts	83.5 (294)	11.6 (41)	1.4 (5)	3.4 (12)	.25 (.65)
6. Used private information to check on me without my permission	77.3 (272)	16.8 (59)	3.4 (12)	2.6 (9)	.31 (.66)
Digital direct aggression					
7. Shared embarrassing content (photo or video) with others without my permission	75.0 (264)	19.0 (67)	3.1 (11)	2.8 (10)	.34 (.68)
8. Sent me a mean or hurtful private message	56.0 (197)	30.1 (106)	9.1 (32)	4.8 (17)	.63 (.84)
9. Posted a mean or hurtful public message about me using social media	90.3 (318)	6.5 (23)	2.3 8)	0.9 (3)	.14 (.46)
10. Spread a rumor about me	79.5 (280)	12.5 (44)	3.7 (13)	4.3 (15)	.33 (.74)
11. Sent a threatening message	80.7 (284)	12.8 (45)	3.7 (13)	2.6 (9)	.28 (.66)
12. Threatened to harm me physically	90.1 (317)	7.7 (27)	0.9 (3)	1.4 (5)	.14 (.47)
13. Used cell phone or online account to pretend to be me without my permission	95.2 (335)	2.6 (9)	1.1 (4)	1.1 (4)	.08 (.41)
14. Used information on social network sites to tease me	78.7 (277)	14.8 (52)	4.0 (14)	2.3 (8)	.30 (.65)
Digital sexual					
15. Pressured me to sext	64.8 (228)	20.5 (72)	8.2 (29)	6.5 (23)	.57 (.90)
16. Sent a sexual or naked photo/video of self to me without my consent	66.8 (235)	17.3 (61)	9.9 (35)	5.7 (20)	.54 (.89)
17. Sent a sexual or naked photo/video of me to others without my consent	84.1 (296)	11.9 (42)	2.8 (10)	1.1 (4)	.21 (54)
18. Pressured me to have sex or do other sexual activity	53.4 (188)	27.8 (98)	10.8 (38)	8.0 (28)	.73 (.94)

Table 5

Correlations for Study Variables for Digital Monitoring and Control, Digital Direct Aggression, and Digital Sexual Coercion.

Variables	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
Monitoring and control										
1. Age	-	<.01	-.03	-.14**	.12	-.08	.11	-.10	.06	.18***
2. Gender	-.02	-	.07	.01	-.13	.03	.07	.19***	.09	.07
3. Past perpetration	.01	.07	-	.35***	.08	.33***	.26***	.28***	.03	.34***
4. Past victimization	-.14**	.01	.35***	-	-.04	.35***	.30***	.33***	.03	.40***
5. Gender Norms	.15**	-.17**	.07	-.05	-	.11	.11	.06	-.10	.12
6. Attitudes	-.03	.03	.29***	.32***	.17***	-	.57***	.51***	.09	.57***
7. Injunctive norms	-.07	.08	.25***	.28***	.14**	.58***	-	.57***	.06	.55***
8. Descriptive norms	-.12	.20***	.25***	.31***	.06	.45***	.57***	-	.09	.50***
9. PBC	-.08	.06	.05	.08	-.09	.18***	.14**	.14**	-	.07
10. Intent	-.07	.02	.27***	.29***	.23***	.60***	.57***	.45***	.17***	-
Direct aggression										
1. Age	-	<.01	.03	.03	.12	-.04	-.03	-.04	-.07	-.06
2. Gender	-.02	-	.05	.02	-.13	<.01	<.01	.06	.04	-.01
3. Past perpetration	.02	.05	-	.34***	.09	.42***	.30***	.37***	.04	.40***
4. Past victimization	.04	.02	.34***	-	-.08	.20***	.28***	.30***	.03	.28***
5. Gender Norms	.15**	-.17**	.09	-.08	-	.10	.11	.07	-.08	.10
6. Attitudes	.01	.06	.33***	.21***	.11	-	.45***	.43***	-.02	.41***
7. Injunctive norms	.03	.06	.23***	.20***	.15**	.49***	-	.49***	.02	.46***
8. Descriptive norms	-.01	.10	.26***	.21***	.07	.40***	.45***	-	.04	.38***
9. PBC	-.09	.01	.06	.01	-.08	.10	-.10	.05	-	.07
10. Intent	-.02	.02	.31***	.19***	.18***	.53***	.48***	.27***	.04	-
Sexual coercion										
1. Age	-	<.01	.15**	.12	.12	.13	.04	.03	-.06	.06
2. Gender	-.02	-	.04	.13	-.13	.02	.09	.12	.04	.08
3. Past perpetration	.14**	.04	-	.40***	.04	.59***	.36***	.40***	.08	.56***
4. Past victimization	.12	.13*	.40***	-	-.08	.28***	.25***	.27***	.12	.28***
5. Gender Norms	.15**	-.17**	.05	-.08	-	.11	.06	.03	-.09	.09

6. Attitudes	.09	.02	.56***	.30***	.13	-	.50***	.45***	.02	.51***
7. Injunctive norms	<.01	.11	.33***	.21***	.09	.57***	-	.61***	.08	.47***
8. Descriptive norms	-.01	.12	.38***	.23***	.06	.51***	.70***	-	.14*	.45***
9. PBC	-.05	.03	.10	.11	-.10	.10	.08	.16**	-	.07
10. Intent	.30	.05	.50***	.26***	.14**	.62***	.56***	.45***	.09	-

Notes. $N = 352$. Gender: male = 1, female =2; PBC = perceived behavioural control.
Pearson's correlations are below the diagonal, Spearman's *Rho* are above the diagonal.
Bonferroni Correction applied.
$^{*}p < .013$, $^{**}p < .01$, $^{***}p < .001$

Table 6

Total, Direct and Indirect Effects of Hypothesized Antecedents on Intentions to Perpetrate Digital Monitoring and Control

Parameter	*B*	95% CI for *B*		*B SE*	β
		LL	UL		
Past perpetration → Intent					
Total	**.36*****	.24	.48	.06	.17
Indirect (total)	**.24*****	.13	.37	.06	.11
Attitudes	**.13*****	.05	.22	.04	
Injunctive norms	**.08****	.03	.15	.03	
Descriptive norms	.03	-.004	.09	.02	
PBC	<.01	-.01	.02	.01	
Direct Effects	.12	<.01	.23	.06	.05
Past victimization → Intent					
Total	**.47*****	.30	.63	.08	.24
Indirect (total)	**.35*****	.23	.47	.06	.18
Attitudes	**.17*****	.08	.27	.05	
Injunctive norms	**.12****	.05	.22	.04	
Descriptive norms	.05	-.01	.12	.03	
PBC	.01	-.01	.03	.01	
Direct Effects	.13	-.01	.26	.07	.06
Gender norm beliefs → Intent					
Total	**.19****	.08	.29	.05	.24
Indirect (total)	**.09****	.04	.14	.03	.11
Attitudes	**.05****	.01	.09	.02	
Injunctive norms	**.03****	.01	.07	.02	
Descriptive norms	.01	-.001	.02	.01	
PBC	<.01	-.01	<.01	<.01	
Direct	.10	.01	.19	.05	.13

Note. *N* = 352. PBC= perceived behavioural control. Age and gender (male =1, female = 2) were entered as exogenous predictors of all TPB variables. 95% CI = percentile confidence interval based on 5000 bootstrap samples.
Bonferroni Correction applied.
$^{**}p < .01$, $^{***}p < .001$

Table 7

Total, Direct and Indirect Effects of Hypothesized Antecedents on Intentions to Perpetrate Digital Direct Aggression

Parameter	*B*	95% CI for *B*		*B SE*	β
		LL	UL		
Past perpetration → Intent					
Total	**.12****	.08	.16	.02	.25
Indirect (total)	**.06****	.03	.10	.02	.13
Attitudes	**.05****	.02	.08	.02	
Injunctive norms	.02	<.01	.05	.01	
Descriptive norms	<01	-.02	.02	.01	
PBC	<.01	-.002	<.01	<.01	
Direct Effects	**.06****	.02	.10	.02	.12
Past victimization → Intent					
Total	**.06****	.02	.10	.02	.13
Indirect (total)	**.04****	.01	.08	.02	.08
Attitudes	**.02****	.01	.05	.01	
Injunctive norms	.02	<.01	.05	.01	
Descriptive norms	<.01	-.02	.01	.01	
PBC	<.01	-.002	<.01	<.01	
Direct Effects	.02	-.02	.06	.02	.04
Gender norm beliefs → Intent					
Total	.04	<.01	.08	.02	.18
Indirect (total)	.02	<.01	.05	.01	.08
Attitudes	.01	-.002	.02	.01	
Injunctive norms	.01	<.01	.03	.01	
Descriptive norms	<.01	-.004	<.01	<.01	
PBC	<.01	-.002	<.01	<.01	
Direct	.02	-.003	.04	.01	.10

Note. N = 352. PBC= perceived behavioural control. Age and gender (male =1, female = 2) were entered as exogenous predictors of all TPB variables. 95% CI = percentile confidence interval based on 5000 bootstrap samples.
Bonferroni Correction applied.
$^{**}p < .01$, $^{***}p < .001$

Table 8

Total, Direct and Indirect Effects of Hypothesized Antecedents on Intentions to Perpetrate Digital Sexual Coercion

Parameter	*B*	95% CI for *B*		*B SE*	β
		LL	UL		
Past perpetration → Intent					
Total	**.57*****	.40	.75	.09	.47
Indirect (total)	**.29*****	.15	.50	.09	.24
Attitudes	**.19****	.04	.37	.09	
Injunctive norms	**.12****	.02	.25	.06	
Descriptive norms	-.02	-.10	.07	.04	
PBC	<.01	-.01	.01	<.01	
Direct Effects	**.28*****	.11	.43	.08	.23
Past victimization → Intent					
Total	**.10****	.03	.17	.04	.09
Indirect (total)	**.07****	.01	.13	.03	.06
Attitudes	.04	<.01	.09	.02	
Injunctive norms	.04	<.01	.09	.02	
Descriptive norms	<.01	-.03	.02	.01	
PBC	<.01	-.002	.01	<.01	
Direct Effects	.03	-.03	.09	.03	.03
Gender norm beliefs → Intent					
Total	.07	.002	.14	.04	.15
Indirect (total)	.03	<.01	.08	.02	.06
Attitudes	.02	<.01	.06	.02	
Injunctive norms	.02	-.003	.05	.01	
Descriptive norms	<.01	-.01	.01	<.01	
PBC	<.01	-.01	<.01	<.01	
Direct	.04	-.02	.09	.03	.08

Note. N = 352. PBC= perceived behavioural control. Age and gender (male =1, female = 2) were entered as exogenous predictors of all TPB variables. 95% CI = percentile confidence interval based on 5000 bootstrap samples.
Bonferroni Correction applied.
$^{**}p < .01$, $^{***}p < .001$

Table 9

Demographic Characteristics by Recruitment Source

Variable	Total Sample (*N* = 331)	University recruited (*n* = 285)	Social media recruited (*n* = 46)	Fisher Exact Test
	% (n)	*% (n)*	*% (n)*	
Age M (*SD*)	20.40 (1.95)	20.09 (1.74)	22.35 (2.07)	<.001
Gender				<.001
Male	18.1 (60)	14.0 (40)	43.5 (20)	
Female	81.9 (271)	86.0 (245)	56.5 (26)	
Race/Ethnicity				.126
White	77.3 (256)	78.6 (224)	69.6 (32)	
Black	6.0 (20)	5.6 (16)	8.7 (4)	
Asian	5.7(19)	5.3 (15)	8.7 (4)	
Hispanic	3.0 (10)	2.5 (7)	6.5 (3)	
Arab	2.4 (8)	2.8 (8)	0.0 (0)	
Indigenous	1.5 (5)	1.4 (4)	2.2 (1)	
Other/Prefer not to answer	3.9 (13)	3.9 (11)	4.4 (2)	
Country				<.001
Canada	88.5 (293)	99.6 (284)	19.6 (9)	
United States	11.5 (38)	0.4 (1)	80.4 (37)	
Highest level of education				<.001
High school or equivalent	32.6 (108)	34.4 (98)	21.7 (10)	
Some college/university but not degree	58.6 (194)	62.1(177)	37.0 (17)	
Associate degree	0.9 (3)	0.7 (2)	2.2 (1)	
Bachelor's degree	7.3 (24)	2.8 (8)	34.8 (16)	
Graduate degree	0.6 (2)	0.0 (0)	4.3 (2)	
Sexual Orientation				.007
Heterosexual	68.0 (225)	69.5 (198)	58.7 (27)	
Bisexual	20.5 (68)	20.0 (57)	23.9 (11)	
Gay	3.0 (10)	1.4 (4)	13.0 (6)	
Lesbian	2.7 (9)	2.8 (8)	2.2 (1)	
Other/Prefer not to answer	5.7 (19)	6.4 (17)	2.2 (1)	
Relationship Status				.058
Dating	55.6 (184)	55.1 (157)	58.7 (27)	
Married/Common-law	6.6 (22)	5.3 (15)	15.2 (7)	
Single	36.6 (121)	38.2 (109)	26.1 (12)	
Other	1.2 (4)	1.4 (4)	0.0 (0)	

Note. ‡ Welch's $t(55.7) = -7.02$, $p < .001$, Levene's test for equality of variance indicated unequal variances ($F = 4.95$, $p = .027$)

Table 10

Differences Between University- and Social Media-Recruited Samples on Key Help-Seeking Variables.

Variable	University recruited		Social media recruited		*t*	*df*	*p*
	M	*SD*	*M*	*SD*			
Fear	2.65	1.95	4.17	2.27	**-4.31**	**56.14**	**<.001**
Chronicity	1.71	.71	1.89	.74	-1.61	329	.108
Gender norms	2.64	1.09	3.74	2.04	**-3.58**	**49.26**	**<.001**
Past use of services	.18	.38	.37	.49	**-2.53**	**54.36**	**.014**
Perceived barriers	3.98	1.37	3.68	.99	-.02	76.25	.982
Attitudes	4.47	1.47	4.74	1.33	-1.18	329	.240
PBC	5.98	1.09	5.95	.95	-.21	329	.837
Intent	3.43	2.26	4.29	2.25	**-2.41**	**329**	**.016**

Notes. University-recruited, $n = 285$, social media-recruited, $n = 46$. PBC = perceived behavioural control.

Table 11

Descriptive Statistics for Help-Seeking-Related Variables.

Variables	*M* (*SD*)	Range	α
Fear	2.86 (2.06)	1-7	-
Chronicity	1.73 (.72)	1-3	-
Gender norms	2.79 (1.32)	1-7.77	.79
Past use of services	.21 (.41)	0-1	-
Perceived barriers	3.98 (1.33)	1-7	.79
Attitudes	4.51 (1.46)	1-7	.89
PBC	5.98 (1.08)	1-7	.71
Intent	3.55 (2.27)	1-7	-

Note. *N* = 331. PBC = perceived behavioural control. Mean scores are based on a 7-point scale (1 – 7), expect for chronicity (1 – 3), gender norms (0 – 10), and past use of services (0 – 1). Cronbach's α not available for single-item measures.

Table 12

Correlations for Help-Seeking-Related Variables.

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. Age	-	-.08	.20**	.10	.13	.12	.10	.16**	-.14	.17**
2. Gender	-.10	-	.04	.12	-.18**	.03	.05	.08	-.01	.10
3. Fear	.23***	.05	-	.41**	-.02	.38**	.26**	.22**	-.22**	.44**
4. Chronicity	.09	.13	.41***	-	-.09	.20**	.05	.05	-.08	.19**
5. Gender norms	.17**	-.26***	.03	-.06	-	-.08	-.07	-.07	.02	-.07
6. Past use of services	.16**	.03	.38***	.19***	-.03	-	.14	.21**	-.14	.49**
7. Perceived barriers	.12**	.05	.23***	.05	-.07	.12*	-	.02	-.40**	.06
8. Attitudes	.15**	.07	.23***	.06	-.07	.20***	.04	-	-.01	.42**
9. PBC	-.11	-.02	-.18**	-.06	.01	-.15**	-.38***	.04	-	-.05
10. Intent	.17**	.10	.41***	.17**	-.01	.50***	.06	.42***	-.04	-

Notes. $N = 331$. Gender: male =1, female = 2. PBC = perceived behavioural control. Pearson's correlations are below the diagonal, Spearman's *Rho* are above the diagonal.
Bonferroni Correction applied.
$^{**}p < .01$, $^{***}p < .001$

Table 13

Direct and Indirect Effects of Theory of Planned Behaviour Variables and Hypothesized Antecedents on Intentions to Seek Help following Digital Dating Abuse Victimization.

Parameter	*B*	95% CI for *B*		*SE B*	β
		LL	UL		
Fear → Attitudes	**.14****	.05	.23	.05	.20
Fear → PBC	-.03	-.09	.03	.03	-.07
Chronicity (1 month to 1 year)[a] → Attitudes	-.29	-.65	.06	.18	-.10
Chronicity (1 month to 1 year)[a] → PBC	.10	-.12	.33	.12	.05
Chronicity (>1 year) → Attitudes	-.20	-.65	.26	.23	-.05
Chronicity (>1 year) → PBC	-.03	-.33	.27	.15	-.01
Gender norms → Attitudes	-.11	-.23	.01	.06	-.10
Gender norms → PBC	<.01	-.10	.10	.05	<.01
Perceived barriers → Attitudes	-.04	-.17	.08	.07	-.04
Perceived barriers → PBC	**-.28****	-.37	-.19	.05	-.35
Past use of services → Attitudes	.47	.07	.84	.20	.13
Past use of services → PBC	-.22	-.59	.12	.18	-.08
Attitudes → Intent	**.47*****	.32	.62	.08	.30
PBC → Intent	.05	-.16	.26	.11	.03

Note. *N* = 331. PBC = perceived behavioural control. 95% CI = percentile confidence interval based on 5000 bootstrap samples.

[a] Chronicity (less than 1 month) was set as reference group.

Bonferroni Correction applied.

$^{**}p < .01$, $^{***}p < .001$

Table 14

Total, Direct and Indirect Effects of Hypothesized Antecedents on Help-seeking Intentions following Digital Dating Abuse Victimization

Parameter	*B*	95% CI for *B*		*SE B*	β
		LL	UL		
Fear → Intent					
Total	**.29*****	.16	.42	.07	.27
Indirect (total)	**.07****	.02	.11	.03	.06
Attitudes	**.07****	.02	.12	.08	
PBC	<.01	.02	.01	.03	
Direct	**.19****	.07	.32	.06	.18
Chronicity (1 month to 1 year)[a] → Intent					
Total	.19	-.28	.66	.24	.04
Indirect (total)	-.13	-.31	.04	.09	-.03
Attitudes	-.14	-.31	.03	.02	
PBC	.01	.04	.03	.01	
Direct	.37	-.07	.80	.22	.08
Chronicity (> 1 year) [a] → Intent					
Total	-.20	-.80	.42	.31	-.03
Indirect (total)	-.10	-.32	.12	.13	-.02
Attitudes	-.10	-.30	.13	.09	
PBC	<.01	-.05	.03	.02	
Direct	-.15	-.72	.43	.29	-.02
Gender norm beliefs → Intent					
Total	-.04	-.21	.15	.09	.27
Indirect (total)	-.05	-.12	.01	.04	-.03
Attitudes	-.05	-.12	.01	.02	
PBC	<.01	-.01	.01	.01	
Direct	.01	-.15	.18	.08	.01
Perceived barriers → Intent					
Total	-.11	-.27	.05	.08	-.07
Indirect (total)	-.04	-.13	.05	.05	-.02
Attitudes	-.02	-.09	.04	.03	
PBC	-.02	-.08	.04	.03	
Direct	-.08	-.24	.09	.09	-.05
Past use of services → Intent					
Total	**2.24*****	1.68	2.77	.28	.40
Indirect (total)	.21	.02	.41	.12	.04
Attitudes	.22	.03	.41	.08	
PBC	-.01	-.07	.06	.03	
Direct	**1.92*****	1.41	2.42	.26	.34

Note. N = 331. PBC = perceived behavioural control. 95% CI = percentile confidence interval based on 5000 bootstrap samples.

[a] Chronicity (less than 1 month) was set as reference group.

$^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$

Figure 1

Ajzen's The Theory of Planned Behaviour (Ajzen, 1991).

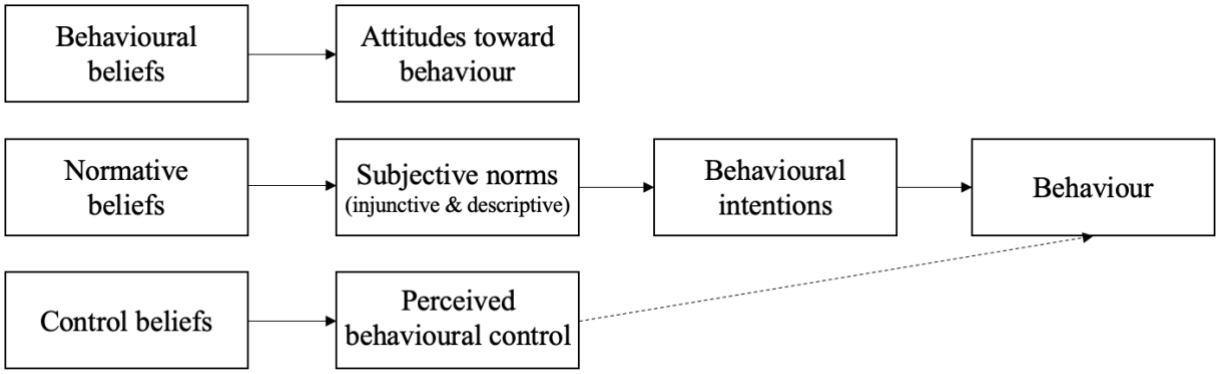
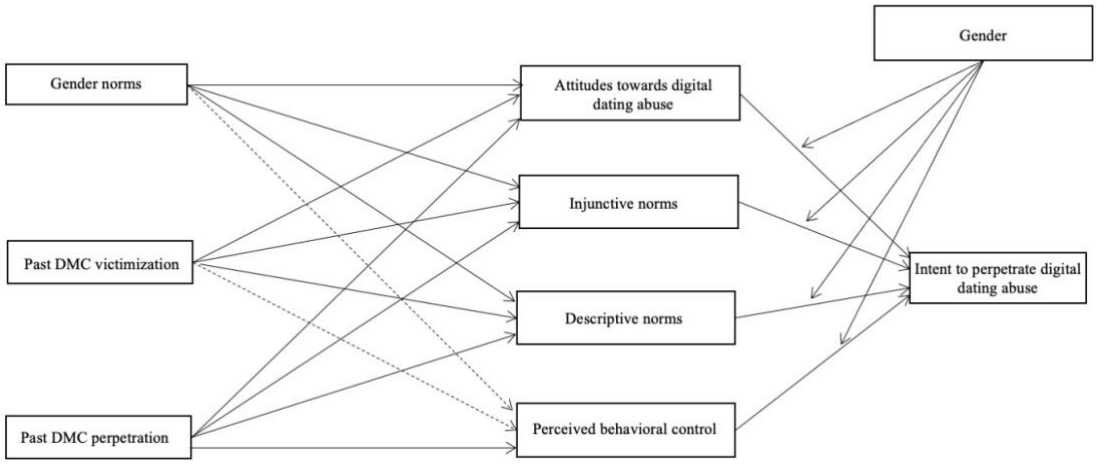


Figure 2

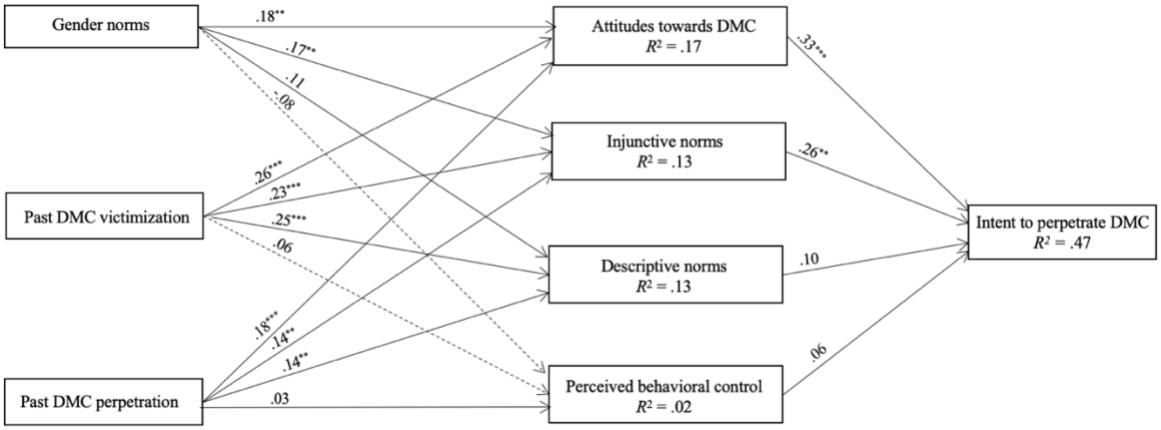
Hypothesized Path for the Perpetration of Each of the Distinct Forms of Digital Dating Abuse (Digital Monitoring or Control, Digital Direct Aggression, and Digital Sexual Coercion).



Note. Solid lines indicate a hypothesized and test path while dotted lines indicate paths that were tested but not specifically hypothesized.

Figure 3

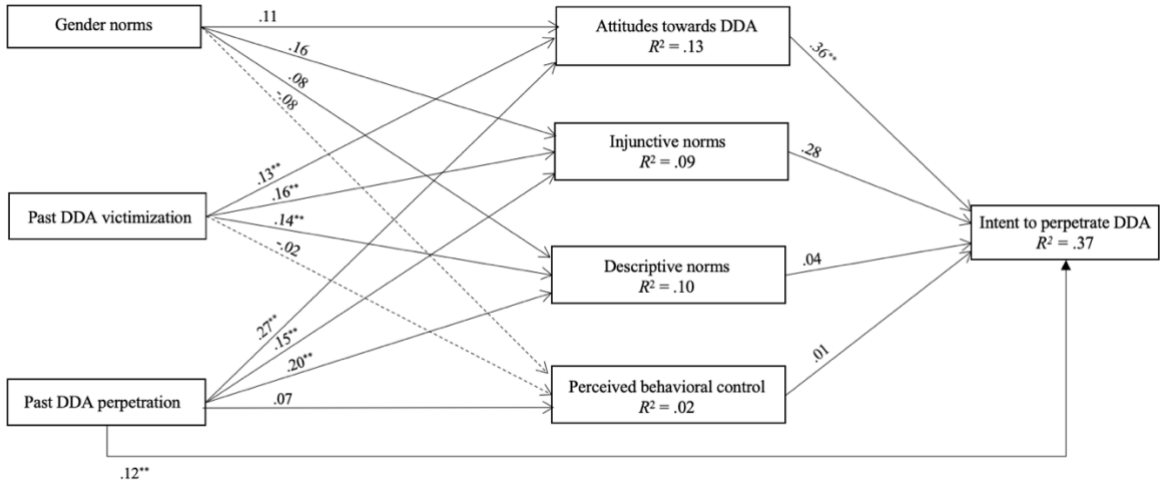
Direct Effects for Digital Monitoring and Control Model



Note. N = 352. DMC = digital monitoring and control; Coefficients are presented as standardized regression coefficients. Solid lines indicate a hypothesized and test path while dotted lines indicate paths that were tested by not specifically hypothesized. Only significant direct effects between antecedents and intent are shown. Age and gender (male = 1; female =2) were included as exogenous predictors of all TPB variables; however, paths are not shown for reasons of parsimony reasons.
Bonferroni Correction applied.
**p < .01, ***p < .001

Figure 4

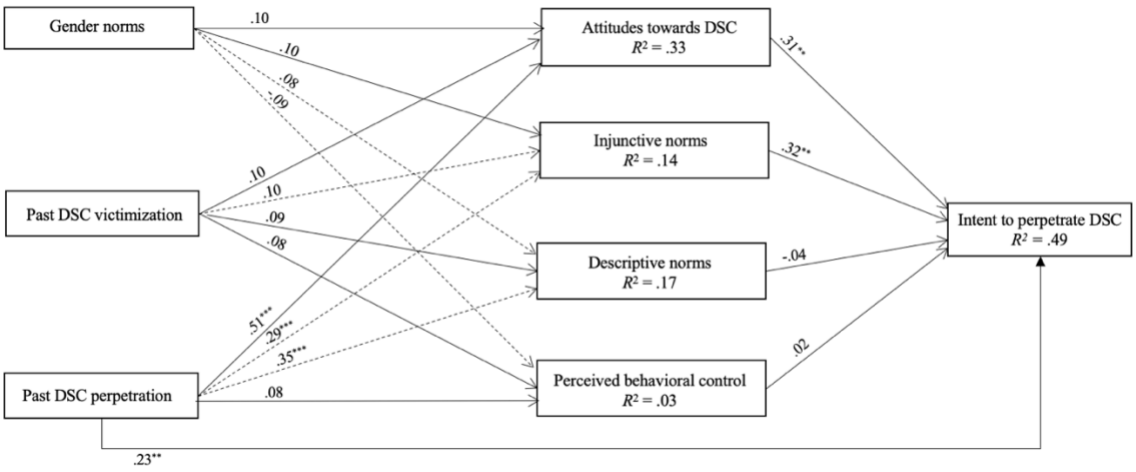
Direct Effects for Digital Direct Aggression Model



Note. N = 352. DDA = digital direct aggression; Coefficients are presented as standardized regression coefficients. Solid lines indicate a hypothesized and test path while dotted lines indicate paths that were tested by not specifically hypothesized. Only significant direct effects between antecedents and intent are shown. Age and gender (male = 1; female =2) were included as exogenous predictors of all TPB variables; however, paths are not shown for reasons of parsimony reasons

Figure 5

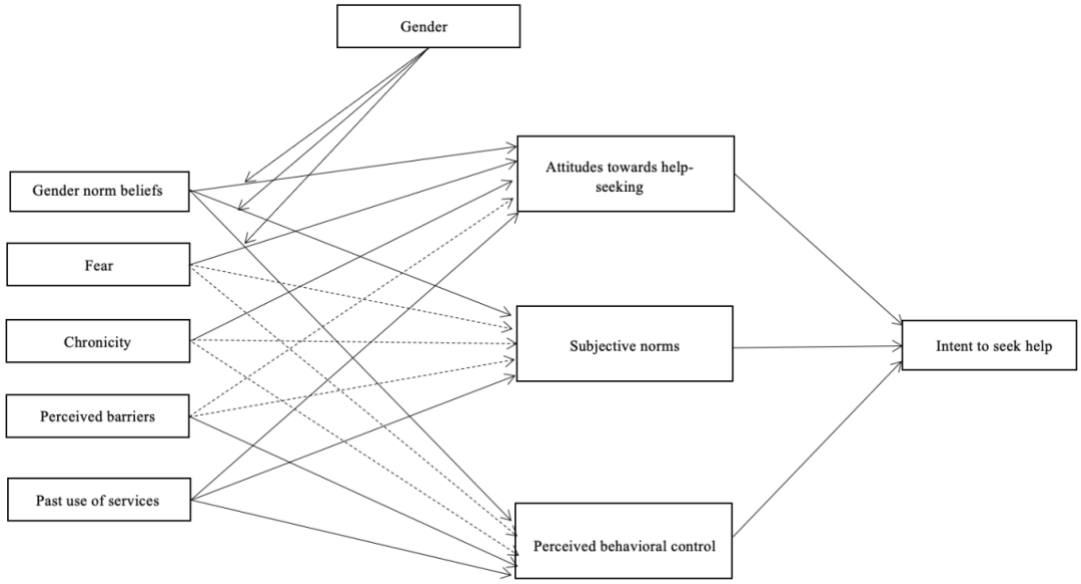
Direct Effects for Digital Sexual Coercion Model



Note. N = 352. DSC = digital sexual coercion; Coefficients are presented as standardized regression coefficients. Solid lines indicate a hypothesized and test path while dotted lines indicate paths that were tested by not specifically hypothesized. Only significant direct effects between antecedents and intent are shown. Age and gender (male = 1; female =2) were included as exogenous predictors of all TPB variables; however, paths are not shown for reasons of parsimony reasons.

Figure 6

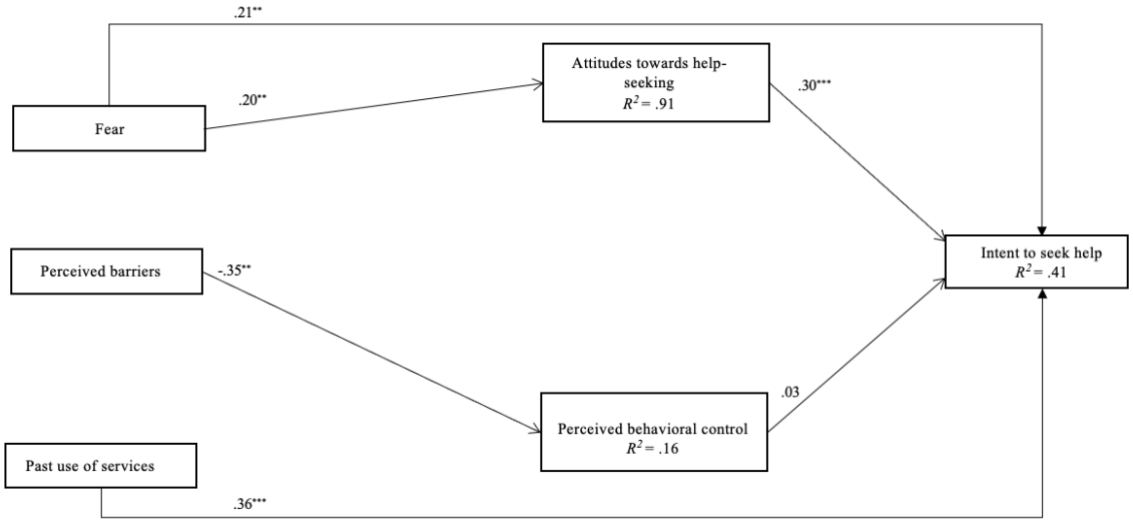
Hypothesized Path for Help-Seeking Behaviors of DDA Victims.



Note. Solid lines indicate a hypothesized and test path while dotted lines indicate paths that were tested by not specifically hypothesized.

Figure 7

Direct Effects for Help-Seeking Intentions



Note. N = 331. Coefficients are presented as standardized regression coefficients. Only significant direct effects between antecedents, TPB variables, and intent are shown. Age was included as exogenous predictor of all TPB variables; however, paths are not shown for reasons of parsimony reasons.

Appendix A: Wave 1 Questionnaire (Perpetration Measures)

Q1. The following information is collected to generate a participant identifier to help track your data over time (please keep a copy of this identifier code created by the next four questions):

A. First letter of mother's first name?
B. Number of older brothers (living and deceased)?
C. Number representing the month you were born?
D. First letter of middle name (if none, use X)?

Q2. Which country do you reside in?
☐ Canada
☐ United States
☐ Other [If participant indicates "other", they will be directed to end of survey]

Q3. How old are you? [If participants selects under 18 or over 25, they will be directed to the end of the survey]
☐ under 18
☐ 18
☐ 19
☐ 20
☐ 21
☐ 22
☐ 23
☐ 24
☐ 25
☐ over 25

Q4. Which of the following best describes your gender?
☐ Male
☐ Female
☐ Non-binary
☐ Prefer to self-describe (please specify)
☐ Prefer not to answer

Q5. Do you consider yourself to be part of the LGBTQ2+ community?
☐ Yes
☐ No
☐ Prefer not to answer

Q6. Which of the following best describes your ethnicity?
☐ White (European American, European Canadian)
☐ Indigenous
☐ Arab (Saudi, Egyptian, Iraqi, Lebanese, Palestinian, Syrian, etc.)
☐ Black (African American, African Canadian, Caribbean, etc.)

☐ Hispanic, Latinx
☐ Asian
☐ Other (please specify)
☐ Prefer not to answer

Q7. What is the highest level of school you have completed or the highest degree you have received?
☐ Less than high school diploma
☐ High school degree or equivalent (e.g., GED)
☐ Some college/university but no degree
☐ Associate degree
☐ Bachelor degree
☐ Graduate degree
☐ Prefer not to answer

Q8. What is your sexual orientation?
☐ Heterosexual or straight
☐ Gay
☐ Lesbian
☐ Bisexual
☐ Not listed above (please specify)
☐ Prefer not to answer

Q9. What is your current relationship status?
☐ Dating
☐ Married/Common-law (i.e., living with a romantic partner for a year or longer)
☐ Single
☐ Other (please specify)

Survey Measures

Q10. Dating partner is defined as ANY of the following: a boyfriend or girlfriend, someone you are a 'thing' with, someone you have dated or are currently dating, someone who you like or love and spend time with, or a relationship that might involve sex. Based on this definition, have you had a dating partner since the age of 18?
☐ Yes
☐ No

[If participant indicates "no", they will be directed to end of survey]

Q11. INSTRUCTIONS: We would like to know whether you have ever done any of the following things to a dating partner (current or past) using the internet or a cell phone.

I have… [Items in table randomized].

[Digital monitoring or control]	Never (0)			Very often (3)
Pressured my partner to respond quickly to calls, texts, or other messages	☐			☐
Monitored my partner's whereabouts and activities	☐			☐
Sent so many messages it made my partner feel uncomfortable	☐			☐
Monitored who my partner talks to and is/was friends with	☐			☐
Pressured my partner for passwords to access cell phone or online accounts	☐			☐
Used private information to check on my partner without my partner's permission	☐			☐
[Direct digital aggression]				
Shared embarrassing content (photo or video) with others without my partner's permission	☐			☐
Sent my partner a mean or hurtful PRIVATE message	☐			☐
Posted a mean or hurtful PUBLIC message about my partner using social media	☐			☐
Spread a rumor about my partner	☐			☐
Sent a threatening message to my partner	☐			☐
Threatened to harm my partner physically	☐			☐
Used cell phone or online account to pretend to be my partner without my partner's permission	☐			☐
Used information on social network sites to tease my partner	☐			☐
[Digital sexual coercion]				
Pressured my partner to sext	☐			☐
Sent a sexual or naked photo/video of self to my partner without my partner's consent	☐			☐
Sent a sexual or naked photo/video of my partner to others without my partner's consent	☐			☐
ATTENTION CHECK: To help reduce the risk of bots, please select "very often" as your response.				
Pressured my partner to have sex or do other sexual activity	☐			☐

Q12. INSTRUCTIONS: For each behavior, please indicate which best describes your opinion. [Items to be randomized]

A. To me, pressuring my partner to respond quickly to calls, texts, or other messages is…
Unenjoyable 1 : 2 : 3 : 4 : 5 : 6 : 7 Enjoyable
Harmful to me 1 : 2 : 3 : 4 : 5 : 6 : 7 Beneficial to me

B. To me, monitoring my partner's whereabouts and activities is…
Unenjoyable 1 : 2 : 3 : 4 : 5 : 6 : 7 Enjoyable

Harmful to me 1 : 2 : 3 : 4 : 5 : 6 : 7 Beneficial to me

C. To me, sending my partner a lot of messages is…
Unenjoyable 1 : 2 : 3 : 4 : 5 : 6 : 7 Enjoyable
Harmful to me 1 : 2 : 3 : 4 : 5 : 6 : 7 Beneficial to me

To me, monitoring who my partner talks to and is friends with is…
Unenjoyable 1 : 2 : 3 : 4 : 5 : 6 : 7 Enjoyable
Harmful to me 1 : 2 : 3 : 4 : 5 : 6 : 7 Beneficial to me

D. To me, pressuring my partner for passwords to their cell phone and online accounts is…
Unenjoyable 1 : 2 : 3 : 4 : 5 : 6 : 7 Enjoyable
Harmful to me 1 : 2 : 3 : 4 : 5 : 6 : 7 Beneficial to me

E. To me, using private information to heck on my partner without my partner's permission is…
Unenjoyable 1 : 2 : 3 : 4 : 5 : 6 : 7 Enjoyable
Harmful to me 1 : 2 : 3 : 4 : 5 : 6 : 7 Beneficial to me

F. To me, sharing, embarrassing content (photo or video) of my partner with others without my partner's permission is…
Unenjoyable 1 : 2 : 3 : 4 : 5 : 6 : 7 Enjoyable
Harmful to me 1 : 2 : 3 : 4 : 5 : 6 : 7 Beneficial to me

G. To me, sending my partner a mean or hurtful message…
Unenjoyable 1 : 2 : 3 : 4 : 5 : 6 : 7 Enjoyable
Harmful to me 1 : 2 : 3 : 4 : 5 : 6 : 7 Beneficial to me

H. To me, posting a mean or hurtful public message about my partner using social media is…
Unenjoyable 1 : 2 : 3 : 4 : 5 : 6 : 7 Enjoyable
Harmful to me 1 : 2 : 3 : 4 : 5 : 6 : 7 Beneficial to me

I. To me, spreading a rumor about my partner is…
Unenjoyable 1 : 2 : 3 : 4 : 5 : 6 : 7 Enjoyable
Harmful to me 1 : 2 : 3 : 4 : 5 : 6 : 7 Beneficial to me

J. To me, sending my partner a threatening message is…
Unenjoyable 1 : 2 : 3 : 4 : 5 : 6 : 7 Enjoyable
Harmful to me 1 : 2 : 3 : 4 : 5 : 6 : 7 Beneficial to me

K. To me, threatening to harm my partner physically is…
Unenjoyable 1 : 2 : 3 : 4 : 5 : 6 : 7 Enjoyable
Harmful to me 1 : 2 : 3 : 4 : 5 : 6 : 7 Beneficial to me

L. To me, using a cell phone or online account to pretend to be my partner without my partner's permission is…

Unenjoyable 1 : 2 : 3 : 4 : 5 : 6 : 7 Enjoyable
Harmful to me 1 : 2 : 3 : 4 : 5 : 6 : 7 Beneficial to me

M. To me, using information on social network sites to tease my partner is…
Unenjoyable 1 : 2 : 3 : 4 : 5 : 6 : 7 Enjoyable
Harmful to me 1 : 2 : 3 : 4 : 5 : 6 : 7 Beneficial to me

N. To me, pressuring my partner to sext is…
Unenjoyable 1 : 2 : 3 : 4 : 5 : 6 : 7 Enjoyable
Harmful to me 1 : 2 : 3 : 4 : 5 : 6 : 7 Beneficial to me

O. To me, sending a sexual or naked photo of myself to my partner without my partner's permission is…
Unenjoyable 1 : 2 : 3 : 4 : 5 : 6 : 7 Enjoyable
Harmful to me 1 : 2 : 3 : 4 : 5 : 6 : 7 Beneficial to me

P. To me, sending a sexual or naked photo of my partner to others without my partner's permission is…
Unenjoyable 1 : 2 : 3 : 4 : 5 : 6 : 7 Enjoyable
Harmful to me 1 : 2 : 3 : 4 : 5 : 6 : 7 Beneficial to me

Q. To me, pressuring my partner to have sex or do other sexual activities is…
Unenjoyable 1 : 2 : 3 : 4 : 5 : 6 : 7 Enjoyable
Harmful to me 1 : 2 : 3 : 4 : 5 : 6 : 7 Beneficial to me

Q13. INSTRUCTIONS: Please indicate the level of agreement you have with the following statements. [Items to be randomized]

A. People who are important to me think I should pressure my partner to respond quickly to calls, texts, or other messages
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

B. People who are important to me pressure their partners to respond quickly to calls, texts, or other messages
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

C. People who are important to me think I should monitor my partner's whereabouts and activities
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

D. People who are important to me monitor their partner's whereabouts and activities
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

E. People who are important to me think I should send a lot of messages to my partner
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

F. People who are important to me send a lot of messages to their partner
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

G. People who are important to me think I should monitor who my partner talks to and is friends with
Strongly disagree1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

H. People who are important to me monitor who their partners talk to and are friends with
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

I. People who are important to me think I should pressure my partner for passwords to access a cell phone or online accounts
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

J. People who are important to me pressure their partners for passwords to access a cell phone or online accounts
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

K. People who are important to me think I should use private information to check on my partner without my partner's permission
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

L. People who are important to me use private information to check on their partners without their partners' permission
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

M. People who are important to me think I should share embarrassing content (photo or video) of my partner with others without my partner's permission
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

N. People who are important to me share embarrassing content (photo or video) of their partners with others without their partners' permission
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

O. People who are important to me think I should send my partner mean or hurtful private messages
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

P. People who are important to me send their partners mean or hurtful private messages
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

Q. People who are important to me think I should post mean or hurtful public messages about my partner using social media
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

R. People who are important to me post mean or hurtful public messages about their partners using social media
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

S. People who are important to me think I should spread rumors about my partner
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

T. People who are important to me spread rumors about their partners
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

U. People who are important to me think I should send my partner threatening messages
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

V. People who are important to me send their partners threatening messages
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

W. People who are important to me think I should threaten to harm my partner physically
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

X. People who are important to me threaten to harm their partners physically
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

Y. People who are important to me think I should use a cell phone or online account to pretend to be my partner
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

Z. People who are important to me use cell phones or online accounts to pretend to be their partner
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

AA. People who are important to me think I should use information on social network sites to tease my partner
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

BB. People who are important to me use information on social network sites to tease their partners
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

CC. People who are important to me think I should pressure my partner to sext
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

DD. People who are important to me pressure their partners to sext
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

EE. People who are important to me think I should send sexual or naked photo/videos of myself to my partner without my partner's permission

Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

FF. People who are important to me send sexual or naked photo/videos of themselves to their partners without their partners' permission
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

GG. People who are important to me think I should send sexual or naked photo/videos of my partner to others without my partner's consent
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

HH. People who are important to me send sexual or naked photo/videos of their partners to others without their partners' consent
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

II. People who are important to me think I should pressure my partner to have sex or do other sexual activities
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

JJ. People who are important to me pressure their partners to have sex or do other sexual activities
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

Q14. INSTRUCTIONS: Please indicate the level of agreement you have with the following statements. [Items to be randomized]

A. Using the internet or a cell phone, it is easy to pressure someone to respond quickly to calls, texts, or other messages
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

B. Using the internet or a cell phone, it is easy to monitor someone's whereabouts and activities
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

C. Using the internet or a cell phone, it is easy to send a lot of messages that makes someone feel uncomfortable
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

D. Using the internet or a cell phone, it is easy to monitor who someone talks to and is/was friends with
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

E. Using the internet or a cell phone, it is easy to pressure someone for passwords to access a cell phone or online accounts
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

F. Using the internet or a cell phone, it is easy to use private information to check on someone without their permission
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

G. Using the internet or a cell phone, it is easy to share embarrassing content (photo or video) of someone else with others without their permission
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

H. Using the internet or a cell phone, it is easy to send someone a mean or hurtful private message
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

I. Using the internet or a cell phone, it is easy to post a mean or hurtful public message about someone using social media
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

J. Using the internet or a cell phone, it is easy to spread a rumor about someone
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

K. Using the internet or a cell phone, it is easy to send someone a threatening message
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

L. Using the internet or a cell phone, it is easy to threaten to harm someone physically
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

M. Using the internet or a cell phone, it is easy to use a cell phone or online account to pretend to be someone else
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

N. Using the internet or a cell phone, it is easy to use information on social network sites to tease someone
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

O. Using the internet or a cell phone, it is easy to pressure someone to sext
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

P. Using the internet or a cell phone, it is easy to send a sexual or naked photo/video of myself to someone without their consent
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

Q. Using the internet or a cell phone, it is easy to send a sexual or naked photo/video of someone else to others without their consent
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

R. Using the internet or a cell phone, it is easy to pressure someone to have sex or do other sexual activities

Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

Q15. ATTENTION CHECK: To help reduce the risk of bots, please enter CLOUD into the textbox.

Q16. INSTRUCTIONS: Indicate how likely it is that you will engage in one of the following behaviors using the internet or cell phone within the next 4 weeks? [Items to be randomized]

A. Pressure my partner to respond quickly to calls, texts, or other messages
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

B. Monitor my partner's whereabouts and activities
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

C. Send so many messages it makes my partner feel uncomfortable
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

D. Monitor who my partner talks to and is/was friends with
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

E. Pressure my partner for passwords to access cell phone or online accounts
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

F. Use private information to check on my partner without permission
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

G. Share embarrassing content (photo or video) with others without my partner's permission
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

H. Send my partner a mean or hurtful private message
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

I. Post a mean or hurtful public message about my partner using social media
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

J. Spread a rumor about my partner
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

K. Threaten to harm my partner physically
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

L. Use cell phone or online account to pretend to be my partner
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

M. Use information on social network sites to tease my partner
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

N. Pressure my partner to sext
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

O. Send a sexual or naked photo/video of myself to my partner without my partner's consent
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

P. Send a sexual or naked photo/video of my partner to others without my partner's consent
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

Q. Pressured my partner to have sex or do other sexual activity
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

Q17. INSTRUCTIONS: Please indicate the level of agreement you have with the following statements. [Items to be randomized]

[Scale from 0 to 100% is anchored by "*strongly disagree*" and "*strongly agree*."]
A. People can be both aggressive and nurturing regardless of sex*
B. People should be treated the same regardless of their sex*
C. The freedom that children are given should be determined by their age and maturity level and not by their sex*.
D. Tasks around the house should not be assigned by sex*
E. We should stop thinking about whether people are male or female and focus on other characteristics*
F. A father's major responsibility is to provide financially for his children
G. Men are more sexual than women
H. Some types of work are just not appropriate for women
I. Mothers should make most decisions about how children are brought up
J. Mother should only work if necessary
K. Girls should be protected and watched over more than boys
L. Only some types of work are appropriate for men and women
M. For many important jobs, it is better to choose men instead of women.

[**Reversed-scored*]

Q18. INSTRUCTIONS: We would like to know whether <u>any dating partner (current or past)</u> has done any of the following things <u>to you</u> using the internet or a cell phone. My dating partner has…[items in table are randomized.]

[Digital monitoring or control]	Never (0)			Very often (3)
Pressured me to respond quickly to calls, texts, or other messages	☐	☐	☐	☐

Monitored my whereabouts and activities	☐	☐	☐	☐
Sent so many messages it made me feel uncomfortable	☐	☐	☐	☐
Monitored who I talk to and am/was friends with	☐	☐	☐	☐
Pressured me for passwords to access my cell phone or online accounts	☐	☐	☐	☐
Used private information to check on me without my permission	☐	☐	☐	☐
[Direct digital aggression]				
Shared embarrassing content (photo or video) with others without my permission	☐	☐	☐	☐
Sent me a mean or hurtful private message	☐	☐	☐	☐
Posted a mean or hurtful public message about me using social media	☐	☐	☐	☐
Spread a rumor about me	☐	☐	☐	☐
Sent a threatening message	☐	☐	☐	☐
Threatened to harm me physically	☐	☐	☐	☐
Used cell phone or online account to pretend to be me without my permission	☐	☐	☐	☐
Used information on social network sites to tease me	☐	☐	☐	☐
[Digital sexual coercion]				
Pressured me to sext	☐	☐	☐	☐
Sent a sexual or naked photo/video of self to me without my consent	☐	☐	☐	☐
Sent a sexual or naked photo/video of me to others without my consent	☐	☐	☐	☐
Pressured me to have sex or do other sexual activity	☐	☐	☐	☐

Appendix B: SONA and Social Media Recruitment

SONA Recruitment Statement

Study Name: Technology, Social Media and Romantic Relationships

Description: In this two-part online survey, you'll share your perception and experiences of cyber dating aggressions.

Social Media Recruitment Tag & Poster

We're looking for 18–25-year-olds who have been in at least one romantic partnership to participate in our two-part online study exploring your perception and experiences of cyber dating aggressions.

If interested, check out the poster and survey link or reach out to Jen at Jennifer.McArthur@smu.ca for more information.

Appendix C: Wave 1 Informed Consent Form (Saint Mary's University)

SMU SONA INFORMED CONSENT FORM
Technology, Social Media and Romantic Relationships (Survey 1)
SMU REB # 21-109

Dr. M. Ternes, J. McArthur & Dr. J. Blais
Department of Psychology
Saint Mary's University, 923 Robie Street, Halifax, NS B3H 3C3
Phone: (902) 420-5853
Email: Meg.Ternes@smu.ca; Jennifer.McArthur@smu.ca

INTRODUCTION
We would like to invite you to participate in our online study examining your perceptions and experiences of cyber dating aggressions. We are inviting you to participate in **part one** of a two-part study.

This research is being conducted in fulfillment of the master's requirements for Saint Mary's University's Department of Psychology.

WHAT IS THE PURPOSE OF THE STUDY?
The internet, social media and other cyber technologies are omni-present in the lives of emerging adults (i.e., ages of 18-25 years old) which inadvertently increases the number of opportunities to act aggressively towards a dating partner. This study aims to understand your perceptions of and experiences with cyber aggression in your romantic relationships (past or current). The data collected from this survey will contribute to a better understanding of the causes and consequences of cyber aggression, which in turn, may inform the development of prevention and intervention strategies.

WHO IS ELIGIBLE TO TAKE PART?
You are eligible to participate in the research if you are:
(a) aged 18 to 25, AND
(b) reside in Canada or the United States, AND
(c) are currently or have previously been involved in a dating relationship since the age of 18 defined as ANY of the following: a boyfriend or girlfriend, someone you are a 'thing' with, someone you have dated or are currently dating, someone who you like or love and spend time with, or a relationship that might involve sex.

WHAT DOES PARTICIPATING MEAN?
If you agree to participate in our study, you will complete a two-part study where you'll answer a series of questions around your perceptions of cyber aggressive acts carried out between dating partners, your experiences with cyber dating aggressions, aggressive acts you may have engaged in, and a short demographic questionnaire.

Some of the questions you may be asked are sensitive, but we ask that you answer these questions as honestly as possible. If you are not comfortable answering any questions, you may simply skip them. You will not be penalized for skipping questions, however, depending on how many questions you have skipped, your data may not be included in the study.

Some examples of the more sensitive questions you will be asked include:

- We would like to know whether you have ever done any of the following things to a dating partner (current or past) using the internet or a cell phone. I have…
  - Threatened my partner physically
  - Sent a sexual or naked photo/video of my partner to others without my partner's consent
- We would like to know whether any dating partner (current or past) has done any of the following things to you using the internet or a cell phone. My dating partner has…
  - Threatened me physically
  - Sent a sexual or naked photo/video of me to others without my consent

SURVEY 1: Survey 1 is expected to take 30 minutes to complete. Additionally, the research team will follow-up in four weeks (with your explicit permission) and invite you to complete an additional survey concerning your experiences with dating and technology since completing the first survey.

SURVEY 2: This follow-up survey, which will be completed four weeks after survey 1, is expected to take 5 to 10 minutes.

WHAT ARE THE POTENTIAL BENEFITS?

You may not receive any direct benefits from your participation in this study; however, your
participation in this research will help us to better understand how technology and social media are used and abused within romantic relationships.

WHAT ARE THE POTENTIAL RISKS?

You may experience some discomfort or minor distress given the nature of the questions. You may also be concerned about others finding out about your use of technology and social media. We want to assure you that your data will be anonymous and confidential.

Please remember that participation in this survey is voluntary and you can skip any particular questions you do not feel comfortable answering or withdraw at any time. Contact information for services will be made available in the debriefing form if needed and can be accessed by clicking the "Leave Now" button.

All information gathered from you will be kept confidential; however, there are exceptions to confidentiality that you should be aware of. If you tell us that a child or vulnerable adult is in danger - experiencing physical abuse, emotional abuse, sexual abuse, or neglect - and you provide us with identifying information, we are required by law to notify the authorities and we will do so.

WHAT WILL BE DONE WITH MY INFORMATION?
All information collected for this survey is confidential. You will not be asked to reveal your name or any other personally identifying information. Qualtrics collects IP Addresses of participants which can be considered identifying information. However, IP addresses will be removed from our dataset after initial accuracy checks are completed.

Data collected will be stored through Qualtrics on a secure server in Canada and will not be shared with any third parties. Access to the completed survey will be limited to the researchers involved with this project. The computer-transferred data will be retained for a minimum of 5 years after publication and stored on a secure storage device, after which the data will be destroyed (i.e., storage device will be wiped).

Once all the data are collected and analyzed for this study, we plan to share the information with the research community through conferences, presentations, journal articles, and/or book chapters. A subsequent data set, stripped of all potential identifying information, may subsequently be made available to other researchers or deposited online in keeping with Open Access rules of peer-reviewed journals.

WHAT TYPE OF COMPENSATION IS AVAILABLE?
SURVEY 1: You will receive .5 bonus points towards an eligible psychology course upon completion of survey 1. If you decide to withdraw from the study before completing the questionnaire, you are eligible to receive partial compensation (i.e., .25 bonus points for every 15 minutes of completion) for your participation. *Participants who complete the survey in less than 5 minutes may not receive any compensation.*

SURVEY 2: You will receive .25 bonus points towards an eligible psychology course upon completion of survey 2 four weeks after survey 1 and one entry into a draw to win one of five (5) CDN$100 Amazon e-gift cards. If you decide to withdraw from the study before completing the questionnaire, you are eligible to receive partial compensation (i.e., .25 bonus points for every 15 minutes of completion) for your participation.

HOW CAN I WITHDRAW FROM THIS STUDY?
Participation is completely voluntary, and you may withdraw at any time during the study without penalty. If you choose to stop participating before the survey session is completed, you can do so by clicking the “Leave Now” button, which will take you to the feedback form which will provide a list of mental health resources. Please note that the Qualtrics program saves partial or previously submitted data which may still be used by the researchers.

If you decide you would like to withdraw your data after you have completed the study, please let us know within 30 days of completion and your data will be destroyed and will not be included in the final analyses. However, if you contact our research team after the 30 days has elapsed, we are unable to exclude your information form the study as it will be used in future research. **During the survey, you will be asked a series of question that will be used to generate an identification code. Please keep a record of the identification code. This will be needed to remove your data.**

HOW CAN I GET MORE INFORMATION?
If you are interested in receiving more information regarding the results of this study, or if you have any questions or concerns, please contact us at either the phone numbers or email addresses listed at the top of the page. A summary of the results will be posted to the faculty supervisor's website once the study has been completed: http://smu-facweb.smu.ca/~mternes/. The study is expected to be completed by August 2022.

Certification
This research has been reviewed and approved by the Saint Mary's University Research Ethics Board. If you have any questions or concerns about ethical matters, you may contact the Chair of the Saint Mary's University Research Ethics Board at ethics@smu.ca or 902 420-5728.

I understand what this study is about, appreciate the risks and benefits, and that by consenting I agree to take part in this research study and do not waive any right to legal recourse in the event of research-related harm. I also understand that my participation is voluntary and that I have the right to end at any time without penalty.

By choosing "I accept" I consent to participate in this study and will allow my data to be collected for research purposes. I consent to have been fully informed of the purpose of the study, my role, and the anonymity of my identity. I understand the above information and agree to participate in this study.

Appendix D: Wave 1 Informed Consent Form (Dalhousie University)

DALHOUSIE SONA INFORMED CONSENT FORM
Technology, Social Media, and Romantic Relationships (Survey 2)
SMU REB # 21-109

Dr. M. Ternes, J. McArthur & Dr. J. Blais
Department of Psychology
Saint Mary's University, 923 Robie Street, Halifax, NS B3H 3C3
Phone: (902) 420-5853 • Email: Meg.Ternes@smu.ca

INTRODUCTION
Welcome back! We would like to invite you to participate in our online study examining your perceptions and experiences of cyber dating aggressions. We are inviting you to participate in **part two** of a two-part study.

This research is being conducted in fulfillment of the master's requirements for Saint Mary's University's Department of Psychology.

WHAT IS THE PURPOSE OF THE STUDY?
The internet, social media and other cyber technologies are omni-present in the lives of emerging adults (i.e., ages of 18-25 years old) which inadvertently increases the number of opportunities to act aggressively towards a dating partner. This study aims to understand your perceptions of and experiences with cyber aggression in your romantic relationships (past or current). The data collected from this survey will contribute to a better understanding of the causes and consequences of cyber aggression, which in turn, may inform the development of prevention and intervention strategies.

WHO IS ELIGIBLE TO TAKE PART?
You are eligible to participate in the research if you completed survey 1 – Technology, Social Media, and Romantic Relationships.

WHAT DOES PARTICPATING MEAN?
If you agree to participate in our study, you will complete the second part of a two-part study where you'll answer a series of questions aggressive acts you may have engaged in the past few weeks. The survey will take place online and is expected to take 5 to 10 minutes.

Some of the questions you may be asked are sensitive, but we ask that you answer these questions as honestly as possible. If you are not comfortable answering any questions, you may simply skip them. You will not be penalized for skipping questions, however, depending on how many questions you have skipped, your data may not be included in the study.

Some examples of the more sensitive questions you will be asked include:

- We would like to know whether you have ever done any of the following things to a dating partner (current or past) using the internet or a cell phone in the PAST FOUR (4) WEEKS. I have…
  - Threatened my partner physically
  - Sent a sexual or naked photo/video of my partner to others without my partner's consent

WHAT ARE THE POTENTIAL BENEFITS?
You may not receive any direct benefits from your participation in this study; however, your
participation in this research will help us to better understand how technology and social media are used and abused within romantic relationships.

WHAT ARE THE POTENTIAL RISKS?
You may experience some discomfort or minor distress given the nature of the questions. You may also be concerned about others finding out about your use of technology and social media. We want to assure you that your data will be anonymous and confidential.

Please remember that participation in this survey is voluntary and you can skip any particular questions you do not feel comfortable answering or withdraw at any time. Contact information for services will be made available in the debriefing form if needed and can be accessed by clicking the "Leave Now" button.

All information gathered from you will be kept confidential; however, there are exceptions to confidentiality that you should be aware of. If you tell us that a child or vulnerable adult is in danger - experiencing physical abuse, emotional abuse, sexual abuse, or neglect - and you provide us with identifying information, we are required by law to notify the authorities and we will do so.

WHAT WILL BE DONE WITH MY INFORMATION?
All information collected for this survey is confidential. You will not be asked to reveal your name or any other personally identifying information. Qualtrics collects IP Addresses of participants which can be considered identifying information. However, IP addresses will be removed from our dataset after initial accuracy checks are completed.
Data collected will be stored through Qualtrics on a secure server in Canada and will not be shared with any third parties. Access to the completed survey will be limited to the researchers involved with this project. The computer-transferred data will be retained for a minimum of 5 years after publication and stored on a secure storage device, after which the data will be destroyed (i.e., storage device will be wiped).

Once all the data are collected and analyzed for this study, we plan to share the information with the research community through conferences, presentations, journal articles, and/or book chapters. A subsequent data set, stripped of all potential identifying information, may subsequently be made available to other researchers or deposited online in keeping with Open Access rules of peer-reviewed journals.

WHAT TYPE OF COMPENSATION IS AVAILABLE?

You will receive .25 bonus points towards an eligible psychology course upon completion of survey 2 four weeks after survey 1 and one entry into a draw to win one of five (5) CDN$100 Amazon e-gift cards.

HOW CAN I WITHDRAW FROM THIS STUDY?

Participation is completely voluntary, and you may withdraw at any time during the study without penalty. If you choose to stop participating before the survey session is completed, you can do so by clicking the "Leave Now" button, which will take you to the feedback form which will provide a list of mental health resources. Please note that the Qualtrics program saves partial or previously submitted data which may still be used by the researchers.

If you decide you would like to withdraw your data after you have completed the study, please let us know within 30 days of completion and your data will be destroyed and will not be included in the final analyses. However, if you contact our research team after the 30 days has elapsed, we are unable to exclude your information form the study as it will be used in future research. **During the survey, you will be asked a series of question that will be used to generate an identification code. Please keep a record of the identification code. This will be needed to remove your data.**

HOW CAN I GET MORE INFORMATION?

If you are interested in receiving more information regarding the results of this study, or if you have any questions or concerns, please contact us at either the phone numbers or email addresses listed at the top of the page. If you have a question or concern about ethical matters you may contact the SMU Research Ethics Board whose information is listed below. A summary of the results will be posted to the faculty supervisor's website once the study has been completed: http://smu-facweb.smu.ca/~mternes/. The study is expected to be completed by August 2022.

Certification

This research has been reviewed and approved by the Saint Mary's University and Dalhousie University Research Ethics Boards. If you have any questions or concerns about ethical matters, you may contact the Research Supervisor or a member of the:

- Human Research Participants & Ethics Committee of the Department of Psychology & Neuroscience, Tel: 902.494.1580, email psych.ethics@dal.ca
- Saint Mary's University Research Ethics Board, Tel: 902 420-5728, email: ethics@smu.ca.

Psychology Department Subject Pool Policy

Please click below to confirm that you have had your questions answered to your satisfaction, that you are aware that all records are entirely confidential and that you may discontinue participation at any point in the study. If you anticipate receiving educational credit points for assisting in this research, you may choose to do so as either a Research Participant or as an Observer. If you choose to be a Research Participant, the researcher will keep your data and use it in the research project. If you choose to be an Observer, the researcher will destroy any data that you may have provided, after you complete the study.

Please click below to indicate whether you choose to be a Research Participant or an Observer.

- o Research Participant (my data will be used in this study)
- o Observer (my data will be destroyed)

By clicking the “next” arrow, you consent to participate in the research study as described above.

Appendix E: Wave 1 Informed Consent Form (Social Media)

SOCIAL MEDIA INFORMED CONSENT FORM
Technology, Social Media and Romantic Relationships (Study 1)
SMU REB # 21-109

Dr. M. Ternes, J. McArthur & Dr. J. Blais
Department of Psychology
Saint Mary's University, 923 Robie Street, Halifax, NS B3H 3C3
Phone: (902) 420-5853
Email: Meg.Ternes@smu.ca; Jennifer.McArthur@smu.ca

INTRODUCTION

We would like to invite you to participate in our online study examining your perceptions and experiences of cyber dating aggressions. We are inviting you to participate in **part one** of a two-part study.

This research is being conducted in fulfillment of the master's requirements for Saint Mary's University's Department of Psychology.

WHAT IS THE PURPOSE OF THE STUDY?

The internet, social media and other cyber technologies are omni-present in the lives of emerging adults (i.e., ages of 18-25 years old) which inadvertently increases the number of opportunities to act aggressively towards a dating partner. This study aims to understand your perceptions of and experiences with cyber aggression in your romantic relationships (past or current). The data collected from this survey will contribute to a better understanding of the causes and consequences of cyber aggression, which in turn, may inform the development of prevention and intervention strategies.

WHO IS ELIGIBLE TO TAKE PART?

You are eligible to participate in the research if you are:
(a) aged 18 to 25, AND
(b) reside in Canada or the United States, AND
(c) are currently or have previously been involved in a dating relationship since the age of 18 defined as ANY of the following: a boyfriend or girlfriend, someone you are a 'thing' with, someone you have dated or are currently dating, someone who you like or love and spend time with, or a relationship that might involve sex.

WHAT DOES PARTICIPATING MEAN?

If you agree to participate in our study, you will complete a two-part study where you'll answer a series of questions around your perceptions of cyber aggressive acts carried out between dating partners, your experiences with cyber dating aggressions, aggressive acts you may have engaged in, and a short demographic questionnaire.

Some of the questions you may be asked are sensitive but we ask that you answer these questions as honestly as possible. If you are not comfortable answering any questions, you

may simply skip them. You will not be penalized for skipping questions, however, depending on how many questions you have skipped, your data may not be included in the study.

Some examples of the more sensitive questions you will be asked include:

- We would like to know whether you have ever done any of the following things to a dating partner (current or past) using the internet or a cell phone. I have…
  - Threatened my partner physically
  - Sent a sexual or naked photo/video of my partner to others without my partner's consent
- We would like to know whether any dating partner (current or past) has done any of the following things to you using the internet or a cell phone. My dating partner has…
  - Threatened me physically
  - Sent a sexual or naked photo/video of me to others without my consent

SURVEY 1: Survey 1 is expected to take 30 minutes to complete. Additionally, the research team will follow-up in four weeks (with your explicit permission) and invite you to complete an additional survey concerning your experiences with dating and technology since completing the first survey.

SURVEY 2: This follow-up survey, which will be completed four weeks after survey 1, is expected to take 5 to 10 minutes.

WHAT ARE THE POTENTIAL BENEFITS?

You may not receive any direct benefits from your participation in this study; however, your
participation in this research will help us to better understand how technology and social media are used and abused within romantic relationships.

WHAT ARE THE POTENTIAL RISKS?

You may experience some discomfort or minor distress given the nature of the questions. You may also be concerned about others finding out about your use of technology and social media. We want to assure you that your data will be anonymous and confidential.

Please remember that participation in this survey is voluntary and you can skip any particular questions you do not feel comfortable answering or withdraw at any time. Contact information for services will be made available in the debriefing form if needed and can be accessed by clicking the "Leave Now" button.

All information gathered from you will be kept confidential; however, there are exceptions to confidentiality that you should be aware of. If you tell us that a child or vulnerable adult is in danger - experiencing physical abuse, emotional abuse, sexual abuse, or neglect - and you provide us with identifying information, we are required by law to notify the authorities and we will do so.

WHAT WILL BE DONE WITH MY INFORMATION?

All information collected for this survey is confidential. You will not be asked to reveal your name or any other personally identifying information. Qualtrics collects IP Addresses of participants which can be considered identifying information. However, IP addresses will be removed from our dataset after initial accuracy checks are completed.

Data collected will be stored through Qualtrics on a secure server in Canada and will not be shared with any third parties. Access to the completed survey will be limited to the researchers involved with this project. The computer-transferred data will be retained for a minimum of 5 years after publication and stored on a secure storage device, after which the data will be destroyed (i.e., storage device will be wiped).

Once all the data are collected and analyzed for this study, we plan to share the information with the research community through conferences, presentations, journal articles, and/or book chapters. A subsequent data set, stripped of all potential identifying information, may subsequently be made available to other researchers or deposited online in keeping with Open Access rules of peer-reviewed journals.

WHAT TYPE OF COMPENSATION IS AVAILABLE?
SURVEY 1: You will one entry into a draw to win one of five (5) $100 Amazon e-gift cards upon completion of survey 1.

SURVEY 2: You will receive two entries into a draw to win one of five (5) $100 CDN Amazon e-gift cards upon completion of survey 2 four weeks after survey 1.

NOTE: Each entry into the draw for a $100 CDN Amazon e-gift card will give you a 1 in 100 (or better) chance of winning, depending on how many individuals participate in the survey. **If you want to be entered into the draw, you will be re-directed to a separate page to provide your email address at the end of the survey. Note that your email address cannot be linked to your survey responses.**

HOW CAN I WITHDRAW FROM THIS STUDY?
Participation is completely voluntary, and you may withdraw at any time during the study without penalty. If you choose to stop participating before the survey session is completed, you can do so by clicking the "Leave Now" button, which will take you to the feedback form which will provide a list of mental health resources. Please note that the Qualtrics program saves partial or previously submitted data which may still be used by the researchers.

If you would like to withdraw from the study but still would like to enter the draw for the gift card, you will need to click through the rest of the survey in order to be re-directed to the draw.

If you decide you would like to withdraw your data after you have completed the study, please let us know within 30 days of completion and your data will be destroyed and will not be included in the final analyses. However, if you contact our research team after the 30 days has elapsed, we are unable to exclude your information form the study as it will be

used in future research. **During the survey, you will be asked a series of question that will be used to generate an identification code. Please keep a record of the identification code. This will be needed to remove your data.**

HOW CAN I GET MORE INFORMATION?
If you are interested in receiving more information regarding the results of this study, or if you have any questions or concerns, please contact us at either the phone numbers or email addresses listed at the top of the page. A summary of the results will be posted to the faculty supervisor's website once the study has been completed: http://smu-facweb.smu.ca/~mternes/. The study is expected to be completed by August 2022.

Certification
This research has been reviewed and approved by the Saint Mary's University Research Ethics Board. If you have any questions or concerns about ethical matters, you may contact the Chair of the Saint Mary's University Research Ethics Board at ethics@smu.ca or 902 420-5728.

I understand what this study is about, appreciate the risks and benefits, and that by consenting I agree to take part in this research study and do not waive any right to legal recourse in the event of research-related harm. I also understand that my participation is voluntary and that I have the right to end at any time without penalty.

By choosing "I accept" I consent to participate in this study and will allow my data to be collected for research purposes. I consent to have been fully informed of the purpose of the study, my role, and the anonymity of my identity. I understand the above information and agree to participate in this study.

Appendix F: Wave 1 Feedback Form (SONA)

SONA FEEDBACK FORM

Technology, Social Media and Romantic Relationships (Survey 1)
SMU REB # 21-109

Dr. M. Ternes, J. McArthur & Dr. J. Blais
Department of Psychology
Saint Mary's University, 923 Robie Street, Halifax, NS B3H 3C3
Phone: (902) 420-5853
Email: Meg.Ternes@smu.ca; Jennifer.McArthur@smu.ca

Thank you for your participation in survey 1 of our study. By completing this survey, you are helping us to better understand perceptions of and experiences with cyber dating aggression among emerging adults.

Previous research has shown that the unrelenting use of technologies to harass a dating partner can have adverse psychological effects on the victimized party, including distress, depressive symptoms and suicide ideation and behavior. Given the negative impact on mental health, it is necessary to identify the factors that predict the use of harmful cyber behaviors directed at a dating partner. It is also important to understand the factors which predict the use of mental health services among victims of cyber aggression who feel that their mental health is being negatively impacted by a dating partner. Findings from this study may be used to inform prevention and intervention programs.

To learn more about digital aggression and the associated harms, please explore the following links:

- Psychology Today: How digital dating abuse is affecting teens

  https://www.psychologytoday.com/ca/blog/shame-nation/202002/how-digital-dating-abuse-is-affecting-teens

- Community of Practice: What We Know About Online Teen Dating Violence and Strategies for Prevention

  https://youthdatingviolence.prevnet.ca/wp-content/uploads/2021/01/Highlights-from-Current-TDV-Research.pdf

If you have experienced emotional distress from this study or are a victim of dating abuse, we strongly encourage you to talk to a mental health professional and if fearful, reach out to your local police.

- For Saint Mary's University students, you have access to the Counselling Centre at (902) 420-5615.
- For Dalhousie University students, you have access to the counselling services by calling (902) 494-2171.

There are also mental health services available through the Nova Scotia Health Authority (referral needed from a physician). Finally, if you are in crisis, please contact the Mobile Crisis Telephone Line (902) 429-8167, call 911, or attend your local emergency department. Here is a list of additional mental health resources for all participants in the study:

- Text HOME to 686868 to text with a trained crisis responder
- Canadian Mental Health Association cmha.ca maintains a list of mental health resources at their local offices
- Psychology Today maintains a list of practitioners in the community, which can be viewed by accessing https://therapists.psychologytoday.ca
- Visit your family physician who can make resources to local mental health services

As mentioned, all data collected from each participant is anonymous and will be kept strictly confidential and can only be accessed by the researchers involved in the study. Once the results are obtained from the study, the findings will be shared with other researchers through conferences, journal articles and/or presentations.

If you are interested in receiving more information regarding the results of this study, or if you have any questions or concerns, please contact us at either the phone numbers or email addresses listed at the top of the page. A summary of the results will be posted to the faculty supervisor's website once the study has been completed: http://smu-facweb.smu.ca/~mternes/. The study is expected to be completed by August 2022.

If you have a question or concern about ethical matters, you may contact the Research Supervisor, the Chair of the Saint Mary's University Research Ethics Board (902 420-5728, ethics@smu.ca) or a member of the Human Research Participants & Ethics Committee of the Department of Psychology & Neuroscience (902.494.1580, psych.ethics@dal.ca).

Appendix G: Wave 1 Feedback Form (Social Media)

SOCIAL MEDIA SAMPLING FEEDBACK FORM
Technology, Social Media and Romantic Relationships (Survey 1)
SMU REB # 21-109

Dr. M. Ternes, J. McArthur & Dr. J. Blais
Department of Psychology
Saint Mary's University, 923 Robie Street, Halifax, NS B3H 3C3
Phone: (902) 420-5853
Email: Meg.Ternes@smu.ca; Jennifer.McArthur@smu.ca

Thank you for your participation in survey 1 of our study. By completing this survey, you are helping us to better understand perceptions of and experiences with cyber dating aggression among emerging adults.

Previous research has shown that the unrelenting use of technologies to harass a dating partner can have adverse psychological effects on the victimized party, including distress, depressive symptoms and suicide ideation and behavior. Given the negative impact on mental health, it is necessary to identify the factors that predict the use of harmful cyber behaviors directed at a dating partner. It is also important to understand the factors which predict the use of mental health services among victims of cyber aggression who feel that their mental health is being negatively impacted by a dating partner. Findings from this study may be used to inform prevention and intervention programs.

To learn more about digital aggression and the associated harms, please explore the following links:

- Psychology Today: How digital dating abuse is affecting teens

  https://www.psychologytoday.com/ca/blog/shame-nation/202002/how-digital-dating-abuse-is-affecting-teens

- Community of Practice: What We Know About Online Teen Dating Violence and Strategies for Prevention

  https://youthdatingviolence.prevnet.ca/wp-content/uploads/2021/01/Highlights-from-Current-TDV-Research.pdf

If you have experienced emotional distress from this study or are a victim of dating abuse, we strongly encourage you to talk to a mental health professional and if fearful, reach out to your local police. Finally, if you are in crisis, please call 911 or attend your local emergency department.

Here is a list of mental health resources for Canadian participants in the study:

- Text HOME to 686868 to text with a trained crisis responder
- Canadian Mental Health Association cmha.ca maintains a list of mental health resources at

their local offices
- Psychology Today maintains a list of practitioners in the community, which can be viewed by accessing https://therapists.psychologytoday.ca
- Visit your family physician who can make resources to local mental health services

Here is a list of mental health resources for American participants in the study:
- Text HOME to 741741 to text with a trained crisis responder
- National Institute of Mental Health maintains a list of resources which can be viewed by accessing https://www.nimh.nih.gov/health/find-help/
- Visit your family physician who can make resources to local mental health services

As mentioned, all data collected from each participant is anonymous and will be kept strictly confidential and can only be accessed by the researchers involved in the study. Once the results are obtained from the study, the findings will be shared with other researchers through conferences, journal articles and/or presentations.

If you are interested in receiving more information regarding the results of this study, or if you have any questions or concerns, please contact us at either the phone numbers or email addresses listed at the top of the page. A summary of the results will be posted to the faculty supervisor's website once the study has been completed: http://smu-facweb.smu.ca/~mternes/. The study is expected to be completed by August 2022.

If you have a question or concern about ethical matters you may contact the Chair of the Saint Mary's University Research Ethics Board at ethics@smu.ca or 902 420-5728.

Appendix H: Wave 2 Informed Consent (Saint Mary's University)

SMU SONA INFORMED CONSENT FORM
Technology, Social Media, and Romantic Relationships (Survey 2)
SMU REB # 21-109

Dr. M. Ternes, J. McArthur & Dr. J. Blais
Department of Psychology
Saint Mary's University, 923 Robie Street, Halifax, NS B3H 3C3
Phone: (902) 420-5853 • Email: Meg.Ternes@smu.ca

INTRODUCTION
Welcome back! We would like to invite you to participate in our online study examining your perceptions and experiences of cyber dating aggressions. We are inviting you to participate in **part two** of a two-part study.

This research is being conducted in fulfillment of the master's requirements for Saint Mary's University's Department of Psychology.

WHAT IS THE PURPOSE OF THE STUDY?
The internet, social media and other cyber technologies are omni-present in the lives of emerging adults (i.e., ages of 18-25 years old) which inadvertently increases the number of opportunities to act aggressively towards a dating partner. This study aims to understand your perceptions of and experiences with cyber aggression in your romantic relationships (past or current). The data collected from this survey will contribute to a better understanding of the causes and consequences of cyber aggression, which in turn, may inform the development of prevention and intervention strategies.

WHO IS ELIGIBLE TO TAKE PART?
You are eligible to participate in the research if you completed survey 1 – Technology, Social Media, and Romantic Relationships.

WHAT DOES PARTICPATING MEAN?
If you agree to participate in our study, you will complete the second part of a two-part study where you'll answer a series of questions aggressive acts you may have engaged in the past few weeks. The survey will take place online and is expected to take 5 to 10 minutes.

Some of the questions you may be asked are sensitive, but we ask that you answer these questions as honestly as possible. If you are not comfortable answering any questions, you may simply skip them. You will not be penalized for skipping questions, however, depending on how many questions you have skipped, your data may not be included in the study.

Some examples of the more sensitive questions you will be asked include:

- We would like to know whether you have ever done any of the following things to a dating partner (current or past) using the internet or a cell phone in the PAST FOUR (4) WEEKS. I have…
  - Threatened my partner physically
  - Sent a sexual or naked photo/video of my partner to others without my partner's consent

WHAT ARE THE POTENTIAL BENEFITS?
You may not receive any direct benefits from your participation in this study; however, your
participation in this research will help us to better understand how technology and social media are used and abused within romantic relationships.

WHAT ARE THE POTENTIAL RISKS?
You may experience some discomfort or minor distress given the nature of the questions. You may also be concerned about others finding out about your use of technology and social media. We want to assure you that your data will be anonymous and confidential.

Please remember that participation in this survey is voluntary and you can skip any particular questions you do not feel comfortable answering or withdraw at any time. Contact information for services will be made available in the debriefing form if needed and can be accessed by clicking the "Leave Now" button.

All information gathered from you will be kept confidential; however, there are exceptions to confidentiality that you should be aware of. If you tell us that a child or vulnerable adult is in danger - experiencing physical abuse, emotional abuse, sexual abuse, or neglect - and you provide us with identifying information, we are required by law to notify the authorities and we will do so.

WHAT WILL BE DONE WITH MY INFORMATION?
All information collected for this survey is confidential. You will not be asked to reveal your name or any other personally identifying information. Qualtrics collects IP Addresses of participants which can be considered identifying information. However, IP addresses will be removed from our dataset after initial accuracy checks are completed.
Data collected will be stored through Qualtrics on a secure server in Canada and will not be shared with any third parties. Access to the completed survey will be limited to the researchers involved with this project. The computer-transferred data will be retained for a minimum of 5 years after publication and stored on a secure storage device, after which the data will be destroyed (i.e., storage device will be wiped).

Once all the data are collected and analyzed for this study, we plan to share the information with the research community through conferences, presentations, journal articles, and/or book chapters. A subsequent data set, stripped of all potential identifying information, may subsequently be made available to other researchers or deposited online in keeping with Open Access rules of peer-reviewed journals.

WHAT TYPE OF COMPENSATION IS AVAILABLE?

You will receive .25 bonus points towards an eligible psychology course upon completion of survey 2 four weeks after survey 1 and one entry into a draw to win one of five (5) CDN$100 Amazon e-gift cards.

HOW CAN I WITHDRAW FROM THIS STUDY?
Participation is completely voluntary, and you may withdraw at any time during the study without penalty. If you choose to stop participating before the survey session is completed, you can do so by clicking the "Leave Now" button, which will take you to the feedback form which will provide a list of mental health resources. Please note that the Qualtrics program saves partial or previously submitted data which may still be used by the researchers.

If you decide you would like to withdraw your data after you have completed the study, please let us know within 30 days of completion and your data will be destroyed and will not be included in the final analyses. However, if you contact our research team after the 30 days has elapsed, we are unable to exclude your information form the study as it will be used in future research. **During the survey, you will be asked a series of question that will be used to generate an identification code. Please keep a record of the identification code. This will be needed to remove your data.**

HOW CAN I GET MORE INFORMATION?
If you are interested in receiving more information regarding the results of this study, or if you have any questions or concerns, please contact us at either the phone numbers or email addresses listed at the top of the page. If you have a question or concern about ethical matters you may contact the SMU Research Ethics Board whose information is listed below. A summary of the results will be posted to the faculty supervisor's website once the study has been completed: http://smu-facweb.smu.ca/~mternes/. The study is expected to be completed by August 2022.

Certification
This research has been reviewed and approved by the Saint Mary's University Research Ethics Board. If you have any questions or concerns about ethical matters, you may contact the Chair of the Saint Mary's University Research Ethics Board at ethics@smu.ca or 902 420-5728.

I understand what this study is about, appreciate the risks and benefits, and that by consenting I agree to take part in this research study and do not waive any right to legal recourse in the event of research-related harm. I also understand that my participation is voluntary and that I have the right to end at any time without penalty.

By choosing "I accept" I consent to participate in this study and will allow my data to be collected for research purposes. I consent to have been fully informed of the purpose of the study, my role, and the anonymity of my identity. I understand the above information and agree to participate in this study.

Appendix I: Wave 2 Informed Consent (Dalhousie University)

DALHOUSIE SONA INFORMED CONSENT FORM

Technology, Social Media, and Romantic Relationships (Survey 2)

SMU REB # 21-109

Dr. M. Ternes, J. McArthur & Dr. J. Blais
Department of Psychology
Saint Mary's University, 923 Robie Street, Halifax, NS B3H 3C3
Phone: (902) 420-5853 • Email: Meg.Ternes@smu.ca

INTRODUCTION

Welcome back! We would like to invite you to participate in our online study examining your perceptions and experiences of cyber dating aggressions. We are inviting you to participate in **part two** of a two-part study.

This research is being conducted in fulfillment of the master's requirements for Saint Mary's University's Department of Psychology.

WHAT IS THE PURPOSE OF THE STUDY?

The internet, social media and other cyber technologies are omni-present in the lives of emerging adults (i.e., ages of 18-25 years old) which inadvertently increases the number of opportunities to act aggressively towards a dating partner. This study aims to understand your perceptions of and experiences with cyber aggression in your romantic relationships (past or current). The data collected from this survey will contribute to a better understanding of the causes and consequences of cyber aggression, which in turn, may inform the development of prevention and intervention strategies.

WHO IS ELIGIBLE TO TAKE PART?

You are eligible to participate in the research if you completed survey 1 – Technology, Social Media, and Romantic Relationships.

WHAT DOES PARTICPATING MEAN?

If you agree to participate in our study, you will complete the second part of a two-part study where you'll answer a series of questions aggressive acts you may have engaged in the past few weeks. The survey will take place online and is expected to take 5 to 10 minutes.

Some of the questions you may be asked are sensitive, but we ask that you answer these questions as honestly as possible. If you are not comfortable answering any questions, you may simply skip them. You will not be penalized for skipping questions, however, depending on how many questions you have skipped, your data may not be included in the study.

Some examples of the more sensitive questions you will be asked include:

- We would like to know whether you have ever done any of the following things to a dating partner (current or past) using the internet or a cell phone in the PAST FOUR (4) WEEKS. I have…
  - Threatened my partner physically
  - Sent a sexual or naked photo/video of my partner to others without my partner's consent

WHAT ARE THE POTENTIAL BENEFITS?
You may not receive any direct benefits from your participation in this study; however, your
participation in this research will help us to better understand how technology and social media are used and abused within romantic relationships.

WHAT ARE THE POTENTIAL RISKS?
You may experience some discomfort or minor distress given the nature of the questions. You may also be concerned about others finding out about your use of technology and social media. We want to assure you that your data will be anonymous and confidential.

Please remember that participation in this survey is voluntary and you can skip any particular questions you do not feel comfortable answering or withdraw at any time. Contact information for services will be made available in the debriefing form if needed and can be accessed by clicking the "Leave Now" button.

All information gathered from you will be kept confidential; however, there are exceptions to confidentiality that you should be aware of. If you tell us that a child or vulnerable adult is in danger - experiencing physical abuse, emotional abuse, sexual abuse, or neglect - and you provide us with identifying information, we are required by law to notify the authorities and we will do so.

WHAT WILL BE DONE WITH MY INFORMATION?
All information collected for this survey is confidential. You will not be asked to reveal your name or any other personally identifying information. Qualtrics collects IP Addresses of participants which can be considered identifying information. However, IP addresses will be removed from our dataset after initial accuracy checks are completed.
Data collected will be stored through Qualtrics on a secure server in Canada and will not be shared with any third parties. Access to the completed survey will be limited to the researchers involved with this project. The computer-transferred data will be retained for a minimum of 5 years after publication and stored on a secure storage device, after which the data will be destroyed (i.e., storage device will be wiped).

Once all the data are collected and analyzed for this study, we plan to share the information with the research community through conferences, presentations, journal articles, and/or book chapters. A subsequent data set, stripped of all potential identifying information, may subsequently be made available to other researchers or deposited online in keeping with Open Access rules of peer-reviewed journals.

WHAT TYPE OF COMPENSATION IS AVAILABLE?

You will receive .25 bonus points towards an eligible psychology course upon completion of survey 2 four weeks after survey 1 and one entry into a draw to win one of five (5) CDN$100 Amazon e-gift cards.

HOW CAN I WITHDRAW FROM THIS STUDY?

Participation is completely voluntary, and you may withdraw at any time during the study without penalty. If you choose to stop participating before the survey session is completed, you can do so by clicking the "Leave Now" button, which will take you to the feedback form which will provide a list of mental health resources. Please note that the Qualtrics program saves partial or previously submitted data which may still be used by the researchers.

If you decide you would like to withdraw your data after you have completed the study, please let us know within 30 days of completion and your data will be destroyed and will not be included in the final analyses. However, if you contact our research team after the 30 days has elapsed, we are unable to exclude your information form the study as it will be used in future research. **During the survey, you will be asked a series of question that will be used to generate an identification code. Please keep a record of the identification code. This will be needed to remove your data.**

HOW CAN I GET MORE INFORMATION?

If you are interested in receiving more information regarding the results of this study, or if you have any questions or concerns, please contact us at either the phone numbers or email addresses listed at the top of the page. If you have a question or concern about ethical matters you may contact the SMU Research Ethics Board whose information is listed below. A summary of the results will be posted to the faculty supervisor's website once the study has been completed: http://smu-facweb.smu.ca/~mternes/. The study is expected to be completed by August 2022.

Certification

This research has been reviewed and approved by the Saint Mary's University and Dalhousie University Research Ethics Boards. If you have any questions or concerns about ethical matters, you may contact the Research Supervisor or a member of the:

- Human Research Participants & Ethics Committee of the Department of Psychology & Neuroscience, Tel: 902.494.1580, email psych.ethics@dal.ca
- Saint Mary's University Research Ethics Board, Tel: 902 420-5728, email: ethics@smu.ca.

Psychology Department Subject Pool Policy

Please click below to confirm that you have had your questions answered to your satisfaction, that you are aware that all records are entirely confidential and that you may discontinue participation at any point in the study. If you anticipate receiving educational credit points for assisting in this research, you may choose to do so as either a Research Participant or as an Observer. If you choose to be a Research Participant, the researcher will keep your data and use it in the research project. If you choose to be an Observer, the researcher will destroy any data that you may have provided, after you complete the study.

Please click below to indicate whether you choose to be a Research Participant or an Observer.

- o Research Participant (my data will be used in this study)
- o Observer (my data will be destroyed)

By clicking the “next” arrow, you consent to participate in the research study as described above.

Appendix J: Wave 2 Informed Consent (Social Media)

SOCIAL MEDIA SAMPLING INFORMED CONSENT FORM
Technology, Social Media, and Romantic Relationships (Survey 2)
SMU REB # 21-109

Dr. M. Ternes, J. McArthur & Dr. J. Blais
Department of Psychology
Saint Mary's University, 923 Robie Street, Halifax, NS B3H 3C3
Phone: (902) 420-5853 • Email: Meg.Ternes@smu.ca

INTRODUCTION
Welcome back! We would like to invite you to participate in our online study examining your perceptions and experiences of cyber dating aggressions. We're inviting you to participate in **part two** of a two-part study.

This research is being conducted in fulfillment of the master's requirements for Saint Mary's University's Department of Psychology.

WHAT IS THE PURPOSE OF THE STUDY?
The internet, social media and other cyber technologies are omni-present in the lives of emerging adults (i.e., ages of 18-25 years old) which inadvertently increases the number of opportunities to act aggressively towards a dating partner. This study aims to understand your perceptions of and experiences with cyber aggression in your romantic relationships (past or current). The data collected from this survey will contribute to a better understanding of the causes and consequences of cyber aggression, which in turn, may inform the development of prevention and intervention strategies.

WHO IS ELIGIBLE TO TAKE PART?
You are eligible to participate in the research if you completed survey 1 – Technology, Social Media, and Romantic Relationships.

WHAT DOES PARTICPATING MEAN?
If you agree to participate in our study, you will complete the second part of a two-part study where you'll answer a series of questions aggressive acts you may have engaged in the past few weeks. The survey will take place online and is expected to take 5 to 10 minutes.

Some of the questions you may be asked are sensitive, but we ask that you answer these questions as honestly as possible. If you are not comfortable answering any questions, you may simply skip them. You will not be penalized for skipping questions, however, depending on how many questions you have skipped, your data may not be included in the study.

Some examples of the more sensitive questions you will be asked include:

- We would like to know whether you have ever done any of the following things to a dating partner (current or past) using the internet or a cell phone in the PAST FOUR (4) WEEKS. I have…
  - Threatened my partner physically
  - Sent a sexual or naked photo/video of my partner to others without my partner's consent

WHAT ARE THE POTENTIAL BENEFITS?
You may not receive any direct benefits from your participation in this study; however, your
participation in this research will help us to better understand how technology and social media are used and abused within romantic relationships.

WHAT ARE THE POTENTIAL RISKS?
You may experience some discomfort or minor distress given the nature of the questions. You may also be concerned about others finding out about your use of technology and social media. We want to assure you that your data will be anonymous and confidential.

Please remember that participation in this survey is voluntary and you can skip any particular questions you do not feel comfortable answering or withdraw at any time. Contact information for services will be made available in the debriefing form if needed and can be accessed by clicking the "Leave Now" button.

All information gathered from you will be kept confidential; however, there are exceptions to confidentiality that you should be aware of. If you tell us that a child or vulnerable adult is in danger - experiencing physical abuse, emotional abuse, sexual abuse, or neglect - and you provide us with identifying information, we are required by law to notify the authorities and we will do so.

WHAT WILL BE DONE WITH MY INFORMATION?
All information collected for this survey is confidential. You will not be asked to reveal your name or any other personally identifying information. Qualtrics collects IP Addresses of participants which can be considered identifying information. However, IP addresses will be removed from our dataset after initial accuracy checks are completed.
Data collected will be stored through Qualtrics on a secure server in Canada and will not be shared with any third parties. Access to the completed survey will be limited to the researchers involved with this project. The computer-transferred data will be retained for a minimum of 5 years after publication and stored on a secure storage device, after which the data will be destroyed (i.e., storage device will be wiped).

Once all the data are collected and analyzed for this study, we plan to share the information with the research community through conferences, presentations, journal articles, and/or book chapters. A subsequent data set, stripped of all potential identifying information, may subsequently be made available to other researchers or deposited online in keeping with Open Access rules of peer-reviews journals.

WHAT TYPE OF COMPENSATION IS AVAILABLE?

You will receive two entries into a draw to win one of five (5) $100 CDN Amazon e-gift cards upon completion of survey 2 four weeks after survey 1.

NOTE: Each entry into the draw for a $100 CDN Amazon e-gift card will give you a 1 in 100 (or better) chance of winning, depending on how many individuals participate in the survey. **If you want to be entered into the draw, you will be re-directed to a separate page to provide your email address at the end of the survey. Note that your email address cannot be linked to your survey responses.**

HOW CAN I WITHDRAW FROM THIS STUDY?
Participation is completely voluntary, and you may withdraw at any time during the study without penalty. If you choose to stop participating before the survey session is completed, you can do so by clicking the "Leave Now" button, which will take you to the feedback form which will provide a list of mental health resources. Please note that the Qualtrics program saves partial or previously submitted data which may still be used by the researchers.

If you would like to withdraw from the study but still would like to enter the draw for the gift card, you will need to click through the rest of the survey in order to be re-directed to the draw

If you decide you would like to withdraw your data after you have completed the study, please let us know within 30 days of completion and your data will be destroyed and will not be included in the final analyses. However, if you contact our research team after the 30 days has elapsed, we are unable to exclude your information form the study as it will be used in future research. **During the survey, you will be asked a series of question that will be used to generate an identification code. Please keep a record of the identification code. This will be needed to remove your data.**

HOW CAN I GET MORE INFORMATION?
If you are interested in receiving more information regarding the results of this study, or if you have any questions or concerns, please contact us at either the phone numbers or email addresses listed at the top of the page. If you have a question or concern about ethical matters you may contact the SMU Research Ethics Board whose information is listed below. A summary of the results will be posted to the faculty supervisor's website once the study has been completed: http://smu-facweb.smu.ca/~mternes/. The study is expected to be completed by August 2022.

Certification
This research has been reviewed and approved by the Saint Mary's University Research Ethics Board. If you have any questions or concerns about ethical matters, you may contact the Chair of the Saint Mary's University Research Ethics Board at ethics@smu.ca or 902 420-5728.

I understand what this study is about, appreciate the risks and benefits, and that by consenting I agree to take part in this research study and do not waive any right to legal

recourse in the event of research-related harm. I also understand that my participation is voluntary and that I have the right to end at any time without penalty.

By choosing “I accept” I consent to participate in this study and will allow my data to be collected for research purposes. I consent to have been fully informed of the purpose of the study, my role, and the anonymity of my identity. I understand the above information and agree to participate in this study.

Appendix K: Wave 2 Questionnaire

Q1. The following information is collected to generate a participant identifier to help track your data over time:

A. First letter of mother's first name?
B. Number of older brothers (living and deceased)?
C. Number representing the month you were born?
D. First letter of middle name (if none, use X)?

Q2. INSTRUCTIONS: We would like to know whether you have done any of the following things to your dating partner (current or past) using the internet or a cell phone in the past four (4) weeks. I have… [Items to be randomized]

[Digital monitoring or control]	Never (0)			Very often (3)
Pressured my partner to respond quickly to calls, texts, or other messages	☐			☐
Monitored my partner's whereabouts and activities	☐			☐
Sent so many messages it made my partner feel uncomfortable	☐			☐
Monitored who my partner talks to and is/was friends with	☐			☐
Pressured my partner for passwords to access cell phone or online accounts	☐			☐
Used private information to check on my partner without permission	☐			☐
[Direct digital aggression]				
Shared embarrassing content (photo or video) with others without my partner's permission	☐			☐
Sent my partner a mean or hurtful PRIVATE message	☐			☐
Posted a mean or hurtful PUBLIC message about my partner using social media	☐			☐
Spread a rumor about my partner	☐			☐
Sent a threatening message to my partner	☐			☐
Threatened to harm my partner physically	☐			☐
Used cell phone or online account to pretend to be my partner	☐			☐
Used information on social network sites to tease my partner	☐			☐
[Digital sexual coercion]				
Pressured my partner to sext	☐			☐

Sent a sexual or naked photo/video of self to my partner without consent	☐			☐
Sent a sexual or naked photo/video of my partner to others without consent	☐			☐
Pressured my partner to have sex or do other sexual activity	☐			☐

Q3. EMAIL REQUEST [At the end of the study 2, participants will be redirected to a new Qualtrics page, and their responses will NOT be linked to the participant's previous responses]

To be entered into a draw for one of two $100 Amazon gift cards, please enter your EMAIL ADDRESS. Note: Your email address will not be linked to this survey or future studies. [*open-text field*]

Appendix L: Wave 2 Feedback Form (SONA)

SONA FEEDBACK FORM
Technology, Social Media and Romantic Relationships (Survey 2)
SMU REB # 21-109

Dr. M. Ternes, J. McArthur & Dr. J. Blais
Department of Psychology
Saint Mary's University, 923 Robie Street, Halifax, NS B3H 3C3
Phone: (902) 420-5853
Email: Meg.Ternes@smu.ca; Jennifer.McArthur@smu.ca

Thank you for your participation in survey 2 of our study. By completing this survey, you are helping us to better understand perceptions of and experiences with cyber dating aggression among emerging adults.

Previous research has shown that the unrelenting use of technologies to harass a dating partner can have adverse psychological effects on the victimized party, including distress, depressive symptoms and suicide ideation and behavior. Given the negative impact on mental health, it is necessary to identify the factors that predict the use of harmful cyber behaviors directed at a dating partner. It is also important to understand the factors which predict the use of mental health services among victims of cyber aggression who feel that their mental health is being negatively impacted by a dating partner. Findings from this study may be used to inform prevention and intervention programs.

To learn more about digital dating abuse and the associated harms, please explore the following links:

- Psychology Today: How digital dating abuse is affecting teens

  https://www.psychologytoday.com/ca/blog/shame-nation/202002/how-digital-dating-abuse-is-affecting-teens

- Community of Practice: What We Know About Online Teen Dating Violence and Strategies for Prevention

  https://youthdatingviolence.prevnet.ca/wp-content/uploads/2021/01/Highlights-from-Current-TDV-Research.pdf

If you have experienced emotional distress from this study or are a victim of dating abuse, we strongly encourage you to talk to a mental health professional and if fearful, reach out to your local police.

- For Saint Mary's University students, you have access to the Counselling Centre at (902) 420-5615.

- For Dalhousie University students, you have access to the counselling services by calling (902) 494-2171.
  There are also mental health services available through the Nova Scotia Health Authority (referral needed from a physician). Finally, if you are in crisis please contact the Mobile Crisis Telephone Line (902) 429-8167, call 911, or attend your local emergency department. Here is a list of additional mental health resources for all participants in the study:
- Text HOME to 686868 to text with a trained crisis responder
- Canadian Mental Health Association cmha.ca maintains a list of mental health resources at their local offices
- Psychology Today maintains a list of practitioners in the community, which can be viewed by accessing https://therapists.psychologytoday.ca
- Visit your family physician who can make resources to local mental health services

As mentioned, all data collected from each participant is anonymous and will be kept strictly confidential and can only be accessed by the researchers involved in the study. Once the results are obtained from the study, the findings will be shared with other researchers through conferences, journal articles and/or presentations.

If you are interested in receiving more information regarding the results of this study, or if you have any questions or concerns, please contact us at either the phone numbers or email addresses listed at the top of the page. A summary of the results will be posted to the faculty supervisor's website once the study has been completed: http://smu-facweb.smu.ca/~mternes/. The study is expected to be completed by August 2022.

If you have a question or concern about ethical matters you may contact the Chair of the Saint Mary's University Research Ethics Board at ethics@smu.ca or 902 420-5728.

Appendix M: Wave 2 Feedback Form (Social Media)

SOCIAL MEDIA SAMPLING FEEDBACK FORM
Technology, Social Media and Romantic Relationships (Survey 2)
SMU REB # 21-109

Dr. M. Ternes, J. McArthur & Dr. J. Blais
Department of Psychology
Saint Mary's University, 923 Robie Street, Halifax, NS B3H 3C3
Phone: (902) 420-5853
Email: Meg.Ternes@smu.ca; Jennifer.McArthur@smu.ca

Thank you for your participation in survey 2 of our study. By completing this survey, you are helping us to better understand perceptions of and experiences with cyber dating aggression among emerging adults.

Previous research has shown that the unrelenting use of technologies to harass a dating partner can have adverse psychological effects on the victimized party, including distress, depressive symptoms and suicide ideation and behavior. Given the negative impact on mental health, it is necessary to identify the factors that predict the use of harmful cyber behaviors directed at a dating partner. It is also important to understand the factors which predict the use of mental health services among victims of cyber aggression who feel that their mental health is being negatively impacted by a dating partner. Findings from this study may be used to inform prevention and intervention programs.

To learn more about digital dating abuse and the associated harms, please explore the following links:

- Psychology Today: How digital dating abuse is affecting teens

  https://www.psychologytoday.com/ca/blog/shame-nation/202002/how-digital-dating-abuse-is-affecting-teens

- Community of Practice: What We Know About Online Teen Dating Violence and Strategies for Prevention

  https://youthdatingviolence.prevnet.ca/wp-content/uploads/2021/01/Highlights-from-Current-TDV-Research.pdf

If you have experienced emotional distress from this study or are a victim of dating abuse, we strongly encourage you to talk to a mental health professional and if fearful, reach out to your local police. Finally, if you are in crisis, please call 911 or attend your local emergency department.

Here is a list of mental health resources for Canadian participants in the study:

- Text HOME to 686868 to text with a trained crisis responder

- Canadian Mental Health Association cmha.ca maintains a list of mental health resources at their local offices
- Psychology Today maintains a list of practitioners in the community, which can be viewed by accessing https://therapists.psychologytoday.ca
- Visit your family physician who can make resources to local mental health services

Here is a list of mental health resources for American participants in the study:

- Text HOME to 741741 to text with a trained crisis responder
- National Institute of Mental Health maintains a list of resources which can be viewed by accessing https://www.nimh.nih.gov/health/find-help/
- Visit your family physician who can make resources to local mental health services

As mentioned, all data collected from each participant is anonymous and will be kept strictly confidential and can only be accessed by the researchers involved in the study. Once the results are obtained from the study, the findings will be shared with other researchers through conferences, journal articles and/or presentations.

If you are interested in receiving more information regarding the results of this study, or if you have any questions or concerns, please contact us at either the phone numbers or email addresses listed at the top of the page. A summary of the results will be posted to the faculty supervisor's website once the study has been completed: http://smu-facweb.smu.ca/~mternes/. The study is expected to be completed by August 2022.

If you have a question or concern about ethical matters you may contact the Chair of the Saint Mary's University Research Ethics Board at ethics@smu.ca or 902 420-5728.

Appendix N: Results for University- and Social Media Combined Samples.

Table 15

Total, Direct and Indirect Effects of Hypothesized Antecedents on Intentions to Perpetrate Digital Monitoring and Control

Parameter		95% CI for *B*			
	B	LL	UL	*B SE*	β
Past perpetration → Intent					
Total	**.47*****	.34	.61	.07	.20
Indirect (total)	**.31*****	.19	.44	.06	.13
Attitudes	**.16*****	.08	.26	.05	
Injunctive norms	**.09****	.03	.16	.03	
Descriptive norms	.06	.01	.13	.03	
PBC	.01	-.01	.03	.01	
Direct Effects	.06	.03	.28	.06	.07
Past victimization → Intent					
Total	**.45*****	.30	.60	.08	.21
Indirect (total)	**.38*****	.17	.50	.06	.17
Attitudes	**.19*****	.10	.29	.05	
Injunctive norms	**.12****	.04	.21	.04	
Descriptive norms	.06	.01	.14	.03	
PBC	.01	-.01	.03	.01	
Direct Effects	.07	-.06	.20	.07	.03
Gender norm beliefs → Intent					
Total	**.21*****	.10	31	.05	.29
Indirect (total)	**.10*****	.05	.15	.03	.14
Attitudes	**.06*****	.03	.11	.02	
Injunctive norms	**.03****	.01	.11	.02	
Descriptive norms	.01	.00	.02	.01	
PBC	-.01	-.01	.00	<.01	
Direct	**.04****	.03	.19	.04	.15

Note. N = 408. PBC= perceived behavioural control; 95% CI = percentile confidence interval based on 5000 bootstrap samples.
Bonferroni Correction applied.
$^{**}p < .01$, $^{***}p < .001$

Table 16

Total, Direct and Indirect Effects of Hypothesized Antecedents on Intentions to Perpetrate Digital Direct Aggression

Parameter		95% CI for *B*			
	B	LL	UL	*B SE*	β
Past perpetration → Intent					
Total	**.15****	.10	.20	.03	.21
Indirect (total)	**.11****	.06	.17	.03	.17
Attitudes	**.08****	.04	.14	.03	
Injunctive norms	.02	-.01	.05	.02	
Descriptive norms	.02	-.01	.05	.02	
PBC	<.01	-.003	<.01	<.01	
Direct Effects	.03	-.02	.08	.03	.05
Past victimization → Intent					
Total	**.09****	.04	.14	.02	.13
Indirect (total)	**.64****	.03	.11	.02	.09
Attitudes	**.04****	.01	.07	.02	
Injunctive norms	.02	-.01	.05	.02	
Descriptive norms	.01	-.01	.03	.01	
PBC	<.01	-.002	<.01	<.01	
Direct Effects	.02	-.01	.06	.02	.03
Gender norm beliefs → Intent					
Total	**.08****	.04	.14	.03	.32
Indirect (total)	**.04****	.01	.08	.02	.16
Attitudes	**.02****	.01	.05	.01	
Injunctive norms	.02	-.004	.04	.01	
Descriptive norms	<.01	-.003	.02	.01	
PBC	<.01	-.002	<.01	<.01	
Direct	.04	.01	.08	.02	.16

Note. *N* = 408. PBC= perceived behavioural control; 95% CI = percentile confidence interval based on 5000 bootstrap samples.
Bonferroni Correction applied.
$^{**}p < .01$, $^{***}p < .001$

Table 17

Total, Direct and Indirect Effects of Hypothesized Antecedents on Intentions to Perpetrate Digital Sexual Coercion

Parameter		95% CI for *B*			
	B	LL	UL	*B SE*	β
Past perpetration → Intent					
Total	**.61*****	.45	.79	.09	.41
Indirect (total)	**.42*****	.23	.64	.11	.28
Attitudes	**.32****	.14	.52	.10	
Injunctive norms	.11	.02	.23	.05	
Descriptive norms	-.01	-.09	.09	.05	
PBC	<.01	-.004	.01	<.01	
Direct Effects	.19	.02	.35	.08	.13
Past victimization → Intent					
Total	**.17*****	.10	.26	.04	.13
Indirect (total)	**.13****	.06	.22	.04	.10
Attitudes	**.08****	.02	.15	.03	
Injunctive norms	.06	.01	.11	.03	
Descriptive norms	<.01	-.03	.03	.02	
PBC	<.01	-.004	.01	<.01	
Direct Effects	.04	-.03	.11	.04	.03
Gender norm beliefs → Intent					
Total	**.14*****	.06	.23	.04	.27
Indirect (total)	**.09*****	.03	.16	.03	.17
Attitudes	**.05****	.01	.11	.03	
Injunctive norms	.04	.01	.08	.02	
Descriptive norms	<.01	-.02	.02	.01	
PBC	<.01	-.05	<.01	<.01	
Direct	.06	<.01	.10	.03	.11

Note. N = 408. PBC= perceived behavioural control; 95% CI = percentile confidence interval based on 5000 bootstrap samples.
Bonferroni Correction applied.
$^{**}p < .01$, $^{***}p < .001$

Appendix O: Wave 1 Questionnaire (Help-seeking Measures)

[Only participants who indicate prior victimization (i.e., selected ≥1 for any item in Q18) will complete Q19 – Q25]

INSTRUCTIONS: You previously indicated that a dating partner engaged in the following: [Auto-fill from Q18]. The remaining questions reflect your response to those behaviors.

Q19. INSTRUCTIONS: Please indicate the level of agreement you have with the following statement.

A. I was fearful or afraid because of what my dating partner did to me.
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

B. How long did the following behaviors occurred: [Auto-fill from Q14].
☐ Less than one month
☐ At least one month to less than a year
☐ Over a year

Q20. INSTRUCTIONS: Thinking back, please indicate whether or not you sought help from the following social supports in response to your partner: [Auto-fill from Q18]

	Yes	No
Mental health service (e.g., psychologist, school counsellor, helpline)	☐	☐
Doctor/GP	☐	☐
Police	☐	☐
Friend	☐	☐
Parent	☐	☐
Sibling	☐	☐
Extended family (e.g., grandparents, aunt/uncle, cousins)	☐	☐
Partner's family	☐	☐
Religious leader	☐	☐
Social media or Internet service provider	☐	☐
I did not seek out assistance	☐	☐
Other (please specify)	☐	☐

Q21. INSTRUCTIONS: Please indicate which best describes your opinion. [Items to be randomized]

For me to seek mental health service following digital dating abuse is…
Very useless 1 : 2 : 3 : 4 : 5 : 6 : 7 Very useful
Very worthless 1 : 2 : 3 : 4 : 5 : 6 : 7 Very worthwhile

Very bad 1 : 2 : 3 : 4 : 5 : 6 : 7 Very good
Very Foolish 1 : 2 : 3 : 4 : 5 : 6 : 7 very wise
Very rare 1 : 2 : 3 : 4 : 5 : 6 : 7 very common

Q22. INSTRUCTIONS: Please indicate the level of agreement you have with the following statements. [Items to be randomized]

A. Most people who are important to me think that I should seek mental health service because of the digital dating abuse.
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

B. Most people who are important to me view mental health service in response to digital dating abuse very negatively.
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

C. Most people who are important to me would seek mental health service if they experienced digital dating abuse.
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

Q23. INSTRUCTIONS: Please indicate the level of agreement you have with the following statements. [Items to be randomized]

A. I think I can decide whether to seek mental health service or not.
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

B. Seeking mental health service is dependent on my choice.
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

C. I can seek mental health service if I like to do so.
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

Q24. INSTRUCTIONS: Please indicate the level of agreement you have with the following statements. [Items to be randomized]

A. I think I can get the information about mental health service easily. (Reversed scored)
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

B. I don’t know where to seek mental health service.
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

C. I can’t afford the money needed for mental health service

Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

D. The whole process of mental health service takes a long time.
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

E. The whole process of mental health service is complicated.
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

F. I think it is hard to find a mental health service that is suitable for me.
Strongly disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Strongly agree

Q25. INSTRUCTIONS: In the future, how likely is it that you would seek help from the following sources if your partner engaged in [Auto-fill from Q18].

A. Mental health service (e.g., psychologist, school counsellor, helpline, on-campus health services)
Extremely unlikely 1 : 2 : 3 : 4 : 5 : 6 : 7 Extremely likely

B. Doctor/GP
Extremely unlikely 1 : 2 : 3 : 4 : 5 : 6 : 7 Extremely likely

C. Police (e.g., city police, on-campus police)
Extremely unlikely 1 : 2 : 3 : 4 : 5 : 6 : 7 Extremely likely

D. Friend
Extremely unlikely 1 : 2 : 3 : 4 : 5 : 6 : 7 Extremely likely

E. Parent
Extremely unlikely 1 : 2 : 3 : 4 : 5 : 6 : 7 Extremely likely

F. Sibling
Extremely unlikely 1 : 2 : 3 : 4 : 5 : 6 : 7 Extremely likely

G. Extended family (e.g., grandparent, aunt/uncle, cousin)
Extremely unlikely 1 : 2 : 3 : 4 : 5 : 6 : 7 Extremely likely

H. Partner's family
Extremely unlikely 1 : 2 : 3 : 4 : 5 : 6 : 7 Extremely likely

I. Religious leader
Extremely unlikely 1 : 2 : 3 : 4 : 5 : 6 : 7 Extremely likely

J. Social Networking Sites or Internet service provider
Extremely unlikely 1 : 2 : 3 : 4 : 5 : 6 : 7 Extremely likely

K. I would not seek out assistance

Extremely unlikely 1 : 2 : 3 : 4 : 5 : 6 : 7 Extremely likely

Q18. EMAIL REQUEST [At the end of the baseline study (following Q19-Q25, if applicable), participants will be redirected to a new Qualtrics page, and their responses will NOT be linked to the participant's pervious responses]

SONA Participants:

A. I would like to be notified about study 2?
☐ Yes
☐ No

B. If you have answered "yes", please enter your EMAIL ADDRESS below. Your email address will not be linked to this survey or future studies.

Social media participants:

A. Would you like to be entered into a draw for one of five $100 Amazon gift cards?
☐ Yes
☐ No

B. I would like to be notified about study 2?
☐ Yes
☐ No

C. If you have answered "yes" to either of those questions, please enter your EMAIL ADDRESS below. Your email address will not be linked to this survey or future studies.

Appendix P: Results for University-Only Sample

Table 18

Direct Effects of Study Variables for University-Recruited Participants

Parameter	*B*	95% CI for *B*		*SE B*	β
		LL	UL		
Fear → Attitudes	**.14****	.05	.24	.05	.19
Fear → PBC	-.03	-.09	.04	.03	-.05
Chronicity (1 month to 1 year) → Attitudes	-.33	-.71	.03	.19	-.11
Chronicity (1 month to 1 year) → PBC	.14	-.10	.41	.13	.07
Chronicity (>1 year) → Attitudes	-.27	-.76	.20	.24	-.07
Chronicity (>1 year) → PBC	.08	.23	.38	.16	.03
Gender norms → Attitudes	-.11	-.28	.07	.09	-.08
Gender norms → PBC	.07	-.06	.19	.06	.07
Perceived barriers → Attitudes	-.02	-.16	.11	.07	-.02
Perceived barriers → PBC	**-.30*****	-.39	-.20	.05	-.04
Past use of services → Attitudes	.56	.12	.99	.22	.15
Past use of services → PBC	-.22	-.67	.17	.22	-.08
Attitudes → Intent	**.43*****	.27	.58	.08	.28
PBC → Intent	<.01	-.21	.23	.12	<.01

Note. *N* = 285. PBC = perceived behavioural control. 95% CI = percentile confidence interval based on 5000 bootstrap samples.
Bonferroni Correction applied.
$^{*}p < .13$, $^{**}p < .01$, $^{***}p < .001$

Table 19

Total, Direct and Indirect Effects of Hypothesized Antecedents on Help-seeking Intentions following Digital Dating Abuse Victimization for University-Recruited Participants

Parameter	*B*	95% CI for *B*		*SE B*	β
		LL	UL		
Fear → Intent					
Total	**.32*****	.18	.49	.07	.27
Indirect (total)	**.06****	.02	.11	.02	.05
Attitudes	**.06****	.02	.10	.02	
PBC	<.01	-.01	.01	.01	
Direct	**.26*****	.12	.39	.07	.22
Chronicity (1 month to 1 year) → Intent					
Total	.14	-.32	.63	.24	.03
Indirect (total)	-.14	-.32	.02	.09	-.03
Attitudes	-.14	-.26	.01	.09	
PBC	<.01	-.05	.04	.02	
Direct	.28	-.16	.74	.23	.07
Chronicity (> 1 year) → Intent					
Total	-.34	-.99	.34	.34	-.05
Indirect (total)	-.12	-.34	.10	.11	-.02
Attitudes	-.12	-.28	.05	.11	
PBC	<.01	-.05	.03	.02	
Direct	-.22	-.89	.45	.33	-.04
Gender norm beliefs → Intent					
Total	-.03	-.26	.20	.12	-.02
Indirect (total)	-.05	-.13	.03	.04	-.02
Attitudes	-.05	-.11	.02	.04	
PBC	<.01	-.02	.03	.01	
Direct	.01	-.21	.23	.11	.01
Perceived barriers → Intent					
Total	-.15	-.31	.02	.08	-.09
Indirect (total)	-.01	-.10	.07	.04	-.01
Attitudes	-.01	-.05	.04	.03	
PBC	<.01	-.07	.07	.03	
Direct	-.14	-.30	.04	.09	-.08
Past use of services → Intent					
Total	**2.46*****	1.85	3.04	.30	.42
Indirect (total)	**.24****	.05	.46	.10	.04
Attitudes	.24	.04	.36	.10	
PBC	<.01	-.06	.09	.03	
Direct	**2.23*****	1.67	2.77	.28	.38

Note. N = 285. PBC = perceived behavioural control. 95% CI = percentile confidence interval based on 5000 bootstrap samples.
Bonferroni Correction applied.
$^{**}p < .01$, $^{***}p < .001$