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Exploring Cyber-Based Dating Aggression during Adolescence using Ecological Momentary Assessment

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Exploring Cyber-Based Dating Aggression during Adolescence using Ecological Momentary

Assessment

by

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Abstract

This study examined Cyber-Based Dating Aggression (CBDA) using Ecological Momentary Assessment (EMA). CBDA was defined as intentional harmful behaviour through communication technology within a dating relationship that a romantic partner wants to avoid (Attewell & Fritz, 2010; Corcoran, Guckin, & Prentice, 2015; Piitz & Fritz, 2009). EMA is characterized by repeated measurements of a specific event as participants go about their daily lives (Hektner, Schmidt, & Csikszentmihalyi, 2007). The final sample included 52 participants, five of whom indicated they experienced CBDA over the three-week data collection period. Three incidents of sexting, two incidents of a privacy breach, and one incident of control were reported. Participants who experienced CBDA reported that it had little to no negative effect on their relationship satisfaction. Written responses related to the behavioural reactions of participants who experienced CBDA were also collected; most responses included some type of positive communication with their partner, with other reactions including substance use or doing nothing. As there are few studies exploring online dating aggression during adolescence, this study contributed to a growing area of research by attempting to employ a real-time data collection strategy (EMA) with a small sample of older adolescents. Given the small sample size, inferential statistical analysis was not possible, and the study is largely descriptive in nature, limiting generalizability to the larger population.

Keywords: adolescents, romantic relationships, technology, Cyber-Based Dating Aggression, Ecological Momentary Assessment

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Abbreviation	Definition
CBDA	Cyber-Based Dating Aggression
EMA	Ecological Momentary Assessment
ESM	Experience Sampling Method

Chapter 1: Introduction

During adolescence, individuals are progressing through a developmental time period that involves the search for romantic relationships in order to promote their own autonomy and identity (Glass, Fredland, Campbell, Yonas, Sharps, & Kub, 2003). The ways in which teens engage in or initiate romantic relationships, however, has changed in recent years. Teens are now growing up in a new world that is connected by cell phones, apps, and the like, and thus it is not surprising that they are using this highly accessible technology to initiate or improve their romantic relationships (Kellerman, Margolin, Borofsky, Baucom, & Iturralde, 2013; Subrahmanyam & Greenfield, 2008). Although youth may use this technology positively, they can also use it to communicate with their romantic partner in negative ways. The majority of past studies focusing on these negative interactions have concentrated on when they occur between couples face-to-face. With the advent of different types of technology used to communicate, however, the ways that aggression is perpetrated are vastly changing. Cyber-Based Dating Aggression (CBDA) is a relatively recent form of aggression, defined as intentional harmful behaviour through communication technology within a dating relationship that a romantic partner wants to avoid (Attewell & Fritz, 2010; Corcoran, et al., 2015; Piitz & Fritz, 2009).

To date, CBDA has been primarily studied through retrospective surveys, whereby participants are asked to summarize their past experience over a period of time (e.g., the last 12 months). This method of data collection is feasible when collecting information about historical and distinct behavioural events (e.g., your first job, car accident, wedding day, etc.). However, it is not recommended when studying events, such as CBDA, which are irregular (i.e., does not occur on a regular schedule; Reed, Tolman, & Ward, 2017), vary in intensity (i.e., different types of CBDA have been found to be rated more seriously than others; Baker & Helm, 2010), and

covary with other factors (i.e., other factors can occur around the same time as and be related to experiencing CBDA, like the type of communication technology used or what occurs before and after the CBDA event; Stone, Shiffman, Atienza, & Nebeling, 2007). This is because of the biases associated with trying to recall such events (Stone et al., 2007). Past research has found that individuals are unable to accurately provide retrospective information about their daily behaviour or experiences (Benard, Killworth, Kronenfeld, & Sailer, 1984; Yarmey, 1979) and this is especially true in the area of dating violence, where participants are hesitant to describe their involvement in aggression (Connolly, Friedlander, Pepler, Craig, & Laporte, 2010).

A more appropriate way of studying CBDA is to use an Ecological Momentary Assessment (EMA) methodology. EMA is a data collection framework, which is characterized by repeated measurements of a specific event as participants go about their daily lives (Hektner et al., 2007; Stone et al., 2007). This methodology is preferred because it captures an individual's experience in the moment, rather than individuals having to remember these experiences from the past. A reliance on memory forces one to use estimation strategies, which leads to possible bias in their responses. For example, participants' memory of their average past experience is greatly influenced by their worst experience (i.e., saliency bias; Menon & Yorkton, 2000) or their most recent experience (i.e., recency bias; Shiffman, Hufford, & Hickox, 1997; Redelmeier & Kahneman, 1996), leading to an inaccurate averaging of all of these events.

In light of the above argument, the purpose of this study was to explore Cyber-Based Dating Aggression (CBDA) victimization in a sample of adolescents (age 17-19) using a novel methodology (EMA) that asks about participant CBDA events using a structured daily survey method to gather information on this phenomenon in real-time (i.e., within the day it occurred). The focus of this study is only on those who have been victimized by CBDA and not on the

perpetrators of CBDA. The rationale for this was twofold: To target a more focused group given that this is the first study to explore CBDA using EMA, and to reduce burden and cognitive load for adolescents, as the request for daily reports of an event using EMA has been a noted barrier to compliance (e.g., Santangelo, Ulrich, Ebner-Primer, & Trull, 2013). On the second point, asking participants to respond solely on their victimization experiences, rather than both victimization and perpetration experiences, may reduce the amount of information teens have to retrieve prior to responding. Further, past research has shown that in situations of cyclical retaliation, perpetrators and victims become intermingled, and teens themselves have a hard time identifying roles (bully, victim, or witness) in online aggressive reports (Law et al., 2012). Thus, by focusing on victimization in the present study, it was hoped that this would reduce both the cognitive load and confusion for teens.

Currently, there are no studies that analyze CBDA in real-time, despite the fact that the limitations of using retrospective reports have been discussed intermittently in the literature for more than two decades (Fernandez-Gonzalez, O'Leary, & Munoz-Rivas, 2013). As this is one of the first studies to employ this methodological approach (i.e., EMA) in the domain of CBDA, the areas in need of research are vast and thus, the nature of the current study is largely exploratory. With this in mind, the areas of research chosen in the study represent first steps in an attempt to better understand CBDA. First, in understanding that CBDA is an irregular event (i.e., it does not occur on a scheduled time frame; Reed, et al., 2017), this study sought to collect data on prevalence rates in real-time, using EMA, with the premise that having teens report on CBDA events as they happen will provide more accurate prevalence rates than if they were to report on them retrospectively. Second, as CBDA has been found to vary in intensity depending on the type of CBDA experienced (Baker & Helm, 2010), this study sought to understand what type of

relationship, if any, CBDA has on relationship satisfaction after the event occurs. Perhaps different types of CBDA relate to higher, lower, or no change, in relationship satisfaction. Finally, to better understand other factors that can occur when experiencing CBDA, this study sought to examine what type of responses adolescents engage in after experiencing a CBDA event (e.g., do they retaliate, communicate with their partner, tell a peer, etc.).

The literature review to follow provides an overview of adolescent romantic relationships and technology use in order to contextualize CBDA between romantic couples and facilitate a better understanding of the ways in which teens use technology to communicate together as a couple. CBDA, as operationally defined in the present study, will then be discussed in the context of how EMA may be used to more accurately study this behaviour. The brief review of the extant literature will expose specific gaps in the research that will culminate in articulating the research questions guiding the design and analysis of the present study.

Chapter 2: Literature Review

Adolescent Romantic Relationships

Romantic relationships in adolescence are important in establishing loving relationships in adulthood, regardless if these relationships do not last into adulthood (Connolly et al., 2014). They play an important part in allowing adolescents to understand and work through their identity and individuation (Furman, Brown, & Feiring, 1999) and are believed to play a vital part in adolescents' mental health and adjustment (Furman & Shaffer, 2003). Adolescent romantic relationships are quite common; Carver, Joyner, and Udry (2003) revealed that 25% of 12-year-old, 50% of 15-year-old, and 70% of 18-year-old teens indicated they had a romantic relationship in the past 18 months. Most often, romantic relationships in early adolescence are brief, lasting only a few weeks. In middle adolescence, dating relationships may last for six months, and in later adolescence, for a year or more (Carver et al., 2003; Connolly et al., 2014). On average, teens have approximately four romantic relationships throughout adolescence (Connolly & McIssac, 2009).

Empirical support suggests that in late adolescence, youth may have longer lasting relationships, but they are battling with the balance of being in a romantic relationship and also maintaining a separate sense of self. As Tuval-Mashiach and Schulman (2006) suggest, this may contribute to increased conflict in relationships at this age. These adolescents are balancing their own desire to be autonomous, but also intimate; that is, dating partners desire to express their own needs and interests, but also want to feel close enough to their partner to be able to recognize, understand, and consider their partner's needs and interests (Selman, 1989; Selman, Beardslee, Schultz, Krupa, & Podorefsky, 1986). It is these competing processes that can lead to

conflict between couples, but with little competence in dealing with it (Tuval-Mashiach & Schulman, 2006).

Research has shown that adolescents can experience considerable distress in response to conflicts with their partner because these conflicts take away from or impact their need for social connectedness and social status (Donnellan, Larsen-Rife, & Conger, 2005). One of the ways in which conflicts occur between couples is through face-to-face aggression. Turmoil experienced in this way between romantic partners has been linked with experiencing anxiety, depression, or lower levels of life satisfaction (Callahan, Tolman, & Saunders, 2003). However, with the development of new technology, such as computers, laptops, cellphones, and the applications available on these devices, the ways that youth are perpetrating or experiencing conflict in their relationships have changed. Of particular concern, is dating aggression that occurs through communication technology. The aspects of technology create worrisome and arguably more detrimental features of dating aggression than when it occurs face-to-face, as teens can be contacted at any time of the day and become victims of either private (e.g., through text message) or public (e.g., through Facebook) dating aggression within the cyber world (Lenhart, Smith, & Anderson, 2015; Zweig, Lachman, Yahner, & Dank, 2014). In order to further understand how teens can use technology aggressively in dating relationships, it is important to first gather a deeper understanding of the ways in which teens use technology to communicate together as a couple.

Adolescent Technology Use in Dating Relationships

Since social connectedness is an important factor in adolescents' development (Baumeister & Leary, 1995; Maslow, 1943), it is not surprising that adolescents are using highly accessible technology to develop and progress their relationships and to feel a sense of belonging

(Allen, et al., 2014; boyd, 2014). For instance, Davis (2012) found that social media helped youth stay in touch with their friends regardless of their physical location and allowed them to broaden their friendship groups. With this in mind, children and youth are being described as "digital natives" (Prensky, 2001, p. 1), because they have known nothing other than homes and lives connected by computers, cellphones, video games, and the like. In fact, Johnston and Puplampu (2008) have recently proposed that the "techno-subsystem" be included as a dimension of the microsystem within Bronfenbrenner's Ecological Systems Theory (Bronfenbrenner, 1974). This new subsystem includes the interaction between the child and living (e.g., peers, family, school) and nonliving (e.g., the Internet) ecologies in his or her immediate environment (Johnson, 2010). For example, many children and adolescents now initiate, develop, and sustain their relationships with peers over the Internet.

Similar to using technology within friendships, adolescents use technology to either initiate a romantic relationship (e.g., ask one out on a date through a text), improve their romantic relationships, or to break up the relationship (Kellerman et al., 2013; Subrahmanyam & Greenfield, 2008). Text messaging has been found to be the most prominent means of communicating in adolescent dating relationships (Lenhart et al., 2015), as 92% reported they have spent time text messaging with their partner at least occasionally. Social media (e.g., Facebook) was reported by 70% of teens as a way of spending time together. This latter statistic represents an increase in online dating communication, where previous studies found that six out of 10 American teens ($n=2252$) reported that they used social networking websites (e.g., Facebook) in their current or past relationship to communicate (Madden et al., 2013).

Teens use technology and social media to communicate positively with their romantic partner, but technology also presents a new portal for perpetrating or experiencing potentially negative dating behaviours. For example, a teen may constantly check in (e.g., ask who they are with or what they are doing) as a way to control their romantic partner's whereabouts (e.g., to make sure their partner is not with someone they do not want their partner to hang out with).[1] This new way of communicating negatively in dating relationships, mixed with the high emotions of adolescence, the importance of teens' reputation (Chadsey & Han, 2005; Tuval-Mashiach & Schulman, 2006; Wright, 2015), and the fact that key parts of teens' brains responsible for assessing and controlling behaviour is not fully developed (Gross, 2014; Patton et al., 2009; Whelan, et al., 2011), combine to produce unpredictable and high-risk results. In addition to these factors, adolescence is also characterized by a need for social connectedness, social status importance, high emotions, and difficulty balancing these factors. Thus, it is not surprising that adolescents experience considerable distress in response to conflicts with their partner (Donnellan, Larsen-Rife, & Conger, 2005) and this has been the case when teens experience Cyber-Based Dating Aggression (CBDA) as well (e.g., Smith et al., 2018).

The next section will discuss the lack of consistency in terms of previous definitions used to describe CBDA. Within this discussion, a clearer operational definition, which was used in the current study, is presented.

Definition of Cyber-Based Dating Aggression (CBDA)

CBDA represents a burgeoning area of research, but one that is still in its infancy. Despite this, many terms have been used in previous studies to describe CBDA. These include

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[1] Reed, Tolman, and Ward (2017) indicate that intent to harm is an important element of "abuse," but in some examples, such as this one, behaviours that occur outside of one's conscious or explicit intent to harm might also be "abusive."

such terms as Electronic Dating Violence (Hinduja & Patchin, 2011), Cyber Dating Abuse (Zweig, Dank, Yahner, & Lachman, 2013), Tech Abuse in teen relationships (Picard, 2007), Electronic Aggression (Bennet, Guran, Ramos, Margolin, 2011), Hurtful Cyber-Teasing between romantic partners (Madlock & Westerman, 2011), Intimate Partner Cyber Harassment (Melander, 2010), and Technology Assisted Adolescent Dating Violence and Abuse (TAADVA; Stonard, Bowen, Lawrence, & Price, 2014). For the purpose of this paper, unless referencing other studies, the term Cyber-Based Dating Aggression (CBDA) will be used to describe any intentional harmful behaviour through communication technology within a dating relationship that a romantic partner wants to avoid.

The use of the term CBDA in the present study is intentional. The terms "violence" and "abuse" between couples are commonly used in the literature and are generally viewed as interchangeable. However, definitions of violence and abuse, even when using the same word in their term (e.g., cyber dating *abuse* and digital dating *abuse*), are vastly different. For example, Zweig et al. (2014) defined cyber dating abuse as "control, harassment, stalking, and abuse of one's dating partner via technology and social media" (p. 1306). Reed et al. (2017), on the other hand, define what they call digital dating abuse as behaviours that "include the use of digital media to monitor, control, threaten, harass, pressure, or coerce a dating partner" (p. 79). With the exception of both definitions including the words "control," "harass," and "dating partner," there are few similarities. Zweig et al. (2014) use the term stalking in their definition, whereas Reed et al. (2017) include words like pressure and coercion and add examples like "to threaten." The issue of a lack of a consistent definition has been pointed out in the general literature on cyber-bullying/aggression as well (e.g., Law, et al., 2012). In addition to differences in definitions, some researchers have suggested that studies not use the terms "abuse" and "violence," but

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rather have suggested the use of the term "aggression." To describe the reasoning behind this, universal definitions of abuse and violence are offered from the Oxford Dictionary as well as an explanation as to why these terms may not be appropriate in this context.

The Oxford Dictionary defines abuse as speaking to someone in an offensive way, sexually assaulting someone, or treating someone regularly or repeatedly with cruelty or violence (2015a). Corcoran et al. (2015) suggest that repetition takes on a different form in the cyber realm; that is, one act of aggression by one partner may create a wave of repeated victimization from bystanders (e.g., through viewing, sharing, and liking aggressive content posted online). Thus, a single act of cyber-aggression could have detrimental effects and cause psychological harm on the victim, eliminating the need to endure multiple episodes of victimization before the behaviour is recognized as abuse (Corcoran et al., 2015).

The Oxford Dictionary defines violence as physical force that is intended to hurt, damage, or kill someone or something or the unlawful exercise of using physical force or intimidation (2015b). Physical force is not used in cyber-aggression and thus, Corcoran et al. (2015) propose using the term "aggression" to explain the intentional harmful behaviours perpetrated or endured online. They suggest the following definition for cyber-aggression be used: "Any behaviour enacted through the use of information and communication technologies that is intended to harm another person(s) that the target person(s) wants to avoid" (2015, pp. 252-253). Pyzalski (2012) indicates that examining the identity of the target person(s) distinguishes between cyber-aggression between peers and cyber-aggression between others (i.e., romantic partners). Specific to the term CBDA, the identified target person is a romantic partner. Taking the above definitions and literature into account, the current study used the following definition of CBDA: Intentional harmful behaviour through communication technology within a

dating relationship that a romantic partner wants to avoid (Attewell & Fritz, 2010; Corcoran, et al., 2015; Piitz & Fritz, 2009).

Further operationalizing CBDA, the researcher examined and categorized this type of dating aggression into five different subtypes, which were based on Zweig et al's (2013) 16-item survey measuring what they termed "cyber-dating abuse." The five subtypes of CBDA are: emotional (e.g., purposefully trying to emotionally hurt ones partner), social (e.g., purposefully damaging a partners social status), privacy (e.g., purposefully over stepping romantic relationship privacy boundaries), sexting (e.g., purposefully engaging in sexually aggressive behaviours towards his or her partner through communication technology), and control (e.g., purposefully trying to control, intimidate, and portray power over a partner).

It is important to discuss both the perpetrator's intent and victim's perception of aggression when defining CBDA. Intent and perception of aggression are equivocal areas in CBDA research. Research completed by PREVNet (Promoting Relationships and Eliminating Violence Network) on bullying behaviours has indicated that, in the definition of aggression, there may be intent or no intent to harm the victim (Pepler & Craig, 2014). Similarly, Reed et al. (2017) and Corcoran et al. (2015) discuss how intentionality may not be consciously present in CBDA behaviour, and that unintentional harmful acts can still have detrimental effects on the victim. As well, when experiencing CBDA by a partner, a victim may not initially perceive the act as intentionally aggressive, but the behaviour may still have an effect at a later time. For example, a victim may perceive his or her partner asking for nude photos as an act of intimacy or love, but later be harmed if they are shared or used against them. The current study attempted to operationalize a definition that made both the intent and perception of aggression evident to participants by using the words "intentional harmful behaviour" and "that a romantic partner

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wants to avoid," as well by using words in the survey that more clearly demonstrated aggression (e.g., "threatened," "pressured," and "tried to damage").

The identified differences in the ways in which CBDA has been operationalized in the literature reduces one's ability to fully understand CBDA because of, for example, the limitations it presents in gathering different prevalence rates. In addition to issues resulting from the lack of a consistent definition, another issue within this field of study that contributes to limitations in fully understanding CBDA is that previous studies have almost exclusively utilized retrospective measures, whereby participants respond about their CBDA experience by remembering and reporting on past events (e.g., in the past month, in the past 6 months, or even in the past 12 months). The next section begins by describing some of the limitations with using retrospective surveys in the study of CBDA and then outlines Ecological Momentary Assessment (EMA), a type of methodology that may lend itself to studying CBDA more accurately.

Ecological Momentary Assessment (EMA)

Retrospective surveys or reports are the dominant method of data collection in the social sciences (Hektner et al., 2007). This method of data collection is feasible when collecting information about historical and distinct behavioural events (e.g., your first job, car accident, wedding day, etc.). However, a large amount of research data has shown that individuals are not able to accurately recall past experiences, especially those that are irregular, vary in intensity, and covary with other factors (e.g., Bradburn, Rips, & Shevell, 1987; Gorin & Stone, 2011; Hammersley, 1994; Stone et al., 2007). In fact, there is research to suggest that one's memory is substantially inaccurate when recalling past experiences to complete restrospective self-report surveys (Stone et al., 2007). As a result, biases begin to form, corrupting data even when the participant has no motive to do so (Stone et al., 2007).

Specific to the current study, CBDA is not a variable that is best studied retrospectively. This is because CBDA is an irregular event (i.e., does not occur on a regular schedule; Reed, et al., 2017), it varies in intensity (i.e., different types of CBDA has been found to be rated more seriously than others; Baker & Helm, 2010), and covaries with other factors (i.e., other factors can occur around the same time as and be related to experiencing CBDA, like what occurs before and after the CBDA event; Stone, et al., 2007). However, retrospective reports are still the most prominent method used to study CBDA, despite knowing that individuals are unable to accurately provide retrospective information about their dating aggression experiences (Connolly et al., 2010). In fact, individual events that are similar to one another (e.g., when a romantic partner continually sends hurtful text messages to his or her partner throughout the week) have been found to become indistinguishable and irretrievable, making it difficult for participants to report on them (Stone et al., 2007). Given this finding in combination with memory bias, using retrospective reports to gather data arguably provides limited understanding of adolescents' engagement in CBDA. Ecological Momentary Assessment (EMA) is a type of methodology that may lend itself to studying CBDA more accurately.

EMA is characterized by repeated measurements of a specific event as participants go about their daily lives (Hektner et al., 2007). To date, EMA has been used in the study of many different clinical conditions including, but not limited to, stress and coping (e.g., Adam, 2005), depression and anxiety (e.g., Rusting & Larsen, 1998), schizophrenia and other psychotic disorders (e.g., Myin-Germeys, Nicolson, & Delespaul, 2001), eating disorders (e.g., Le Grange, Gorin, Catley, & Stone, 2001), alcohol, tobacco, and drug use (e.g., Collins, Kashdan, & Gollnisch, 2003), pain (e.g., Peters et al., 2000), and blood pressure (e.g., Steptoe, 2001). However, there is limited use of real-time methododology, such as EMA, in dating aggression

research. This is quite surprising given that the limitations of using retrospective reports have been discussed intermittently in the literature for more than two decades (Fernandez-Gonzalez et al., 2013). In contrast to retrospective reports, the advantage of collecting data on CBDA in real-time using EMA is that this type of methodology allows participants to report on day-to-day prevalence rates and experiences versus the average levels of aggression reported by studies using retrospective data (e.g., within the past year; Stone et al., 2007). In other words, EMA captures these CBDA moments or "snapshots" that are assessed in real-world settings, as they occur, rather than relying on a respondent to provide full and representative data on his or her past experience (Stone et al., 2007).

In light of the above review regarding retrospective study weaknesses, the present study explored CBDA victimization in a sample of adolescents (age 17-19) in real-time (i.e., within the day it occurred) using EMA. Literature in three major areas within CBDA will be briefly reviewed below as it relates to important research gaps and how EMA may be utilized to better close these gaps. First, in understanding that CBDA is an irregular event (i.e., it does not occur on a scheduled time frame; Reed, et al., 2017), this study sought to collect data on prevalence rates in real-time, using EMA, with the premise that having teens report on CBDA events as they happen will provide more accurate prevalence rates than if they were to report on them retrospectively. Second, as CBDA has been found to vary in intensity depending on the type of CBDA experienced (Baker and Helm, 2010), this study sought to understand what type of relationship, if any, CBDA has on relationship satisfaction after CBDA occurs. Perhaps different types of CBDA relate to higher, lower, or no change in relationship satisfaction. Finally, to better understand other factors that can occur when experiencing CBDA, this study sought to examine

what type of responses adolescents engage in after experiencing a CBDA event (e.g., do they retaliate, communicate with their partner, tell a peer, etc.).

Prevalence Rates of Cyber-Based Dating Aggression

As previously mentioned, just as the lack of a consistent definition makes it hard to fully understand CBDA, especially prevalence rates, the use of retrospective surveys also contributes to the problem. Since retrospective reports force participants to rely on estimation strategies to arrive at a plausible frequency report, the range of CBDA prevalence rates collected retrospectively is significantly large. For instance, Lenhart et al. (2015) have found that 11% of teens reported that they have accessed a mobile or online account of a current or former dating partner without the other person knowing or getting permission. This breach of privacy may be aggressive when the intent is to search for something their partner may be hiding and confront them later on, leading to further mistrust in the relationship. Smith et al. (2018) studied "Cyber Dating Violence," defined as a form of violence happening online, where the perpetrator can disseminate harmful information about the victim in a short period of time to a very large audience and contact the victim at any time. They found victimization rates were higher than Lenhart et al. (2015) at 35.8%. A recent literature review by Stonard et al. (2014) examined the adolescent prevalence rates of 13 studies and found that victimization rates of CBDA ranged from 12% to 56%. Similarly, Reed et al. (2016) also reported a large range (from 0% to 41.9%) of victimization rates depending on the type of digital dating abuse behaviour (Straus & Douglas 2004).

Each of above studies used retrospective reports to collect their data, whereby participants are asked to respond about aggressive events that have occurred in the past (e.g., past month, 6 months, a year, etc.), leading to the belief that perhaps the methods used may impact

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the prevalence rates obtained. The dating aggression literature in general includes very few studies that have researched dating aggression in real-time (e.g., Cranford, Tennen, & Zucker, 2010; Moore, et al, 2011; Sullivan, Khondkaryan, Dos Santos & Peters, 2011; Sullivan, McPartland, Jaquier, Armeli, & Tennen, 2012). Sullivan and colleagues (Sullivan et al., 2012) studied intimate partner violence in 51 women (M_{age} = 39) over 90 days. Their data were drawn from a larger study examining the efficacy of different types of daily reporting among women currently experiencing intimate partner violence (Sullivan et al., 2011). An eligibility requirement of participants was that the women had experienced physical victimization within the last 30 days by their current partner. These authors found that psychological violence occurred on 27% of days. A second study was conducted by Moore and colleagues (Moore et al., 2011) who used electronic diaries to collect data on alcohol use and intimate partner violence in 184 males and females ranging from 18 to 42 years old. They found that over 15% of their sample reported engaging in at least one act of physical aggression, and 44% engaged in psychological aggression during a two-month data collection period. The rates of 15% (Moore et al., 2011) and 27% (Sullivan et al., 2012) in the EMA studies above are significantly lower than the ranges found in a review of psychological face-to-face dating aggression reported by females (51% - 55%) and males (45% - 54%) that was reported retrospectively (Stonard et al., 2014), but similar to the 44% of psychological aggression reported in Moore et al.'s (2011) study. The rates of 15% and 27% are on the lower end of rates reported in studies examining CBDA using retrospective reports (e.g., 12% to 56% in Stonard et al's [2014] review), whereas the 44% psychological aggression reported in Moore et al.'s (2011) study is on the higher end.

Currently, there is no extant studies using EMA to compare prevalence of CBDA. Further, the studies examining EMA and dating aggression noted above do not include

adolescent samples, revealing major gaps in the literature. CBDA examined retrospectively has found a wide range of prevalence rates across studies (e.g., 12% - 56%; Stonard et al., 2014). An improvement to this method of data collection, and thus an improvement towards studying more accurate prevalence rates, is to ask about these CBDA experiences in the moment, rather than participants relying on memory to report on online dating aggression experiences that have occurred in the past. Improving the accuracy of prevalence rates, not only as a whole, but by subtype of CBDA, is important in order to see how much of an issue CBDA is in the lives of adolescents and whether one subtype occurs more than the other, given that different subtypes could have different effects on teens. As well, such research may provide prevention and intervention programs with valuable information on target areas of remediation within CBDA.

Cyber-Based Dating Aggression and Satisfaction in the Relationship

In addition to understanding accurate prevalence rates of those who experience CBDA, understanding the "in-the-moment" effects that CBDA has on teens is also important, as CBDA has been found to vary in intensity depending on the type of CBDA experienced (Baker and Helm, 2010). Thus, this study sought to understand the consequence, if any, CBDA has on relationship satisfaction after a CBDA event has occurred. The relationship between CBDA and relationship satisfaction may be more accurately captured when teens report on it within the day it was experienced, rather than months later.

The extant literature appears to include an extremely limited number of studies exploring whether adolescent CBDA has an effect on relationship satisfaction, furthering the importance of researching this connection. In one unpublished study, however, Attewell and Schwartz (2013) studied whether relationship satisfaction predicted the perpetration of CBDA in adolescents who were: 1) currently in a relationship; 2) not in a current relationship and reporting on a past

relationship; or 3) had never been in a relationship before, and reporting on a potential future relationship. Results revealed that when participants were reporting on potential future romantic relationships, they noted that they would be more likely to engage in CBDA in the form of monitoring (e.g., checking up on their partner multiple times through text messaging when he or she did not want them to) as reports of relationship satisfaction increased. In light of these findings, it is important to understand that adolescents often positively predict their future (Chapin, Alas, & Coleman, 2005; Halfond, Corona, & Moon, 2012; Klaw, 2008; Weinstein, 1980), and may do so about their future relationship satisfaction. As well, it may be that these teens did not perceive monitoring as a negative or aggressive behaviour in dating relationships.

Similarly, Zweig et al. (2013) found that relationship quality was rated significantly higher by those who were victims of cyber dating abuse than those who were not. It may be that participants in this study were inflating their relationship quality scores and overcompensating because they were experiencing cyber dating abuse in their relationships. However, it may also be that a change in relationship satisfaction depends on what type of CBDA is experienced. For example, Connolly and Josephson (2007) found that monitoring the whereabouts of a partner might be misinterpreted as an act of love, whereas threatening a partner through technology may be interpreted more seriously.

Contrary to the studies above, Lucero and colleagues (Lucero, Weisz, Smith-Darden, & Lucero, 2014) studied the consequences of teens engaging in (i.e., perpetrating) "socially interactive technology abuse" (i.e., to threaten, stalk, demean, or control one's dating partner through social interaction technology) and found that this type of behaviour led to relationship damage. This consequence was most likely to be indicated when teens were trying to constantly monitor their partners behaviours (e.g., monitoring their partners pictures, emails, or inboxes to

see if they were talking to individuals of the opposite sex; Lucero et al., 2014). It seems reasonable to assume that "damage" to the relationship included decreased relationship satisfaction and perhaps this would be the case when experiencing CBDA as well.

Similar to the CBDA literature on relationship satisfaction, conclusions also appear to be mixed in the literature on relationship satisfaction and face-to-face aggression, where comparably more research has been conducted. Research has found that young university students who were not satisfied with their relationship were more likely to experience negative conflict in their relationships (e.g., difference of opinions, acting resentful or handling arguments in a negative way; Cramer, 2003). However, other studies suggest that when adolescents experience violence in their romantic relationships, levels of satisfaction do not change and these couples remain satisfied with their relationship (Capaldi & Crosby, 1997; Gray & Foshee, 1977).

In summary, CBDA research examining the effect that relationship satisfaction has on romantic relationships is quite mixed. The way that relationship satisfaction is studied (i.e., retrospectively) may have an effect on how adolescents respond. Past research has shown that individuals are unable to accurately provide retrospective information about their daily behaviour or experiences (e.g., Schwarz, 2007; Yarmey, 1979) and that this is especially true in the area of dating violence (Connolly, et al., 2010). It is possible that youth who respond about their CBDA experiences looking back over the past 12 months may have had a large amount of time between when the event occurred and responding about the event. It may be that an act of CBDA has an immediate effect on teen dating relationship satisfaction in the moment it was experienced, but these feelings and emotions are not "caught" when teens are reflecting and responding on these experiences in the past. This underlines the importance of studying CBDA in real-time, or at least within the same day it occurs, so that teens are responding as close to the context in which

the behaviour occurred.

Adolescent Responses of Cyber-Based Dating Aggression

Just as understanding the relationship CBDA has on relationship satisfaction after a CBDA event occurs in real-time is important, it is also important to understand other factors that occur in the after-moments of experiencing CBDA, such as teen responses. Asking about how teens respond to CBDA after months of experiencing the event exposes these reports to memory bias and inaccuracy. Thus, this study sought to examine what type of responses adolescents indicate they engage in at least within the day of experiencing a CBDA event (e.g., do they retaliate, communicate with their partner, tell a peer, etc.).

There are very few studies that document how teens respond to being victims of CBDA (e.g., with retaliation, thinking of the consequences before responding, telling their parents, etc.). Reed et al.'s (2017) study is the most recent that examines the adolescent responses of what they call Digital Dating Abuse. Responses included being dismissive (e.g., ignored it), responding with distress (e.g., crying, angry, upset), engagement (e.g., yelled at their partner, tried to talk to them, or threatened to break up with them), and blocking access (e.g., blocking their partner on a social networking website, avoided them in person, deleted or blocked their number). Kellerman et al. (2013) found that retaliation was often a response to experiencing electronic aggression from friends or dating partners. Thus, if the aggression experienced by adolescents "struck a nerve," a negative response such as retaliation may occur. Along the same lines, it may be that responses to experiencing CBDA depend on the initial emotions felt by the victim. For instance, Hudson et al. (2015) found that when experiencing feelings of jealousy, females exhibit more of an emotional reaction and males generally exhibit a more violent or aggressive behavioural

response. Lucero et al. (2014) indicated that when a partner feels jealously, excessive power and control behaviours that are similar to stalking might occur.

As well, it may be that the response to CBDA depends on the type of CBDA experienced (Hudson et al., 2015). Baker and Helm (2010) found that youth believed that physical and sexual aggression was undoubtedly serious, but that some forms of emotional abuse and cyber control within romantic partners were deemed more irritating than serious. The differences in these perceptions of dating aggression seriousness leads to the belief that individuals may react differently to different types of relationship conflicts and perhaps different types of CBDA. This highlights the importance of examining how adolescents respond not only to CBDA in general, but how they respond to different subtypes.

In summary, analyzing teen responses to CBDA retrospectively is likely not as valid as when participants are able to describe its occurrence and how they responded as it happened, due to decreased memory bias when responding about their reactions in the moment. Accurately understanding how teens respond to CBDA is a starting point for interventionists in gathering more information on where education should be targeted in relation to healthy romantic relationship communication and appropriate reactions to CBDA. One of the most widely used methods of examining data in real-time is to analyze the data qualitatively, which allows researchers to illustrate a particular pattern in the individual's experience as it occurred through the use of detailed descriptions of single cases (Hektner, Schmidt, & Csikszentmihalyi 2007). In line with Hektner et al.'s (2007) comments on the richness of examining individual experiences as they occur, this study used EMA to qualitatively analyze how adolescents responded to CBDA events.

Summary and Research Questions

Due to the increased use of technology and social media in adolescence, the methods and manner by which teens communicate has become much more complex. Not surprisingly, the ways in which adolescents initiate and develop romantic relationships has also changed. Although communication technology can be used by youth in positive ways with his or her partner, it can also be used repeatedly and relentlessly in negative, aggressive ways. From the literature reviewed above, it is apparent that CBDA occurs in adolescent dating relationships, but the prevalence rates vary from study to study and this may be a reflection of how data is collected (i.e., retrospectively versus in real-time using EMA). As well, how CBDA impacts relationship satisfaction is worthy of investigation, as it may be that relationship satisfaction is affected in the moments after CBDA occurs; a result best studied using EMA (Stone & Shiffman, 1994). Lastly, very little is known about how teens react to experiencing CBDA (e.g., do they tell a peer, do they retaliate, or do they ignore the behaviour?). Understanding their reactions as they happen may help to better understand how teens are dealing with CBDA in their romantic relationships.

The overall objective of the proposed study was to better understand CBDA victimization in an adolescent population by examining this behaviour as close as possible to the context in which it occurs using an EMA methodology. This study addressed the following research questions:

1) *How prevalent is the victimization of Cyber-Based Dating Aggression (CBDA) as reported by a sample of adolescents within a 3-week Ecological Momentary Assessment (EMA) data collection period? Specifically, how many CBDA events – both total and by subtype – will be reported by participants within the 21-day data*

collection period?

2) *How is CBDA related to adolescent romantic relationship satisfaction when studied in real-time? Specifically, does relationship satisfaction differ based on the type of CBDA experienced and do those who experience CBDA have lower relationship satisfaction than those who do not experience CBDA?*

3) *How do adolescents respond to being a victim of a CBDA event (e.g., with retaliation, do they tell a peer or parent, etc.)?*

Answering these research questions will contribute to the literature by increasing the awareness and understanding of this emerging type of cyber-aggression in adolescent romantic relationships, specifically the individual teen experiences of CBDA. Findings will also contribute to future research on education and prevention programs, particularly as technology continues to increase in case and sophistication of use. Finally, as there are no extant studies exploring this type of aggression during adolescence using real-time data, this study is a contributor to a growing area of research.

Chapter 3: Methodology

Research Design

Ecological momentary assessment (EMA). EMA is characterized by repeated measurements of a specific event as participants go about their daily lives. Shiffman, Stone, and Hufford (2008) define EMA as: "methods using repeated collection of real-time data on subjects' behavior and experience in their natural environments" (p. 3). The approach is "ecological" as it allows participants to respond in their natural environments compared with the more artificial setting of a laboratory or clinic (Fisher & To, 2012). In the current study, data was collected using structured daily surveys to gather self-reports on CBDA using the Ecological Momentary Assessment (EMA) methodology.

Strengths and weaknesses of ecological momentary assessment. The strengths and weaknesses of this methodology need to be considered in order to develop a deeper understanding of EMA in general and understand how EMA can facilitate in providing a more in depth understanding of CBDA. The benefit of using EMA to study behaviour is that this type of methodology asks participants to report about their experiences and circumstances as they happen or at least within the same day (Schwarz, 2007). The benefits of collecting data in this way are that it offers the ability to gather daily responses and analyze this data for three important purposes that relate to the current study.

First, these data allow for researchers to examine individual differences (e.g., pain before and after treatment; Shiffman et al., 2008). Similarly, in the current study, EMA was used to examine individual differences in how teens responded after experiencing Cyber-Based Dating Aggression (CBDA) and how CBDA affected their relationship satisfaction. Second, EMA data can be analyzed for contextual associations, such as the association between emotions and stressful events (Myin-Germeys, van Os, Schwartz, Stone, & Delespaul, 2001). In the current

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study, EMA was used to better understand the association between teen responses and CBDA events and type of CBDA and relationship satisfaction. Lastly, EMA data may be used to examine temporal sequences in order to determine antecedents (e.g., triggers) and consequences of CBDA (Santangelo, et al., 2013; Shiffman et al., 2008). For instance, Whelan et al. (2011) used electronic diaries to gather information on contextual triggers that elicited behaviours from children with Attention Deficit Hyperactivity Disorder. Within the context of the current study, EMA was used to examine elicited behaviours after experiencing CBDA (e.g., responses to CBDA).

Other advantages include the different types of sampling strategies used to assess the participant's experience and the multiple ways in which researchers can analyze EMA data (Hektner et al., 2007). Researchers can choose to perform event-based, time-based, or a combination of both sampling techniques. In event-based sampling, the construct under study occurs in discrete episodes (e.g., headaches, eating meals, asthma attacks, smoking a cigarette, etc.). Event-based recording on behalf of the participant is straightforward: they make a recording every time the predefined event occurs. Often, participants are also asked further details about the event, such as what happened before or after (Hektner et al., 2007). Time-based sampling is different from event-based sampling, as time determines when the participant records data rather than an event. Time-based sampling is well suited for studying continuous, but varying constructs, such as pain, mood, fatigue, motivation, etc. (Hektner et al., 2007). A combination of both event-based and time-based sampling may be used when, for example, a researcher is trying to establish whether there is an association between depression (studied using time-based sampling) and drinking (studied using event-based sampling; Hektner et al., 2007).

Researchers can also choose to perform complex multilevel analyses to produce a rich picture of the results, or perform simple analyses (e.g., t-tests or comparative analysis through qualitative means), which Hektner et al. (2007) suggest can be just as powerful as complex statistical analyses, especially when examining data qualitatively, given the richness of individual data collected. Of course, the type of analysis used depends on one's research questions, and researchers must first determine whether their questions are specific to people or to situations (Larson & Delespaul, 1992). For example, a research question about persons would involve collapsing all individual participants' daily data into one mean score and comparing data across individuals (Larson & Richards, 1989). A research question about situations would involve comparing, for example, multiple psychological states collected throughout the data collection period, regardless of whether they came from the same participant or not (Larson, 1983).

Despite the benefits of utilizing this type of data collection approach to study behaviour, there are also disadvantages to this methodology, such as selection bias and compliance, and these are discussed in the limitations section in chapter 5. Nonetheless, EMA has been referenced in the literature as a type of methodology that can be utilized to avoid retrospective biases due to the assessment of real-time occurrences (e.g., Ben-zeev, McHugo, Xie, Dobbins, & Young, 2012; Santangelo, et al, 2013; Stone & Shiffman, 1994). In a recent study, Kellerman et al. (2013) suggested that EMA may be particularly useful in measuring electronic communication, as this means of interacting tends to occur in "rapid bursts throughout the day" (p. 302). Given the strengths reported above, it appears that utilizing this type of data collection approach when studying dating aggression through technology is warranted.

Type of EMA sampling. Sampling strategies in the current study were event-based, as occurrences of CBDA were conceptualized as occurring in discrete episodes (Shiffman, 2007), and adolescents offered additional quantitative and qualitative descriptions (i.e., type into text boxes) each time a CBDA event occurred. Thus, adolescents could respond immediately when a CBDA event occurred, and each participant could fill out more than one survey a day (e.g., if another CBDA event occurred since their last response within 24 hours).

Participants

Three hundred and ten youth who were provided passive consent were given the SimpleSurvey link to provide data on demographics and cyber-based dating aggression (CBDA) behaviour. Sixty-three (20%) gave assent or consent to participate. One youth who consented to participate and completed a daily survey indicating that CBDA occurred did not complete the demographics questionnaire. This participant's data was deemed invalid and subsequently deleted. Ten additional participants were omitted from the analysis, as they either only completed the demographics questionnaire and not a daily survey or they did not complete the demographics questionnaire and only completed one daily survey. Only participants who completed both the demographics questionnaire and at least one daily survey regarding CBDA were analyzed in the study. The final sample included 52 participants who collectively provided 252 responses over the three-week data collection period, resulting in a 17% response rate. Twenty-two participants of the final sample completed the daily survey only once. Ten participants completed the daily survey twice. Twenty participants completed the survey three or more times. Three participants completed the daily survey every day over the three-week data collection period.

Participants were recruited from seven high schools in a rural school board and from 14

introductory courses for the Spring and Summer session at the University of Calgary. The

Research Participation System with the Department of Psychology at the University of Calgary

was used to recruit participants as well, although no individuals employed this system to sign up

for the study. Ethical approval was received from both the Conjoint Faculties Research Ethics

Board (CFREB) and the research ethics committee of the local school board.

In the school board, principals were contacted to ask if they were interested in having

data collected in their school. Details were shared regarding the nature of the study, time

commitments, and what would be needed on their behalf. Once approved at the principal level,

passive parent consent forms were provided. Those students whose parents declined participation

by written communication were not included in the study. The reasons for using passive consent

in the high school setting were because this procedure has been known to create a more

representative sample relative to the larger population (Higgerson et al., 2014). As well, the

intent was to decrease barriers in allowing teens to participate, as parents only had to respond if

they did *not* want their child to participate. This consent procedure benefited participants as well,

as their privacy was respected (e.g., if they had not yet disclosed their romantic relationship to

their parents) and allowed them to give assent to participate in the study without raising

questions about their romantic life with their parents. To ensure ample opportunity for parents to

read the consent form, it was sent out via email, published on the high school's website, and

distributed to the students age 17-19 to bring home to their parents (see Appendix A). Students

permitted to participate were provided an explanation of the nature of the study, what they would

be asked to do (i.e., 3-week-long daily participation), and inclusionary criteria to participate (i.e.,

individuals who are in a current romantic relationship, who own a computer or mobile phone,

and who have access to Wi-Fi at least once daily; see Appendix B). A dating relationship was defined as having "a boyfriend or girlfriend, someone who you like or love and spend time with, or a relationship that might involve sex" (Zweig et al., 2014, p. 3). A three-week participation period was chosen, as any time period longer than this would have likely put more burden on participants, and many of researchers utilizing EMA (e.g., Hektner et al., 2007; Hufford and Shiffman, 2003; Santangelo et al., 2013; Stone et al., 2007) suggest lessening the burden and cognitive-load in real-time data collection methods as much as possible.

When recruiting participants through Spring and Summer introductory courses at the University of Calgary, passive consent was not gathered from parents, as the ethics board indicated those age 17 in University are able to consent themselves (see Appendix C). Professors were contacted for permission to take 10-15 minutes of their class time to present the study and have the participants complete the demographics and at least one daily survey if participants wanted to.

Both high school and university participants were given access to a SimpleSurvey link for the study, which included participant assent (for high school participants) or consent (for university participants) and screening questions (i.e., are you between the ages of 17-19, are you currently in a romantic relationship, and do you have access to a cellphone or computer daily with access to WiFi at least once a day). If participants passed the screening questions, they were then asked to complete both the demographics and a daily survey at that time. Participants were asked not to complete surveys within school hours. They were told that if a CBDA event occurs during these times, to fill out the survey in reference to that event at a later time, but still within that same day. Appropriate security measures were put into place to protect the confidentiality of raw data, including the use of an individual Personal Identification Number (PIN) to link

demographics data to the daily survey data. Participants were provided with incentives to participate in the way of one electronic email ballot for every day that they participated.

Participants were asked to take a picture of the survey link or to write it down. It was also suggested to participants that they set reminders in their phone to remember to participate. E-mail addresses were gathered for the sole purpose of contacting the winners of each weekly compensation draw and reminding participants of the survey. For instance, incentive was provided in the way of one (1) email ballot earned for every day they submitted a survey, whether CBDA occurred or not. These ballots were then put into a weekly draw for a chance to win a $20 gift card to Starbucks or Tim Hortons. There were separate files for data responses and for electronic ballots. Also, using the email addresses participants gave for ballots, the primary researcher sent weekly blind copy emails to participants to remind them about the survey and provide the link again. Data were collected over three weeks (21 days) for each "wave" of participants. "Waves" were defined as a set of participants that started on the same date (e.g., an entire high school or a spring introductory course at University of Calgary). Thus, for each participant, the total expected time of participation was 21 days, however, not all participants were submitting data over the same 21 days.

Participants were able to fill out a survey any time that CBDA occurred, so long as it did not interfere with the outlined situations mentioned above (e.g., during school hours). Upon entering the survey, participants were asked whether or not they were still in the same relationship as the day before. If participants were still in the same relationship, the survey continued to ask CBDA questions using "current" partner language (e.g., "in the past 24 hours, has your current partner…"). If the participants were not in the same relationship, they were asked to continue to respond to daily questions for the data collection period based on their ex-

partner (i.e., the partner they were in a romantic relationship with at the start of data collection) even if they started a relationship with a new partner. The rationale for this was to be able to study patterns of CBDA in the same relationship, should participants break up. Further, past research on traditional face-to-face dating aggression suggests that aggressive behaviour tends to increase when couples break up (e.g., Hannawa, Spitzberg, Wiering, & Teranishi, 2006), which may also be the case in CBDA. Participants were asked questions pertaining to their CBDA victimization experiences within the last 24 hours.

Upon conclusion of their participation, participants were thanked for their time and provided with a resource page at the end of each daily survey (see Appendix D). This page included a list of resources that participants could call immediately if any distress were to arise during and/or after completion of the online survey. Participants were told that the researcher was not a trained professional to treat any distress. As well, researcher contact information was provided in the event that participants had questions about the research, or if they needed more guidance and direction towards appropriate youth resources.

Measures

Demographics questionnaire. All participants were asked to complete a demographics questionnaire (see Appendix E). A series of questions were constructed in order to gather information about the participant, including school grade level, race/ethnicity, religious preference, parents' marital status, family structure, and sexual orientation. In addition to demographic information, participants were asked specific questions about dating relationships (e.g., age they were first in a romantic relationship) and communication technology use (e.g., type of social networking sites used the most with their romantic partner).

Cyber-based dating aggression. For each daily survey, participants were asked

questions pertaining to their Cyber Based Dating Aggression (CBDA) victimization experiences

within the last 24 hours (see Appendix E). The current study used an adapted measure of CBDA

based on Zweig et al's (2013) 16-item survey measuring what they termed "cyber-dating abuse."

These 16 items were examined and categorized by the researcher into five different types of

CBDA: emotional (e.g., purposefully trying to emotionally hurt ones partner), social (e.g.,

purposefully damaging a partners social status), privacy (e.g., purposefully over stepping

romantic relationship privacy boundaries), sexting (e.g., purposefully engaging in sexually

aggressive behaviours towards his or her partner through communication technology), and

control (e.g., purposefully trying to control, intimidate, and portray power over a partner). Each

action was deemed to be aggressive because the intent behind engaging in them was seemingly

harmful to his or her partner in some way (e.g., their partner pressuring them to engage in sexting

or sending nude pictures or sending threatening text messages to them). Participants were asked

to choose which type of aggression occurred. For instance, within the social type of CBDA,

participants were asked whether their partner tried to purposefully damage their social status

through communication technology (e.g., by posting embarrassing photos or other images of

them online; spreading rumors about them using a cell phone, e-mail, Facebook messenger, or by

posting on a social networking website, such as Facebook, Twitter, or Instagram). The rationale

for using descriptive question options (i.e., non-Likert scale) was so that adolescents could

respond about any CBDA behaviour they felt was best represented by the specific subtype,

yielding the opportunity to understand what adolescents viewed as an act of CBDA. Examples in

each category were given to help guide adolescents' responses according to the correct CBDA

subtype. Each of the five subtypes were presented in a "select your choice" format. For instance,

participants were asked "which type of cyber-aggression occurred?" whereby they then chose the category the incident fell under. If participants indicated any type of CBDA occurred, the survey then asked them a series of quantitative and qualitative questions pertaining to the CBDA event. Once completed, the participants were asked if any other type of cyber-aggression occurred. If it did not, the daily survey ended by asking about their overall relationship satisfaction. If the participant indicated that CBDA did not occur, they were still asked about their overall relationship satisfaction in order to be able to analyze whether relationship satisfaction differed between those who did and did not experience CBDA.

Quantitative questions.

Overall relationship satisfaction. All participants were asked to rate their overall relationship satisfaction once daily through the use of a 5-item Relationship Satisfaction Scale (RSS; Levesque, 1993; see Appendix E), regardless of whether CBDA had occurred on that day. These data were collected so that a comparison of participants' relationship satisfaction could be made between those who experienced CBDA versus those that did not experience CBDA. The RSS was different from the CBDA event-specific relationship satisfaction question (described in the next section below), as this latter single question was specific to the CBDA event experienced and was only asked if CBDA occurred (i.e., "please rate the overall effect you perceived *this incident* to have on your satisfaction in your romantic relationship," where 1 = not satisfied with relationship and 10 = extremely satisfied with relationship). Without the use of the RSS, if participants indicated CBDA did not occur, there would have been no data collected on relationship satisfaction to examine the difference between those who experienced and did not experience CBDA.

The RSS scale asked participants to report whether they agreed or disagreed with five different relationship satisfaction statements such as, "In general, I am satisfied with our relationship" and "Our relationship has met my best expectations," using a 5-point Likert scale (1 = strongly disagree; 5 = strongly agree). Participant scores on the five questions were summed and averaged; a score of 5 would equal high satisfaction and a score of 1 would equal low satisfaction. Internal reliability of the RSS is good to excellent in past studies ranging from .76 (Li, Chan, & Law, 2012) to .88 (Levesque, 1993).

CBDA-specific quantitative questions: Negative effect and relationship satisfaction. When participants indicated that a CBDA event occurred, they were asked to further respond to two additional quantitative questions specific to the CBDA event: the overall negative effect they perceived this event to have and how this specific event may have affected satisfaction in their romantic relationship.

Using a subtype-specific question to measure negative effect of the CBDA event (called the "subtype-specific negative effect" question for this study), participants were asked to rate on a sliding scale from 1 to 10 how negative the experience was for them (i.e., 1 = no negative effect; 10 = extreme negative effect; see Appendix E). Participants were also asked to rate their level of satisfaction in the relationship on a sliding scale from 1 to 10 following each CBDA event they experienced (i.e., 1 = not satisfied with relationship; 10 = extremely satisfied with relationship; see Appendix E). As previously noted, this sliding scale of relationship satisfaction is different from the once daily 5-point Likert scale of relationship satisfaction mentioned above (i.e., the RSS), as it was asked for every CBDA event and provided the measurement of whether relationship satisfaction changed based on each specific CBDA subtype. This latter sliding scale

on relationship satisfaction will be called "subtype-specific relationship satisfaction" to help distinguish the two measures.

Qualitative questions. If participants indicated that they experienced some type of CBDA within the past 24 hours, they were also asked qualitative questions about that specific CBDA event (see Appendix E). One question asked participants to "describe in a few sentences what the situation was (i.e., describe details of what occurred)" and the second asked, "how did you respond to the situation (e.g., told a friend, did something to get your mind off it, retaliated, or tried to get even, told a parent, ignored it)?" These qualitative questions were responded to by typing in text boxes and helped answer the proposed research question (e.g., "how do adolescents respond to being a victim of a CBDA event?"). It also allowed participants to indicate any positive (e.g., talking to their partner rationally) or negative (e.g., retaliation) responses to the CBDA event.

Ethical Considerations

An ethical consideration of the current study relates to the fact that because data were collected daily, there was potential for the researcher to observe participants' qualitative responses that communicated extreme forms of distress or emotional reaction (e.g., if a participant indicated they wanted to physically harm their partner in person). This would qualify under imminent danger with the Conjoint Faculties Research Ethics Board. However, data were not *viewed* daily as the researcher did not have the availability to review data this often. Instead, data were reviewed weekly. This was communicated to the participants before data collection.

Examination of Validity and Reliability

As with any research study, it is important to examine the validity and reliability of measures used and data collected. Examining these two psychometric factors within real-time

quantitative and qualitative data involves different processes compared to examining cross-sectional, solely quantitative data, as shown in the following sections.

Validity of ecological momentary assessment. There are many indications that internal validity is stronger in EMA than in retrospective, one-time questionnaires (Hektner et al., 2007). Zuzanek (1999) noted that the immediacy of responses reduces recall failure, and others have found that a large portion of participants do not change their daily activities when they are asked to continually report on them. For instance, Csikszentmihalyi and Larson (1987) found that 80% - 90% of participants reported that Ecological Sampling Method (ESM), a type of EMA, captured their week accurately. This was assessed by having participants review their weekly data and decide whether reports of their momentary situation and psychological state captured their week accurately or not. As well, college students were found to report a consistent level of drinking behaviours before, during, and after participating in an ESM study (Hufford, Shields, Shiffman, Paty, & Balabanis, 2002). Even intensely private activities like suicidal ideation (e.g., Palmier-Claus, et al., 2012) and having sexual intercourse (e.g., Sunner, Walls, Blood, Mehta, & Shrier, 2013) have been reported using EMA, indicating that participants likely do not refrain from engaging in or reporting these types of activities (Hektner et al., 2007). The literature noted above is encouraging given that CBDA represents highly sensitive experiences compared to more mundane everyday activities.

Internal validity. In terms of assessing the internal validity of CBDA experiences, only the individual participant can know whether his or her response is an accurate representation of how he or she feels at the time of data collection. The validity of internal states can be assessed by situational validity, whereby researchers examine whether adolescents' reports of their feelings make logical sense based on their reported experiences (Hektner et al., 2007). For

example, if a participant indicates that he or she feels happy after experiencing threatening text messages from his or her partner, this would be contrary to the expected response of feeling scared, nervous, or angry.

External validity. Hektner et al. (2007) suggest that external validity, or the extent to which inferences can be made from the sample to the larger population, is more evident in EMA than internal validity. Given that EMA is used in longitudinal studies, attrition rates, missing data, small sample sizes, and the potential difference in individuals who volunteer for EMA studies compared to those who do not (Csikszentmihalyi & Larson, 1987; Larson, Moneta, Richards, & Wilson, 2002; Mulligan, Schneider, & Wolfe, 2000) are threats to external validity. This is because the data becomes less representative of the larger, intended population (Hektner et al., 2007).

Reliability of ecological momentary assessment. Caution needs to be taken when analyzing the reliability of data collected using EMA. Examining reliability of measures requires the production of consistent responses (Hektner et al., 2007). EMA respondents, however, are *expected* to experience variation in factors such as affect, concentration, and behaviour from one time to the next. Addressing this limitation, Hektner et al. (2007) suggest that if responses are aggregated, individual participants are likely to show a pattern of responses that are consistent with his or her past or future responses. Thus, when examining split-half reliability, one set of aggregated responses (e.g., one half of a week) can be tested against another set of aggregated responses (e.g., one half of the second part of a week) to analyze if responses are relatively consistent.

Validity of qualitative data. In the current study, qualitative data was analyzed through a case-study approach. Berg (2001) indicates that when case studies are properly undertaken, the

results should not only fit the individual, but generally provide an understanding about similar individuals. Validity in case studies does not imply that an explanation for why one individual reacted to a CBDA incident explains why all individuals react that way; rather, it suggests an explanation for how *some* individuals react to CBDA (Berg, 2001). Qualitative validity in the context of a case study also means that the researcher checks for accuracy of the results by implementing certain procedures (Creswell, 2014). In the current study, these procedures include clarifying any biases that the primary researcher brings to the interpretation of the findings, which may be influenced by factors such as gender, culture, history, or background, among others. The primary researcher has significant experience studying and interpreting this type of behaviour (i.e., CBDA), a factor that contributes to the credibility of the interpretation of findings. Moreover, the primary researcher consulted with supervisors and colleagues to review qualitative conclusions, allowing outside opinions to be included (Creswell, 2014).

  Reliability of qualitative data. Qualitative reliability refers to the consistency or stability of procedures used during a qualitative analysis approach (Creswell, 2014). In other words, reliability asks if different researchers would come to the same findings and conclusions (Silverman, 2000). Much of the reliability, validity, and objectivity in case studies lies in the researcher's ability to explain the procedures used so that other researchers can replicate the study (Spencer, Ritchie, Lewis, & Dillon, 2003). Findings from case studies, however, are rarely high in reliability. As much as there may be some consistency between responses, the uniqueness of individuals also creates an expected difference between findings of different researchers (Spencer, et al., 2003).

Chapter Four: Results

This chapter will provide the results as per each research question. Prior to presenting these results, participant characteristics will be presented. As well, information on the examination of reliability and validity will be discussed as it relates to the current study. It is important to note that, despite the small sample size, each research question in the current study was still analyzed, with the exception of the second part of research question 2. The researcher acknowledges the limitation that a small n puts on the power of results, the ability to make concrete conclusions, and the ability to generalize these conclusions to a broader sample of adolescents.

Participant Characteristics

Information on participant demographics can be found in Table 1. More females ($n = 35$; 67.3%) than males ($n = 16$; 30.8%) participated in the study; one participant chose "other" for their gender. Participant ages ranged from 17 to 19 years old, with a mean age of 17.71 years ($SD = .76$). Most participants were in grade 12 ($n = 32$) and received A's and B's (40.4%) in school. The majority of participants were Caucasian/White (73.1%) and did not have a religious preference (49%). Sixty-nine percent of participants indicated their current living structure included living with their parent(s) and other sibling(s) and 61.5% indicated their family structure was a two-parent household with their biological parents. "Other" living arrangements included divorced or separated parents, being adopted, or living with their grandparents. The highest level of educational attainment for both mothers and fathers was a bachelor's degree (28.5% for mothers and 36.5% for fathers).

Table 1

Demographic Variables

Demographics	*n*	% or Mean (*M*)
Age	51	17.71 (*M*)
Grade/University Year	41	12.20 (*M*)
Grades		
Mostly 90-100% (A's)	1	1.9 (%)
Mostly 90-100% and 70-80% (A's-B's)	21	40.4 (%)
Mostly 70-80% (B's)	11	21.2 (%)
Mostly 70-80% and 50-60% (B's-C's)	15	28.8 (%)
Mostly 50-60% (C's)	2	3.8 (%)
Mostly 50-60% and under 50% (C's-D's)	2	3.8 (%)
Race		
Caucasian/White	38	73.1 (%)
South Asian	4	7.7 (%)
African American	2	3.8 (%)
Filipino	2	3.8 (%)
Latin American	2	3.8 (%)
Korean	1	1.9 (%)
Chinese	1	1.9 (%)
Aboriginal	1	1.9 (%)
Other	1	1.9 (%)
Arab	0	0 (%)
Japanese	0	0 (%)
South East Asian	0	0 (%)
West Asian	0	0 (%)

Religious Preference	*n*	% or Mean (*M*)
Catholic	8	15.7 (%)
Muslim	1	2.0 (%)
Protestant	1	2.0 (%)
Agnostic	3	5.9 (%)
Christian	5	9.8 (%)
Other	8	15.7 (%)
None	25	49.0 (%)
Current Living Arrangement		
With parent(s) and sibling(s)	36	69.2 (%)
With parent(s)	9	17.3 (%)
Other	7	13.5 (%)
Family Structure		
Two-parent household (bio parents)	32	61.5 (%)
Single-mother household	5	9.6 (%)
Two-parent household (step-family - children from one or both)	8	15.4 (%)
Single-father household	2	3.8 (%)
Two-parent household (blended children from one or both parents and new children)	1	1.9 (%)
Other	4	7.7 (%)
Mother's Highest Level of Education		
Doctorate degree	1	1.9 (%)
Master's degree	7	13.5 (%)
Bachelor's degree	15	28.8 (%)
Trade/technical/vocational training (e.g., SAIT, Bow Valley)	3	5.8 (%)
Some college credit, no degree	11	21.2 (%)
High school graduate, diploma or the equivalent (e.g., GED)	12	23.1 (%)

	n	**% or Mean (*M*)**
Some high school but did not graduate	2	3.8 (%)
Preschool to 8th grade	1	1.9 (%)
Father's Highest Level of Education		
Doctorate degree	1	1.9 (%)
Master's degree	9	17.3 (%)
Bachelor's degree	19	36.5 (%)
Trade/technical/vocational training (e.g., SAIT, Bow Valley)	8	15.4 (%)
Some college credit, no degree	5	9.6 (%)
High school graduate, diploma or the equivalent (e.g., GED)	7	13.5 (%)
Some high school but did not graduate	3	5.8 (%)
Preschool to 8th grade	0	0 (%)

Table 2 presents results on self-reported communication use. When asked to choose which type of communication methods teens used on a weekly basis (i.e., check more than one), texting was reported as the highest (96.2%), followed by Snapchat (76.9%), and Instagram (73.1%). When asked to choose one type of communication method participants indicated they used the most overall, Snapchat (44.2%) was the highest, followed by texting (32.7%). "Other" types of communication methods used the most overall were Discord, Skype, Steam, or WhatsApp. Discord is an all-in-one voice and text chat for individuals playing video games (Discord, n.d.). Skype is a video chat and voice call tool (Microsoft, 2019). Steam is a website for purchasing and playing video games and it includes community features such as friends lists, groups, and in-game voice and chat (Valve Corporation, 2019). WhatsApp is similar to text messaging, but also allows video chat, group messaging, and voice calls between users of different smartphone models (WhatsApp Inc., 2019).

Participants estimated that they spent most of their time per day on either YouTube

(141.98 minutes), Snapchat (137.61 minutes), or text messaging (13.82 minutes). The majority of

participants personally owned a laptop (86.5%) and smartphone (98.1%), and most families

owned a computer (76.9%), laptop (92.3%), smartphone (94.2%), and iPad or tablet (76.9%).

Eighty-one percent of participants spent most of their time on social media while at home.

Lastly, just over seven out of ten (71.2%) participants indicated their parents did not have rules

about using communication technology.

Table 2

Communication Technology Variables

	n	**% or Mean (*M*)**
Communication Tools used on a weekly basis		
Facebook	31	59.6 (%)
Twitter	4	7.7 (%)
Instagram	38	73.1 (%)
Snapchat	40	76.9 (%)
YouTube	19	36.5 (%)
Texting	50	96.2 (%)
Communication Tools used the most		
Facebook	4	7.7 (%)
Twitter	0	0 (%)
Instagram	2	3.8 (%)
Snapchat	23	44.2 (%)
YouTube	0	0 (%)
Texting	17	32.7 (%)
Other	6	11.5 (%)

Length of use of Communication Tools (minutes)	*n*	% or Mean (*M*)
Facebook	52	51.7 *(M)*
Instagram	52	90.87 *(M)*
Snapchat	51	137.61 *(M)*
YouTube	52	141.98 *(M)*
Texting	51	130.82 *(M)*
Technology Devices Owned (personal)		
Computer	11	21.2 (%)
Laptop	45	86.5 (%)
Smartphone	51	98.1 (%)
iPad or Tablet	15	28.8 (%)
iPod	12	23.1 (%)
Other	3	5.7 (%)
Technology Devices Owned (family)		
Computer	40	76.9 (%)
Laptop	48	92.3 (%)
Smartphone	49	94.2 (%)
iPad or Tablet	40	76.9 (%)
iPod	21	40.4 (%)
Other	5	9.5 (%)
Location social media is used the most		
School	33	63.5 (%)
Home	42	80.8 (%)
Friends	12	23.1 (%)
Everywhere	25	48.1 (%)

Parent Rules about Communication Technology	*n*	% or Mean (*M*)
My Parents have rules about how long I can use the computer, cellphone, internet, etc.	6	11.5 (%)
My parents have rules about what I can do on the computer, cellphone, internet, etc.	1	1.9 (%)
My parents usually know which websites I'm going to when I got on the internet.	14	26.9 (%)
I use a social networking website (e.g., Facebook, Instagram, Snapchat), that my parents do not know about	4	7.7 (%)
None of these	29	55.8 (%)
How often Participants Follow Parental Rules		
Often	6	11.5 (%)
Sometimes	5	9.6 (%)
Hardly Ever	2	3.8 (%)
I do not have any rules about using the computer	37	71.2 (%)

Table 3 presents participant responses to questions about previous or current dating relationships. The average number of previous partners that participants had was just under three (*M* = 2.72). The average age that participants first started dating someone was just under 15 years of age (*M* = 14.69). In their current dating relationship, participants indicated that they spent an average of *M* = 20.27 hours together per week. The length of relationship in days ranged from 0 days (i.e., the participant had just started dating their partner when they participated) to 1000 days with three individuals who indicated they were dating for more than 1000 days. Participants indicated that texting was the preferred form of communication with their dating partner (42.3%), followed by Snapchat (38.5%). "Other" responses included calling them on the phone or using Facetime, Discord, Facebook Messenger, Skype, or Steam.

Table 3

Dating Relationship Variables

	n	*% or Mean (M)*
Number of people previously dated	41	2.71 (*M*)
Age when first started dating	52	14.69 (*M*)
Hours spent with partner per week	52	20.27 (*M*)
Length of Relationship (in days)	51	243.25 (*M*)
Communication Tool used the most with partner		
Facebook	4	7.7 (%)
Twitter	0	0 (%)
Instagram	0	0 (%)
Snapchat	20	38.5 (%)
YouTube	0	0 (%)
Texting	22	42.3 (%)
Other	6	11.5 (%)

Validity

Internal validity. Based on the results of the participants who indicated that CBDA occurred in their romantic relationship over the three-week duration of the study, all participants rated the level of negative effects as low (i.e., between 1 and 3), and the majority rated either neutral relationship satisfaction (i.e., 5) or higher (i.e., 7 and 8). Only one participant indicated their satisfaction in the relationship was lower than 5 (i.e., 4) after experiencing an incident of CBDA (i.e., control). Taking these results into account, a response that looks illogical to the researcher may make perfect sense to the participant due to unknown external factors (Hektner et al., 2007). For example, Zweig et al. (2013) found that relationship quality was rated

significantly higher by those who experienced cyber dating abuse than those who did not. This was interpreted to have happened because qualities such as feeling loved and cared for, proud to be with their partner, and having a partner who is supportive of their activities and interests likely overshadowed the reported CBDA and thus did not affect relationships satisfaction. Relating this finding to the current assessment of internal validity, the researcher assessed participant ratings of CBDA events as logical and valid when considering external factors.

External validity. In the current study, where the intended population was teens in high school and early university (between the ages of 17 and 19), 22 participants completed the daily survey only once, and 30 participants completed the daily survey two or more times over the three-week data collection period. Thus, as with many real-time data collection studies, there is an abundance of missing data and a high attrition rate (i.e., some participants did the first survey and then stopped responding), leading to a small sample size and threatening external validity.

Reliability

Split-half reliability was completed using the Relationship Satisfaction Scale (RSS) on 18 random participants who completed four or more RSS surveys. These 18 participants reported that they did not experience CBDA. There were no participants who experienced CBDA and provided more than one RSS survey for which the results could be aggregated. Four or more surveys was the number chosen so that an equal number of surveys could be divided and compared. Results showed that there was significant stability in relationship satisfaction throughout the data collection period ($r = .94$). This stability was expected, as all 18 participants included in this analysis did not experience CBDA. In other words, it would be expected that their responses did not vary significantly (see Figure 1 below where each participant's mean

relationships satisfaction score for the first half of the data collection period is compared to the second half).
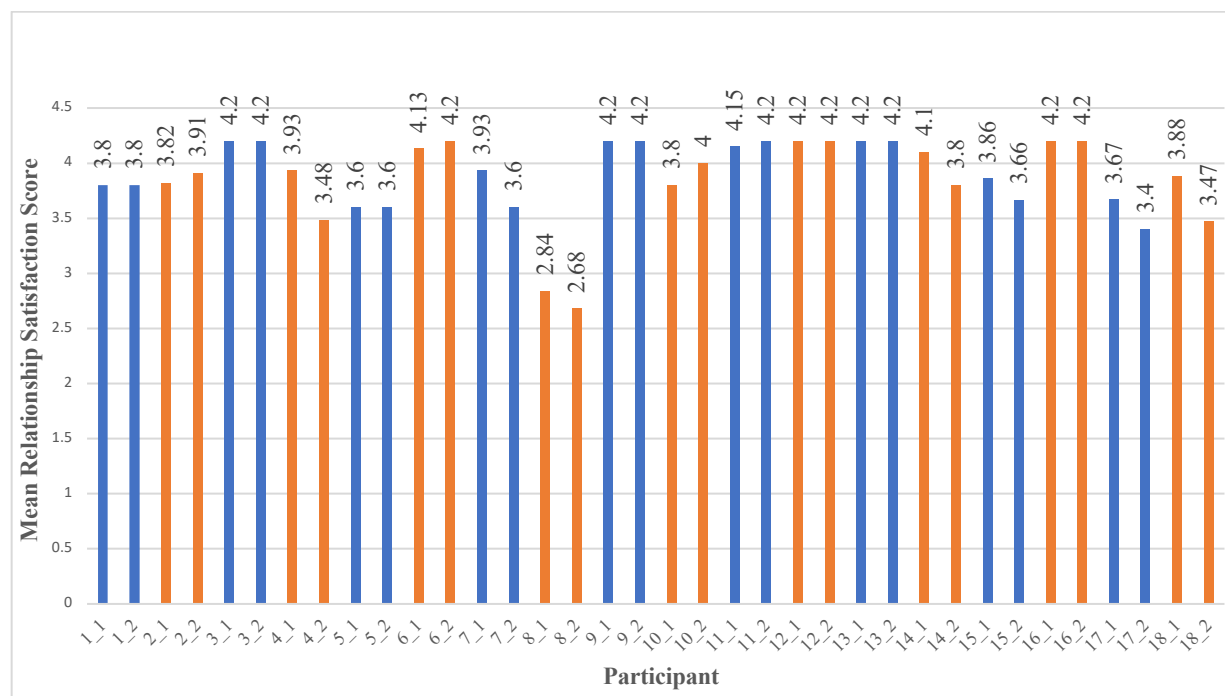
Figure 1. Split-half reliability of the relationship satisfaction scale. "_1" is aggregated data during the 1st half and "_2" is aggregated data during the 2nd half.

Research Question 1: How Prevalent is the Victimization of Cyber-Based Dating Aggression (CBDA) as Reported by a Sample of Adolescents within a 21-Day EMA Data Collection Period?

This research question asked how many CBDA events – both total and by subtype – were reported by participants within the 21-day data collection period. Frequencies were computed in terms of the number of participants who experienced CBDA and number of incidents each participant experienced. As well, frequencies for each subtype were calculated. Overall, five out of 52 participants (approximately 10%) indicated that some form of CBDA occurred. Two CBDA incidents were reported by one participant 11 days apart, while the remainder of the

reports of CBDA occurred once per participant and on the same day they completed the demographics questionnaire.

In terms of the prevalence of subtypes, three incidents of sexting were reported (e.g., asking for nude pictures), two incidents of a privacy breach (i.e., their partner taking a video of them and sending it to others without their permission and their partner going through their phone without permission), and one incident of control (i.e., forced to go to a party because their partner would not let them stay home). It was unclear if participants who responded only once had other incidents of CBDA and did not report them throughout the three-week period, or if they did not have other incidents of CBDA and so chose to not complete a daily survey because of this. The remaining 47 participants, including the 31 participants who responded 2 or more times, and the 18 participants who responded between 4 or all 21 days, did not report any incidents of CBDA.

Research Question 2: How is CBDA Related to Adolescent Romantic Relationship Satisfaction?

This research question asked: Does relationship satisfaction differ based on the type of CBDA experienced. To analyze this research question, the six incidents (not participants) of CBDA were analyzed via descriptive analysis. It is noted that Participant 1 is listed twice, as this participant reported two CBDA incidents. Results are presented in Table 4 below. Relationship satisfaction scores for each incident reported were gathered using the subtype-specific relationship satisfaction question. Results ranged from just below neutral (4) to 8 (10 being extremely satisfied in the relationship). Interestingly, after analyzing the subtype-specific negative effect question, all CBDA incidents experienced were rated as having little negative effect on participants (i.e., ranging from 1 to 3).

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Table 4

Cyber-Based Dating Aggression Incidents and Relationship Satisfaction Scores

Participant ID	CBDA Subtype Experienced	Overall Negative Effect	Relationship Satisfaction Score
1	Privacy	3	5
1	Control	2	4
2	Sexting	2	5
3	Sexting	2	8
4	Sexting	1	7
5	Privacy	2	8

Note. Relationship satisfaction ranged from 1 (not satisfied in the relationship) to 10 (extremely satisfied in the relationship). Overall negative effect ranged from 1 (no negative effect) to 10 (extreme negative effect).

The second part of this research question asked if those who experienced CBDA had higher or lower relationship satisfaction than those who did not experience CBDA. This research question was not analyzed statistically (i.e., by using an independent t-test) for the following reasons. First, given the small n, power analysis was very weak when comparing across only five participants (Cohen, 1977). Second, the comparison groups (CBDA versus no CBDA) were highly unequal (5 in CBDA group and 47 in the no CBDA group). Third, the independence of observations assumption of an independent t-test was violated, as participant 1 reported two events of CBDA. Aggregating data is recommended when running inferential analyses and p-values are going to be examined (Hektner, et al., 2007), however, this process does not remove the issue of unequal weighting between groups, as only one participant had two incidents of CBDA while the rest of the sample reported only one incident (Hektner et al., 2007). Lastly, the researcher understands that the low sample size and power greatly limits the generalizability of

findings and increases risk of Type II error (i.e., missing an effect in the population that genuinely exists; Field, 2013).

Non-parametric statistics (i.e., a Mann-Whitney analysis) were considered, however, the groups in a non-parametric analysis typically must all have the same variability (Frost, 2019), which was not the case between the CBDA and non CBDA group. Further, running a non-parametric test would take away from the power that exists when using a parametric test, which in the current study, would already be extremely limited because of the small n (Field, 2018).

Research Question 3: How Do Adolescents Respond to Being a Victim of a CBDA Event?

This research question asked how those who reported CBDA responded to the incident (e.g., with retaliation, or by telling a peer or parent). A case study approach was employed to describe these patterns within the qualitative data. This approach was selected because case studies can focus on an individual, group, or an entire community and may be utilized with a number of different data types (Hagan, 1993; Yin, 1994). For the current study, the specific variable of inquiry was CBDA and how those CBDA events were experienced and responded to by each individual. Each participant who reported CBDA was analyzed separately and then compared and interpreted in relation to one another.

Participant 1. Participant 1 was a 17-year-old, heterosexual Caucasian male in grade 12 at the time of participation. Participant 1 was the only subject who completed the daily survey more than once (i.e., 8 times total). He was also the only participant who indicated experiencing CBDA twice in his relationship over the participation period of 21 days. The first report of CBDA was categorized as the "privacy" subtype where he indicated that his partner "went through [his] phone without [his] consent." His response to this incident was: "I spoke to my partner about how I felt." He indicated he felt "as if my partner had a lack of trust in me."

The second report by Participant 1 of CBDA was categorized as "control," where he indicated he "wasn't feeling up to going to a party, and my partner thought it was because she had brought up how she had felt in the relationship. Would not let me stay home." Because Participant 1 classified this as the control subtype of CBDA, it is likely that this conversation and subsequent feelings of being forced to go to a party occurred over technology and was still included in the study. However, it is important to note that without Participant 1 indicating this specifically, it is hard to determine whether this situation was face-to-face or via technology. When asked how he responded to this situation, he indicated: "I had a few too many drinks at the party due to an attempt to cope. I don't remember much after that." Participant 1 indicated he felt "stressed out as I find parties to be stressful and I was pushed into this situation."

Participant 2. Participant 2 was a 17 year-old heterosexual, Caucasian female in grade 12 at the time of participation. Participant 2 indicated one instance of CBDA, which was qualified under "Sexting." Unfortunately, she did not describe the situation or her response to this type of aggression perpetrated by her partner.

Participant 3. Participant 3 was a 19 year-old heterosexual, Chinese female in her first year of university at the time of participation. Participant 3 indicated one instance of CBDA, which was categorized as "sexting." When asked to describe the situation, she wrote, "just asking for pictures, but stopped when I said no." When asked how she responded to the incident, she wrote, "talked about it with him, and explained my thoughts. and he explained himself. Told him it made me feel objectified. he respected my ideas."

Participant 4. Participant 4 was a 17 year-old heterosexual, Caucasian female in grade 12 at the time of participation. Participant 4 indicated one incidence of CBDA, which was categorized as "sexting." When asked to describe the situation, she wrote, "no situation he just

loves me and I love him." When asked to describe how she responded, she wrote, "I did nothing."

Participant 5. Participant 5 was a 17 year-old, heterosexual, Caucasian female in grade 12 at the time of participation. Participant 5 indicated one instance of CBDA, which she categorized as "privacy." She indicated that "he took a video i told him not to send and then he sent it. Also he went through my phone and pretended he was checking something else." When asked how she responded, she wrote, "I told him not to do it again."

Chapter 5: Discussion

The purpose of the present study was to explore Cyber-Based Dating Aggression (CBDA) in a sample of adolescents (age 17-19) in real-time (i.e., within the day it occurred). The prevalence of CBDA, how these incidents are related to romantic relationship satisfaction, and gaining an understanding of how teens describe and respond to CBDA incidents was explored using real-time methodology, or Ecological Momentary Assessment (EMA). To the researcher's knowledge, this is the first study to explore CBDA in real-time. This chapter will summarize the main findings of the current study and indicate how the results are informed by and interpreted with existing literature. Limitations of the study, clinical implications, and a discussion of future directions for research are also presented.

Prevalence of Cyber-Based Dating Aggression (Research Question 1)

Overall, five out of 52 participants reported some form of CBDA occurred (10%). There were three incidents of sexting (i.e., asking for nude pictures), two incidents of a privacy breach (i.e., their partner taking a video of them and sending it to others without their permission and their partner going through their phone without permission), and one incident of control (i.e., forced to go to a party because their partner would not let them stay home) reported. According to a review of the current literature, the present study is the first to use a real-time data collection methodology to analyze prevalence rates of CBDA in adolescence.

In terms of CBDA subtypes in the current study, sexting encompassed 50% of incidents (three reports) and the privacy and control subtypes occurred in 33% and 17% of the incidents reported (two reports of privacy and one report of control), respectively. This contrasts with recent retrospective studies examining subtypes of CBDA, where sexting, or sexual aggression, was not found to be the most reported type of CBDA teens engage in. For example, Reed et al.

(2017) found that victimization of the monitoring and control (52.8%) and relational/social (43.6%) subtypes were more prevalent than sexual aggression (32.6%). Similarly, Lenhart et al. (2015) found that the monitoring and control (26%) and invasion of privacy (18%) subtypes were more prevalent than sexual aggression (10%). However, in light of the small sample size in the current study, conclusions on prevalence are not able to be confidently made.

Differences were also found when comparing overall CBDA prevalence rates in the current study to past studies using retrospective surveys. Compared to previous studies that specifically analyze adolescents and aggression between romantic couples online and retrospectively (i.e., within the past year), the overall prevalence rate of 10% in the current study appears to be lower than those found in other retrospective studies. For example, the results correspond closely with the lower end of other literature reviews (Stonard et al., 2014) where victimization rates ranged from 12% to 56%. Stonard et al. (2014) attribute this wide prevalence range to differences in the way each study measures, collects, and reports on their collected data. An interesting comparison study is Smith and colleagues' (Smith et. al., 2018) who recently examined cyber-aggression retrospectively within teen romantic couples and found that over a third of teens (35.8%) were victims of CBDA; a prevalence rate higher than what the current study found. Overall, when comparing the 10% of CBDA experienced over three weeks in the current study to past studies examining CBDA retrospectively, prevalence rates are lower, however, this finding needs to be taken with extreme caution given the low sample size and lack of generalizability to the larger population.

As previously reviewed, the dating aggression literature (i.e., face-to-face dating aggression using non-adolescent samples) includes very few studies that used real-time data collection methods to examine prevalence rates. Sullivan et al. (2012) found that women

experienced intimate partner violence on 27% of days (out of 90 days total), a percentage somewhat higher than the current study. Of note, an eligibility requirement for participants in their study was that the women needed to have experienced physical victimization within the last 30 days by their current partner, which may have resulted in an inflated percentage compared to women who did not experience victimization within the last 30 days. Moore and colleagues (Moore et al., 2011) found similar lower prevalence rates as the current study when analyzing physical aggression (15%), but higher prevalence rates than the current study when analyzing psychological aggression (44%).

Overall, the prevalence rates of both CBDA in the current study and face-to-face aggression in past studies using EMA were generally lower when compared to prevalence rates of CBDA and face-to-face aggression when studied retrospectively. It is important to note, however, that these studies are examining different types of aggression (face-to-face) compared to CBDA. For example, one study (Sullivan et al., 2012) only looks at women as victims, and both studies report prevalence rates differently (i.e., prevalence of *people* who experienced aggression versus the number of *days* that aggression was experienced), making it difficult to compare to CBDA. As well, these results need to be interpreted with caution, as this is the first study to examine CBDA using EMA and there was a significantly low sample size. Further, it is difficult to decipher whether CBDA occurs less frequently than researchers thought, as the current study results suggest, or if methodological barriers compromised response rates, or if teens themselves were not able to recognize what CBDA is and what it is not and thus did not report CBDA. This latter point indicates that not only are more accurate ways of measuring CBDA needed, but so is a more consistent definition of CBDA and a better understanding of what teens perceive CBDA to be.

Relationship Between CBDA and Romantic Relationship Satisfaction (Research Question 2)

This research question asked: Do those who experience CBDA have higher or lower relationship satisfaction than those who do not experience CBDA? Descriptive results revealed that there was little to no negative consequence of CBDA on relationship satisfaction, with some participants still rating high satisfaction after experiencing a CBDA event. With the exception of an unpublished study that examined CBDA perpetration (Attewell & Schwartz, 2013), there is little existing literature that looks at CBDA and relationship satisfaction. Attewell and Schwartz' (2013) study found similar results as the current study in that those in current or past relationships indicated that CBDA did not affect their relationship satisfaction. Given these results, it may be that aggression experienced "behind a screen" (i.e., not face-to-face) has less of an effect on relationship satisfaction given that couples cannot see gestures, facial expressions, or hear tone of voice. However, literature examining relationship satisfaction and face-to-face dating aggression has showed varied results, with some studies showing dating aggression affects relationship satisfaction negatively (Cramer, 2003; Schnurr, Lohman, & Kaura, 2010) and other studies showing it does not (Capaldi & Crosby, 1997; Gray & Foshee, 1977).

It is likely that any influence CBDA has on relationship satisfaction depends the context of the situation and external qualities within the relationship. In the present study, CBDA did not appear to have a negative consequence on relationship satisfaction. Participants' responses to their relationship satisfaction, however, seemed to depend on the context of the situation. For example, participant 1, who experienced two subtypes of CBDA, one of them being the privacy type of CBDA (i.e., partner went through his phone without consent), rated the effect this had on his satisfaction in the relationship as neutral. Participant 5 rated her privacy incident (i.e., took

and sent a video of her and went through her phone without her consent) to have a much lesser affect on relationship satisfaction (i.e., score of 8). This finding is curious given that Participant 5 essentially had two incidents of privacy CBDA occur at the same time (sent a video of her and went through her phone).

Similar to Participant 5's responses, research conducted by Zweig et al. (2013) has found that relationship quality, as opposed to satisfaction, was rated significantly higher by those who experienced cyber dating abuse than those who did not. They measured relationship quality using 20 questions about positive qualities of their relationship, such as having a supportive partner. Given these findings, participants in the current study who experienced CBDA may have reported little to no effect on relationship satisfaction because they had other positive qualities buffering the potential negative effects of CBDA (e.g., feeling loved and cared for by their partner, feeling proud to be with their partner, and having a partner who is supportive of their activities and interests). Adding to Zweig et al.'s (2013) study, Giordano and colleagues (Giordano, Soto, Manning, & Longmore, 2010) suggested that, regardless of any negative dynamics in a relationship (i.e., dating aggression), relationships may still activate other important factors, such as intimacy and perceived importance, which makes it more difficult for an adolescent to view the incident as negative. Relating this to findings of the current study, qualities such as feeling loved and cared for, proud to be with their partner, or feelings of intimacy may have overshadowed the CBDA experienced and thus did not negatively affect relationship satisfaction (Zweig et al., 2013; Giordano et al., 2010).

Lastly, not only do external relationship factors likely affect participants' ratings of relationship satisfaction when CBDA is experienced, but participants' individual perception of the incident is also a contributing factor impacting whether CBDA affects satisfaction in the

relationship. Findings in the current study showed that all participants were similar in how they rated the overall negative effect of the CBDA incident. All participants rated the negative effect to be low (i.e., scores between 1 and 3). One of the participants who experienced sexting (Participant 4) seemed to interpret this type of aggression as an act of love (i.e., there was "no situation he just loves me and I love him"). Teens are at a developmental age where sexuality is explored (Connolly et al., 2014) and so it is not surprising that some teens may see sexting as a way of expressing love and affection (Connolly & Josephson, 2007) and thus rate the experience as having no influence on their relationship satisfaction. What is worrisome, however, is that little seems to be known about when and why sexting becomes aggression and further, research has shown that teens are unlikely to think of the consequences of sharing those pictures or words before doing so (Associated Press, 2009; Davidson, 2014; Samimi & Alderson, 2014).

It also may be the case that dating behaviours via technology that are not viewed as being intentionally harmful at the outset (e.g., his or her partner asking for nude pictures to innocently engage in sexual interchanges because their partner likes them) still cause harm to the recipient later on (e.g., the pictures are seen by a friend or leaked to others over social media). In other words, dating behaviours that are not intentionally harmful can still be causing harm. Wolfe and Temple (2018) indicate that no one causal explanation may describe all perpetrators' behaviour because of the large dissimilarity in what drives human behaviour; similarly, not all victims may perceive behaviours from their partner as aggression, even though they may not be healthy. This may challenge researchers to examine cyber-based dating *behaviours* and refrain from labelling them as "negative" or "aggression." The term *aggression* implies that the behaviour was intentionally harmful, when this may not be the case in all scenarios *or* may not be perceived to be the case. This does not, however, decrease the importance of how those behaviours may affect

a relationship or an individual person negatively, especially after repeated experiences, or later

on in the relationship (e.g., if they break up).

In summary, the current research showed that CBDA had no measurable negative

consequences on the five participants' relationship satisfaction when they were asked to respond

immediately following the CBDA incident. The results of examining relationship satisfaction in

real-time coincide with the very few other studies examining this relationship retrospectively,

showing that relationship quality or satisfaction is not affected negatively by dating aggression

(e.g., Zweig et al., 2013; Attewell & Schwartz, 2013; Gray & Foshee, 1977). Some participants

even rated their satisfaction highly after experiencing a CBDA event, which may be due to their

perception of the perpetration or positive external relationship qualities buffering the effect of the

CBDA event. Despite these preliminary results of the relationship between CBDA and

relationship satisfaction studied in real-time, more research using the EMA methodology is

needed to substantiate the current results, especially with a larger sample. Future research would

benefit from not only studying external factors of relationships to understand what may buffer

the effects on satisfaction after experiencing CBDA, but also teens' perception of why the event

did not affect their relationship satisfaction.

Adolescent Responses to Experiencing CBDA (Research Question 3)

This research question asked how victims responded to CBDA experiences perpetrated

by their romantic partner. Five individual case studies were completed for participants who

reported an incident of CBDA victimization in order to better understand their responses. Only

key findings are presented below. There were three overall types of responses participants

engaged in after experiencing CBDA: communicating with their partner about how they felt or

telling their partner to stop, using alcohol to cope, or perceiving the CBDA event to be non-substantial and thus did not respond in any way.

First, what is encouraging to find is that three out of the five participants spoke to their partners after the CBDA incident (i.e., told them not to do it again, told them how it made them feel, told them "no") instead of retaliating in a negative way, which is what some other studies looking at responses to CBDA have found (Kellerman et al., 2013; Reed et al., 2017). In fact, Connolly and McIsaac (2009) suggest that a positive negotiation strategy used during conflict is compromise (e.g., expressing personal feelings and coming to an agreement). These types of responses are encouraged and taught in intervention programs, such as The Fourth R, whereby competencies such as resilience, coping skills, and positive interpersonal functioning are enhanced (Wolfe, Crooks, Huges, & Jaffe, 2013). For example, one of the skills taught in this intervention program is to understand the difference between assertive, passive, and aggressive communication styles. In the assertive style of responding, teens learn how to tell another person what they want clearly and with confidence.

Second, Participant 1 responded that he "had a few too many drinks due to an attempt to cope" with the control subtype of CBDA experienced (e.g., he felt pushed into going to a party that he did not want to attend, but his partner would not let him stay home). Participant 1's attempt to cope using alcohol has been a well-established consequence *and* risk factor in experiencing face-to-face teen dating aggression (e.g., Eaton, Davis, Barrios, Brener, & Noonan, 2007; Ybarra, Espelage, & Mitchell, 2007; Parker, Johnson, Debman, Milam, & Bradshaw, 2017; Thompson & Morrison, 2013; Vezina & Hebert, 2007). In the CBDA literature, Van Ouytsel and colleagues (Van Ouytsel, Ponnet, & Walgrave, 2017) found that using alcohol or drugs prior to having sex was significantly correlated with cyber dating abuse perpetration.

Further, Moore and colleagues (Moore et al., 2011) utilized EMA to study Intimate Partner Violence and found that the odds of perpetrating psychological and physical aggression were 2.19 and 3.64 times greater on days when participants drank versus days they did not. Thus, Participant 1's response is consistent with previous research in that alcohol use may be both a consequence of experiencing and a risk factor to perpetrating CBDA. Future research should follow up with participants who indicate they experience CBDA to interview them and gather narrative data on the precursors and consequences of their CBDA experiences.

Lastly, Participant 4's responses indicated that the CBDA incident was not a substantial or considerable aggressive experience. For instance, Participant 4 indicated there was "no situation, he just loves me and I love him," and when asked how she responded, she indicated "she did nothing." Past research has found that adolescents' behaviours are heavily influenced by the media (Miedzian, 1995; Snethen & Van Pyumbroeck, 2008) and that youth are especially vulnerable to entertainment portrayals of sex, violence, and aggressive behaviour (Snethen & Van Pyumbroeck, 2008; Wekerle & Wolfe, 1999). Research has also found that sexting behaviour (e.g., being asked for nude pictures) may be an attempt at introducing sex into the relationship or, if they have had sexual relations prior, entice the individual to more openly express themselves sexually (Temple, Paul, & van den Berg, 2012). In the present case, it may be that increased exposure to media or past sexual experiences decreased Participant 4's sensitivity to this type of behaviour (Snethen & Pyumbroeck, 2008).

It may also be that Participant 4 does not truly understand the gravity or implications of sexting (e.g., that information stored and transferred between devices is never private). Samimi and Alderson (2014) found that both males and females who were in a romantic relationship had more positive attitudes toward sexting than those who were single (e.g., reporting that "sexting is

fun" and "sexting is a regular part of romantic relationships nowadays"), suggesting that youth may be engaging in sexting because of immediate pleasure and before thinking about consequences of sharing explicit photos. Interestingly, during adolescence, reward circuits (e.g., nucleus accumbens) are still developing, which is implicated in seeking pleasure and reward, as well as the prefrontal cortex, which is implicated in assessing and controlling behaviour (Romer, 2010). Participant 4's responses to sexting may have been influenced by her interpretation that she is *first* viewing her partners behaviour as an act of love, and seeking to satisfy her reward system, without assessing the situation (i.e., the implications of his and her actions). This is concerning, given that past research has found a double standard in the repercussions or consequences that follow sexting, particularly in the how it is normalized and acceptable behaviour by males (Ricciardelli & Adorjan, 2018). One study (Associated Press, 2009) found that both males and females are unlikely to worry about or fully understand the consequences of their online actions, as only 51% among 1247 adolescents indicated they understood that what they posted online could have consequences. In this case, Participant 4 may not fully understand the consequences of sharing sexually explicit pictures or comments and that the information shared may never be safe (Madden et al., 2013).

In summary, interpreting the individual responses to CBDA is dependent on both individual and social variables. First, talking with partners about how they felt after the aggression, or communicating clearly in their responses (e.g., saying "no") represent positive responses to CBDA. Implications of this finding speak to the importance of promoting positive communication and healthy relationships. As such, results may encourage professionals and researchers to focus on examining and promoting the positive responses to CBDA and what makes a romantic relationship healthy, as too often, there is a focus on a "what's wrong" versus

"what's working" or strength-based philosophy to intervention. Second, based on the current findings, alcohol may not only be a consequence of experiencing face-to-face aggression, but also a consequence when teens experience CBDA (e.g., Eaton, et al., 2007; Parker, Johnson, Debman, Milam, & Bradshaw, 2017). Further research is needed in order to better understand what the antecedents and consequences are of CBDA. Knowing this information may better help interventionists understand specific CBDA factors that lead to drug and alcohol use (e.g., feeling controlled) as a response to CBDA. Lastly, there were instances where participants seemed to be unclear about the seriousness of the CBDA incident or the consequences of engaging in them, such as sexting and sending sexual pictures to their partner. Thus, what may need to occur before educating teens on CBDA, is to gather a better understanding of what teens believe CBDA is in order to target education and fill in the gaps for teens. This speaks to the importance of utilizing focus groups and/or interviews as a next step in CBDA research (Adorjan & Ricciardelli, 2019).

Given the low sample size, the above results provide informative but very limited insight into how some teens may respond to CBDA. Although research like the present study would ideally explain what and why individuals do what they do and to be able to predict what behaviours they will engage in in the future, the present study simply explores and exposes how technology complicates interpersonal romantic relationships for teenagers. Given the diverse nature and unpredictability of teenagers, adolescence becomes one of the most difficult stages of life to describe (Csikszentmihalyi & Larson, 1984). What is clear is that each individual CBDA experience is likely slightly different than another individual's experience and that more research is needed to uncover any potential patterns of responses to CBDA.

Limitations

Despite the advantages of using an Ecological Momentary Assessment (EMA) methodology, studying teen behaviour in real-time does not go without limitations. Mihalyi Csikszentmihalyi and Reed Larson, two gurus in studying teens using a method of EMA called Experience Sampling Method (ESM), indicate that of all stages of life, teenage years are the most difficult to describe because of their unpredictability (i.e., wandering attention, features of self-centeredness, yet capable of impressive altruism, etc.). This unpredictability makes researching adolescents and accurately describing and representing them in the larger population especially difficult (Csikszentmihalyi & Larson, 1984). Particular limitations of the current study are presented below.

Recruitment. One of the challenges of the current study, and in most research studying individuals in real-time, was with recruitment. Most principals and teachers in the high school settings welcomed the opportunity for research in their schools. However, understandably, the aspects of taking time away from student learning to present the study make it challenging for the acceptance of data collection in schools and classrooms. As such, not only is it important to keep the burden as low as possible for adolescents, but also for the organizations that researchers are recruiting from. Although time taken away from class to set up the survey was relatively short (10-15 minutes for university and high school students), setting up a time with teachers that did not impact tests, exams, or the interruption of instruction or planned activities proved to be a barrier in the high school settings when receiving permission to collect data.

Selection Bias. As well, selection bias is a criticism of real-time data collection (Mulligan, et al., 2000). In other words, there is concern that those who agree to participate in the study differ from those who do not agree to participate (Zuzanek, 1999). In the current study,

many of the participants were female, received good grades in school, and came from intact family homes where parents received a good education (bachelor degrees). It is common to find selection bias, even in studies with larger sample sizes (e.g., 1221 students followed over a 5 year period in the United States; Mulligan et al., 2000), where there are aspects of the sample that are less representative of the larger population, such as gender. Many analyses have found that females are usually overrepresented in EMA studies (Csikzentmihalyi & Larson, 1987; Larson et al., 2002; Mulligan, et al., 2000; Waite, Claffey, & Hillbrand, 1998), which was the case with the current study as well. It can also be argued that those who volunteer for EMA studies are more organized, diligent, conscientious, and psychologically healthy due to the requirements on behalf of the volunteer participant (e.g., remembering to participate, willing to help the researcher, etc.; Mulligan et al., 2000; Larson et al, 2002). Because those in the current study were primarily female, received mostly A's and B's and lived with their biological parents who received a good education, these characteristics need to be considered when interpreting results and applying it to the larger population.

Compliance. Compliance and potential for reactivity are two common issues in studying individuals in real-time. The current study was based on event-contingent sampling (teens reported on events as they occurred). Truly understanding compliance in event-sampling techniques is difficult given that the researcher cannot be sure whether the event occurred or not when low or no events are reported (Santangelo et al., 2013). This was a limitation in the current study, as it cannot be known whether the low incident rate was due to non-compliance or no CBDA events. However, it is believed that one of the reasons for the low incident rate was likely due to non-compliance, as participants were asked to complete a survey at least daily, even when no CBDA occurred. Getting high compliance rates are a balance of the frequency, length, and

timing of data collection, as well as the length of the data collection period itself (Santangelo et al., 2013). Although the length of the survey was short (~5-7 minutes to complete), the timing of assessments were somewhat flexible (i.e., to be completed any time within the day, but outside high school hours), and adolescents were reminded at least weekly to participate, the frequency at which adolescents were to respond (daily) and the length of the assessment period (21 days) may have negatively influenced compliance rates, leading to a small n. The small sample size significantly affects the power of results and limits generalizability to the larger population.

Hufford and Shiffman (2003) discuss many ways that compliance can be increased in real-time data collection. A number of these methods were integrated into the current data collection strategy, such as compensation, subject training on when to respond and how, and creating a sense of accountability by letting them know the utility of participants' given data in studying CBDA. However, future research in this area should focus on increasing programmed reminders to participate (i.e., within the technology used to collect data; Hufford & Shields, 2002) and building in a type of tracking system where they receive real-time feedback regarding their compliance (Simmons Nides, Rand, Wise, & Tashkin, 2000). As well, Hektner et al. (2007) discuss the importance of creating a research alliance with participants. For example, students often feel a sense of importance when an adult is interested in hearing what they have to say as well as the fact that what they say could make things "better" in the area of research for teens in the future. To do this, Hektner et al. (2007) suggest researchers are present in the school during the data collection period, making sure they are visible in the hallways and during transition to classes. They discuss that the sight of the researcher gives the impression that they are genuinely interested in the school environment and research. Unfortunately, being visible for 21 days in each school was not feasible in the current study. However, in future research, it may be helpful

to identify particular classroom teachers that are interested in the purpose of the study and who would like to build from the study using discussion that is interwoven in the curriculum (e.g., to have a discussion with their students about healthy and non-healthy relationships). As another option to build an alliance or presence in the schools that data is being collected from, focus groups or interviews could be held with select individuals, allowing the presence of a researcher, hearing the valuable remarks from teens, and creating an alliance and a relationship between researcher and participant.

Reactivity. Reactivity is when participants change the way they are responding because of their participation in the research. For instance, participants may indicate CBDA does not occur to try to portray a good, stable romantic relationship, or indicate that CBDA occurs in order to conform with the expectations of the research (Nelson, 1977). Reactivity is always a concern in research, especially real-time data collection. However, past research shows that studies have not found much evidence of reactivity on Experience Sampling Method reports (e.g., Cruise, Broderick, Porter, Kaell, & Stone, 1996; Ebner-Priemer, Bohus, & Kuo, 2007; Cszikszentmahalyi & Larson, 1987). In fact, Hufford et al. (2002) found that individuals did not refrain from engaging in or reporting on activities that were embarrassing or intensely private, such as suicide attempts. Nonetheless, this may be a limitation, and most definitely a consideration to take into account when interpreting the current study results.

Analysis Issues. Researching individuals in real-time has the potential to offer an abundance of rich quantitative and qualitative data (Hektner, Schmidt, & Csikszentmihalyi 2007). However, a limitation lies within the fact that instances of missing data are a common issue due to a wide range of reasons, such as compliance, burden, or the number of assessments or surveys required. This often leads to large discrepancies between the number of surveys per

participant (i.e., they are often unequal). The problem of missing data leads to a challenging sample size, which then leads to challenges with analyses, as was the case in the current study, and limited generalizability to the larger population. However, studies with small samples in real-time data collection are not necessarily uncommon, and still provide individualized information (e.g., 8 participants in Csikszentmihalyi & Larson, 1984; 14 participants in Sumaya & Darling, 2018; 19 participants in Garcia et al., 2014).

Bias. It is important to be cognizant of any bias that the primary researcher may hold. Despite conducting research and reading literature in the area of CBDA for many years, this field of inquiry is still in its infancy. Further, the current study is the first attempt at using EMA to study CBDA. Thus, the researcher recognizes that although the current study is a necessary first step in research, the results do not represent finality.

Implications

Clinical implications. The results of the current study denote possible implications for professionals working with youth, however more research with a larger sample size and increased compliance rates are needed to substantiate these implications and conclusions. Interestingly, none of the participants indicated they told their parents about any CBDA incident. They may have told their parents without indicating this in their written responses, however, research shows this is not always how teens respond and that majority of teens do not tell their parents about their cyber (Livingstone, 2009) and face-to-face (Love & Richards, 2013) dating aggression experiences. This bodes the question: where should professionals target their interventions? Should participants be encouraged to speak to their parents about their dating aggression experiences when this continues to not occur? Past research has found that teens often confide in their peers when experiencing dating aggression, which becomes concerning when

their peers are equally as inexperienced in dealing with dating aggression (Callahan, Tolman, & Saunders, 2003). Professionals may have more success in curbing the rate of CBDA if efforts are focused on building capacity in peers. The Fourth R is an evidence-based healthy relationships program that can be provided in small groups or integrated into the school curriculum and teaches relationship skills in the same way students are taught reading, writing, and math (Wolfe et al., 2013). Still, parental knowledge of the goings on in teen relationships should not be overlooked. The Fourth R integrates a parental component by, for example, having students identify communication barriers with parents in general and how to overcome them. Thus, clinicians and other professionals working with teens would likely benefit from talking about how to overcome barriers of communicating not only with parents (e.g., the age gap between parents), but any adult they feel comfortable with, and continue to discuss the importance of doing so.

Another implication relates to the possible external factors underlying why participants rated the overall negative effect of CBDA events as low and having no major observed consequence on relationship satisfaction. It could be that one or even two time incidents are not very emotionally impactful, especially when the participant speaks to their partner about how they feel, has other positive qualities in the relationship that buffer the effects of a CBDA incident, or plainly that participants find these experiences to be more irritating than serious. Thus, clinicians and professionals may benefit from only asking what positive qualities the teen relationship has that serve as resilient factors against psychological stress, but to guide teens towards other outside buffers and protective factors, such as positive qualities in themselves, their life, and their support systems. Future research would benefit from studying positive

qualities of a relationship that may protect that relationship as a whole as well as the participant from experiencing CBDA, or from experiencing negative emotionality from CBDA.

Lastly, although the prevalence rate in the current study was low, researchers know that whether the frequency is high or low, dating aggression happens and it happens in teen relationships. Thus, studying prevalence rates may be less important than what educators, parents, clinicians, and teens should do proactively and reactively in these situations. As a clinician working in schools, anecdotal reports of technology mis-use occur frequently. The difference of reports from the current study versus those that occur in schools are that the latter may more frequently occur between individuals who are not in a romantic relationship. For instance, reports from one mother whose teen was in high school indicated that her son received multiple sexual pictures of different girls all at once who he was not in a relationship with. Another report from a teacher of a girl in grade 6 included that her boyfriend's friend found nude pictures she sent and was "blackmailed" by the friend to send more nude pictures or else he would post them online. From these anecdotal reports, it seems as though the sexual type of CBDA can occur in and outside of romantic relationships. Emotional (e.g., name calling), social (e.g., spreading rumours), privacy (e.g., hacking into a partner's Facebook account) and control (e.g., sending threatening text messages) also likely occur in and outside of romantic relationships. These reports reinforce the point that intervention programs on healthy romantic relationships in general (i.e., not just when in an exclusive romantic relationship) need to be part of teens' curriculum that are delivered at a universal (i.e., whole school) level.

Interestingly, universal interventions for those that may or may not experience dating aggression are moving towards promoting positive based influences in teen relationships using the very same technology used to perpetrate or experience CBDA. For example, a website called

"thatsnotcool.com" is using an app called the "Respect Effect" to engage teens in daily challenges that show respect towards others. It aims to help young individuals practice healthy relationship skills by completing daily challenges with their significant other, friends, or family members. Users can earn points, view others' challenges, and share completed challenges with friends (ThatsNotCool.com, 2016). In this respect, positive relationship behaviour is rewarded, viewed, and shared online with the hope that this positivity is spread, rather than spreading the negative relationship behaviours. There are also games, statistics, and ways to speak out and help others who are experiencing aggression in their relationships on the website, making it a resourceful tool for educators, clinicians, parents, and teens.

Research implications and future directions. There were many key points of learning that can be taken from the current study and passed along to future researchers. First, it is difficult to conduct research in real-time without proper compensation for participants. Sullivan and colleagues (Sullivan et al., 2011) noted the importance of providing remuneration as frequently as possible for participants who provide daily data. Although this was attempted in the present study through participants receiving daily ballots that went towards a weekly draw, it may have been more advantageous to inspire participation by providing more significant compensation (e.g., $2.00 per survey for each participant). Second, having a research assistant would have been important for monitoring the data coming in and to follow up with participants when they stopped responding. Although participants in the current study were given weekly reminders, a research assistant would have more time to follow up daily and remind participants about participation. Sullivan and colleagues (Sullivan et al., 2011) found that when research assistants followed up with women who did not respond after three days, nonresponses were most often due to forgetfulness, and this follow-up procedure increased participation rates.

Third, as previously mentioned, Hektner et al. (2007) indicated the importance of a research alliance between the researcher and teen participants that may increase compliance and response rates. Perhaps having a research assistant would allow the primary researcher more time to be present and develop relationships in schools.

Additional details related to the process and procedures included in the current study are worthy of reflection. In order to comply with reasonable suggestions from the ethics comittee, students were asked not to respond to the survey during school hours. However, results from previous studies that have used the Experience Sampling Method (ESM) with an adolescent sample showed that non-response rates were actually higher on school nights and on weekends, demonstrating that school time might represent the best hours to gather responses from teens (Mulligan et al., 2000). Additionally, given the high attrition rate noted in the current study, it is highly recommend that researchers planning to use EMA to collect data include a short feasibility survey at the end of data collection. For example, at the conclusion of their study, Sullivan et al. (2011) asked their participants about perceived safety of participants, ease of participation, level of difficulty in sharing their experiences openly and honestly, opinions on the duration of data collection, and barriers to participation, producing invaluable details for improved procedures in real-time data collection.

Finally, researchers now have a multitude of technological data collection methods from which to choose. Mobile phones have replaced the need for electronic pagers given that individuals can be contacted in many ways through a single device (e.g., text, email, phone call). Mobile applications ("apps"), which are software applications that are accessible by smart phone, tablet, or personal computer (Prentice & Dobson, 2014), serve as a promising platform for data collection, especially for daily data collection. Many apps allow for "push notifications," which

are controlled by the app developer and may resemble signaling from pagers, prompting participants to respond. With the advent of these technological advances, it is recommended that CBDA data be collected using the same accessible technology that teens use every day (i.e., through mobile apps), providing increased ease and usability for teens, and perhaps increased compliance and response rates.

In future projects, when methodological issues such as compliance and sample size are better addressed, an area for future research within CBDA would be to continue analyzing independent and in-depth qualitative experiences of CBDA in teens. What often came to mind while reading through the qualitative data was the utility of focus groups or individual private interviews with teens. Focus groups would allow for group interaction, as teens ask questions, communicate together, and comment on one another's experiences (Kitzinger, 1995). It might still be recommended that individual interviews also be employed to allow teens to discuss more private experiences of CBDA, as they may have experiences they may not discuss in the context of a focus group, especially those with peers.

Given that there were some participants who did not perceive the CBDA event they experienced to be negative, it is believed that the most useful aspect of focus groups or interviews would be to learn, from a teen's perspective, what types of dating behaviours are occurring online, what do teens perceive as negative or aggressive dating behaviours online, and why or why not. Questions should be open-ended to allow for explanation, such as, "how might one communicate with their partner over social media negatively?" and/or include examples of CBDA and ask what teens think about the example (e.g., would they qualify it as aggression, do they think it would impact a romantic relationship positively or negatively, and why or why not). Although reports in interviews would still be retrospective, knowing this is an imperative first

step to continuing research in this area, as researchers are asking about cyber-aggressive behaviours that do not always align with how an adolescent experiences or perceives those behaviours. With this in mind, touching base with individuals face-to-face and more than once throughout the data collection period via focus groups or interviews may not only increase participant buy-in and individual response rate, but deliver useful data to clarify the definition of CBDA in the eyes of teens.

Conclusion

The present study explored the presence of CBDA within adolescent romantic relationships as teens interacted daily with their romantic partner through technology. It is difficult to decipher whether CBDA occurs more or less frequently than that found in previous research when compared to prevalence rates using retrospective surveys given the small sample size. Similarly, it is also difficult to decipher whether methodological barriers compromised response rates or if teens themselves were not able to recognize what CBDA is and what it is not and thus did not report CBDA, affecting prevalence rates. For the very small number of participants who did report experiencing CBDA, these experiences, no matter the subtype, appeared to have had little to no influence on teens' satisfaction in their relationship. Qualitative comments on the behavioural reactions of the five individual participants who experienced CBDA were unremarkable; most communicated with their partner positively about how they felt or told them to stop when a CBDA incident occurred. Still, there were findings that one teen in particular used substance abuse to cope and another may not have understood the gravity or consequences of the incident that occurred.

The results of the current study need to be interpreted with caution and with the understanding that more research is needed to substantiate any conclusions or implications,

especially with a larger sample size. The current study findings are preliminary, but nonetheless, will support future work examining teens' experiences of CBDA, specifically in the knowledge acquired and passed on to future researchers who are thinking of using EMA to study CBDA as well as where the preliminary results may take researchers in the next steps to studying CBDA.

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Research Study on Cyber-Based Behaviour in Adolescent Dating Relationships

Dear Parents,
The purpose of this letter is to inform you of a study being conducted with teens within Rocky View Schools. The details of the study are outlined below. Please note that if you want more details about something mentioned here, or **if you do not want your child to participate in this study, please contact the researchers:**

Mrs. Valerie D. Willan (403) 560 6290 – vdattewe@ucalgary.ca
or
Dr. Kelly Dean Schwartz (403) 220 3669 – kdschwar@ucalgary.ca

Please take the time to read this newsletter and understand any accompanying information.

The study will investigate how teenagers (age 17 and above) use technology – both positively and negatively – in their dating relationships (e.g., logging into their partners Facebook account without permission, sending a rude text message to his or her partner). If your child is in a romantic relationship at the time of data collection, they are eligible to participate in the study.

This study is not part of your child's curriculum. **Participation, non-participation, or withdrawal will have no impact whatsoever on your child's attendance or continuing relationship with [School Board]. Should your child choose to participate, they can withdraw at any time.** Exploration into this growing area of study will build a foundation for future research to come. It will increase awareness and understanding of this understudied topic and aide in the development of educational and prevention programs relevant to healthy romantic relationships for adolescents.

The following provides you with details of the study, the type of information that will be collected for the purposes of the study, and the ways in which this information will be used:

What Will My Child Be Asked To Do?
Data will be collected from your child daily through a survey created with SimpleSurvey. SimpleSurvey is a website used to create online surveys, forms, questionnaires, polls and other data collection applications. It is designed, developed, hosted and supported entirely in Canada. Their servers reside in highly-secure data centers that meet strict corporate and government regulations for hosted services.
Your child will be asked to visit the survey link on their own personal mobile phone to complete the survey daily. Data plans are not needed, as your child can complete surveys offline and data is sent to the examiner once they have connected to a free Wi-Fi connection. Your child's geographic location will not be tracked. Prior to participation, your child will be asked to read an assent form on the day of data collection. It will be clearly stated in the assent forms that their participation is completely voluntary and that they are able to withdraw from the study at any time without penalty. If your child chooses to participate after reading the assent form, they will be lead to the demographics questionnaire and daily survey.

The demographics questionnaire asks about such information as their age, gender, and romantic relationship experience. Your child will then be asked to complete a short survey entry daily or whenever they experience cyber-aggression within their relationship. Thus, there is potential for your child to complete multiple survey entries a day. Students will be asked <u>not</u> to complete the survey during school hours to eliminate the chance of your child completing surveys at inappropriate times. They will also be strongly discouraged to complete surveys at inappropriate times outside of school hours (e.g., when they are driving, or at times when parental rules are in place, such as at the dinner table). The daily survey takes approximately 3-5 minutes to complete. Each *day* your child completes a survey, they will earn 1 ballot to be put into a prize draw. At the end week, email addresses will be drawn for gift cards. Email addresses are used only for contacting winners and are kept completely separate from your child's data he or she provides on the daily survey, keeping their information confidential and anonymous. The risks associated with participation are minimal and similar to those associated with many e-mail programs, such as Hotmail© and social utilities spaces, such as Facebook© and Twitter©.

At the end of the 1-month data collection period, the primary researcher will debrief all student participants and explain the purpose of the study as well as how the information collected will be used. During this time, your child will receive an Explanation of Study form with a list of resources in the Calgary, Alberta area if any distress were to arise during and/or after completion of the online survey. Your child will also be able to access these resources through the app during the entire data collection period should they feel distressed at any time.

The information collected will be used by the primary researcher as part of her dissertation thesis requirement, and for the generation of reports, research publications, or presentations. All information collected will remain <u>confidential</u>. That is, all survey responses and any identifiable information, such as the school your child currently attends and his/her grade, will not be revealed and your child shall remain anonymous. Furthermore, in order to protect the confidentiality of your child, you will not be permitted to see any of your child's survey responses. If at any time you or your child chooses to exercise his or her right to withdrawal from the study, your child will be asked if he or she wants to withdrawal all previous data they have submitted, or just withdrawal from any further participation.

What Type of Personal Information Will Be Collected?
Information regarding your child's age, grade, gender, ethnicity, religious preference, sexual orientation, parental education, and dating relationship questions will be collected for the purpose of the study. Again, any identifying information, such as your child's current grade or parental income, will not be displayed and your child shall remain anonymous when utilized in the generation of reports, research publications, or presentations.

Are there Risks or Benefits if My Child Participates?
Your child could experience some mild distress when answering questions about past or present negative cyber-based communication they have engaged in with a romantic partner. However, they are not obliged to answer any questions that they do not want to answer. In addition, they will be given a list of community resources at the end of each survey if any distress were to arise during or after participating in the study. Your child will not directly benefit from participating in

this study. Information obtained from this study will add to our general knowledge about cyber-based dating aggression. Such information could be used to help develop prevention and treatment programs aimed at promoting healthy romantic relationships. In addition, some people report that they learn something about themselves in the process.

What Happens to the Information My Child Provides?
Information gained from this study will be removed of all identifiable characteristics and remain anonymous. The results will be retained by the primary researcher and will be kept in an encrypted file only accessible to the primary researcher and her supervisor. The data generated from this study will be used by the primary researcher in the creation of her dissertation thesis, research publications, and presentations. Furthermore, after a period of seven years, all data collected by the primary researcher will be destroyed. A copy of the final research report will be made available to school(s)/school districts.

Should you have any questions or concerns or **if you do not want your child to participate in this study, please contact the researchers:**

Primary Researcher: *Mrs. Valerie D. Willan (403) 560 6290 – vdattewe@ucalgary.ca*
Supervisor: *Dr. Kelly Dean Schwartz (403) 220 3669 – kdschwar@ucalgary.ca*

Appendix B: Participant Assent Form

Name of Researcher, Faculty, Department, Telephone, Email:
Miss Valerie D. Willan | Faculty of Education | Educational Studies in Psychology |
403.560.6290 | vdattewe@ucalgary.ca

Supervisor:
Dr. Kelly Dean Schwartz |Faculty of Education | Educational Studies in Psychology | 403 220
3669 | kdschwar@ucalgary.ca

Title of Project:
Examining Adolescent Cyber-Based Dating Aggression in Real-time

This form is only part of the process of informed assent. Informed assent is when a minor (e.g., someone under the age of 18) agrees to participate in a research study. If you would like more details about something mentioned here, or information not included here, you should feel free to ask. Please take the time to read this carefully and to understand any accompanying information. The University of Calgary Conjoint Faculties Research Ethics Board and [School Board] has approved this research study.

Purpose of the Study:
The present study will investigate how teenagers use different forms of communication technology (e.g., Facebook, texting) both positively and negatively in their current dating relationships by collecting this data in real-time (i.e., within the day it occurs). Looking into this growing area of study will increase the awareness and understanding of this understudied topic and will help to develop educational and prevention programs for teenagers.

What Will I Be Asked To Do?
You will be asked to read this assent form. By clicking "Yes" below, this indicates that you are agreeing to participate in the 3 week long daily study. By clicking "No" below, this indicates that you do not want to participate. Your participation in this study is completely voluntary and you are free to stop participating at any time without penalty. If at any time you decide that you do not want to participate in the study, email the primary researcher. You will be asked if you would like all of the data that you have provided up to that point to be taken out of the study or if you want to stop participating and keep the data you have previously provided in the study. If you choose for your data to be taken out of the study, you will be asked for your 4-digit code (last 4 digits of your phone number) used at the beginning of each survey in order to find and remove the data. If you chose to provide assent, you will be asked to complete a demographics questionnaire, which asks about such information as your age, gender, and romantic relationship experience. You will then be asked to complete a short survey entry daily to describe any experience of cyber-aggression within your relationship that day. The information is collected through through SimpleSurvey on your own personal mobile phone through a web link. SimpleSurvey is a website used to create online surveys, forms, questionnaires, polls and other data collection applications. It is designed, developed, hosted and supported entirely in Canada. Their servers reside in highly-secure data centers that meet strict corporate and government

regulations for hosted services. Data plans are not necessarily needed, as you may complete surveys offline and data will be sent to the examiner once you have connected to a free Wi-Fi connection.

There is potential for you to complete multiple survey entries a day if multiple cyber-aggression occurs in one day. If no cyber-aggression occurs between you and your partner during the day, you will still be asked to complete 1 survey entry to indicate that this behaviour did not occur. It is also strongly discouraged to complete surveys at inappropriate times. both inside and outside of school hours (e.g., during class, when you are driving, or at times when parental rules are in place, such as at the dinner table).

The daily survey takes approximately 3-5 minutes to complete. Each day you complete a survey, you will earn 1 ballot to be put into a prize draw by providing your email address. Email addresses are used only for contacting winners and are kept completely separate from your data provided on the daily survey, keeping your information confidential and anonymous. At the end of each week, names will be drawn for gift cards. The risks associated with participation in the study are minimal and similar to those associated with many e-mail programs, such as Hotmail© and social utilities spaces, such as Facebook© and Twitter©.

The information collected will be used by the primary researcher as part of her dissertation thesis requirement, and for the generation of reports, research publications, or presentations. All information collected will remain <u>confidential</u>. That is, all survey responses and any identifiable information, such as your age or grade, will not be displayed and your identity shall remain anonymous.

What Type of Personal Information Will Be Collected?
Information about your age, grade, ethnicity, relationship, and type of communication devices you use will be collected for the purpose of this study. The last 4 digits of your phone number is also asked at the beginning of each daily survey so that the primary researcher can confidentially and autonomously combine your responses each day. Email addresses are used only for contacting winners and are kept completely separate from your data provided on the daily survey, keeping your information confidential and anonymous. Any information that may reveal your identity, such as your age, or current grade, will never be displayed and you will remain anonymous. Furthermore, your parents, guardians, and/or teachers will not be able to see any of your survey responses. However, please note that absolute confidentiality cannot be guaranteed in public setting as others around you may recognize your participation in this study, if not your actual contributions.

Are there Risks or Benefits if I Participate?
You may experience some mild distress when answering questions about current or past negative cyber-based communication in a relationship. However, you do not have to answer any questions that you do not feel comfortable answering. In addition, you will be given a list of community resources at the end of each survey entry that you may contact if you experience any distress during or after participation. You will not directly benefit from participating in this study. Information gathered from this study will add to the public's general knowledge about cyber-based dating aggression. Such information could be used to develop specific programs that help

teens learn about healthy romantic relationships. In addition, some people report that they learn something about themselves in the process.

What Happens to the Information I Provide?
The information you provide will be removed of all identifiable characteristics and remain anonymous. The primary researcher will keep the results on a locked and encripted computer, which will only be accessible to herself and her supervisor. The information collected from this study will be used in the creation of the primary research's doctoral dissertation thesis, research publication, and presentations. Furthermore, after a period of seven years, all data collected by the primary researcher will be destroyed.

Clicking Yes below indicates that you:
1) understand to your satisfaction the information provided to you about your participation in this research project,
2) agree to participate as a research subject, and
3) understand that the results generated from this study will be used for a dissertation thesis.

In no way does this waive your legal rights, nor release the investigators, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw from this research project at any time. If you would like to withdraw from the study, please contact one of the researchers below, who will then ask you for your consent to use your previous data provided, or if you would like all previous data withdrawn from the study. If you would like your previous data deleted from the study, you will be asked for your 4 digit code in order to find and remove your data. You should feel free to ask for clarification or new information throughout your participation.

Please click "No" if you do not want to participate.

If you would like a copy of this form, please ask the primary researcher.

Questions/Concerns:
If you have any further questions or want clarification regarding this research and/or your participation, please contact:

Primary Researcher
Miss Valerie D. Willan
Educational Studies in Psychology – Faculty of Education
(403) 560 6290 – vdattewe@ucalgary.ca

Or

Supervisor
Dr. Kelly Dean Schwartz

Educational Studies in Psychology – Faculty of Education
(403) 220 3669 – kdschwar@ucalgary.ca

If you have any concerns about the way you've been treated as a participant, please contact the Research Ethics Analyst, Research Services Office, University of Calgary at (403) 220-4283/210-9863; email cfreb@ucalgary.ca.

Please keep this page for your own personal records.

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A copy of this assent form has been given to you to keep for your records and reference. The investigator also has kept a copy of the assent form.

Appendix C: Consent for University of Calgary Participants

Name of Researcher, Faculty, Department, Telephone, Email:
Miss Valerie D. Willan | Faculty of Education | Educational Studies in Psychology |
403.560.6290 | vdattewe@ucalgary.ca

Supervisor:
Dr. Kelly Dean Schwartz |Faculty of Education | Educational Studies in Psychology | 403 220
3669 | kdschwar@ucalgary.ca

Title of Project:
Examining Adolescent Cyber-Based Dating Aggression in Real-time

This form is only part of the process of informed consent. Informed consent is when someone
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Purpose of the Study:
The present study will investigate how teenagers use different forms of communication
technology (e.g., Facebook, texting) both positively and negatively in their current dating
relationships by collecting this data in real-time (i.e., within the day it occurs). Looking into this
growing area of study will increase the awareness and understanding of this understudied topic
and will help to develop educational and prevention programs for teenagers.

What Will I Be Asked To Do?
You will be asked to read this assent form. By clicking "Yes" below, this indicates that you are
agreeing to participate in the 3 week long daily study. By clicking "No" below, this indicates that
you do not want to participate. Your participation in this study is completely voluntary and you
are free to stop participating at any time without penalty. If at any time you decide that you do
not want to participate in the study, email the primary researcher. You will be asked if you would
like all of the data that you have provided up to that point to be <u>taken out</u> of the study or if you
want to stop participating and <u>keep</u> the data you have previously provided in the study. If you
choose for your data to be taken out of the study, you will be asked for your 4-digit code (last 4
digits of your phone number) used at the beginning of each survey in order to find and remove
the data. If you chose to provide assent, you will be asked to complete a demographics
questionnaire, which asks about such information as your age, gender, and romantic relationship
experience. You will then be asked to complete a short survey entry daily to describe any
experience of cyber-aggression within your relationship that day. The information is collected
through through SimpleSurvey on your own personal mobile phone through a web link.
SimpleSurvey is a website used to create online surveys, forms, questionnaires, polls and other
data collection applications. It is designed, developed, hosted and supported entirely in Canada.
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surveys offline and data will be sent to the examiner once you have connected to a free Wi-Fi connection.

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Are there Risks or Benefits if I Participate?
You may experience some mild distress when answering questions about current or past negative cyber-based communication in a relationship. However, you do not have to answer any questions that you do not feel comfortable answering. In addition, you will be given a list of community resources at the end of each survey entry that you may contact if you experience any distress during or after participation. You will not directly benefit from participating in this study. Information gathered from this study will add to the public's general knowledge about cyber-based dating aggression. Such information could be used to develop specific programs that help teens learn about healthy romantic relationships. In addition, some people report that they learn

something about themselves in the process.

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Clicking Yes below indicates that you:
1) understand to your satisfaction the information provided to you about your participation in this research project,
2) agree to participate as a research subject, and
3) understand that the results generated from this study will be used for a dissertation thesis.

In no way does this waive your legal rights, nor release the investigators, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw from this research project at any time. If you would like to withdraw from the study, please contact one of the researchers below, who will then ask you for your consent to use your previous data provided, or if you would like all previous data withdrawn from the study. If you would like your previous data deleted from the study, you will be asked for your 4 digit code in order to find and remove your data. You should feel free to ask for clarification or new information throughout your participation.

Please click "No" if you do not want to participate.

If you would like a copy of this form, please ask the primary researcher.

Questions/Concerns:
If you have any further questions or want clarification regarding this research and/or your participation, please contact:

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A copy of this assent form has been given to you to keep for your records and reference. The investigator also has kept a copy of the assent form.

Appendix D: Resource Page

If after participating in this study you feel like you need to talk to someone about any aggression you might be experiencing in your dating relationship, please inform the researcher, your parent(s) or guardians, or a counsellor at your school and/or agency. There are also resources below with professionals who can help you if you feel threatened or scared in your dating relationship.

If you have any questions or concerns regarding this research, please contact Valerie Willan at vdattewe@ucalgary.ca or Dr. Kelly Dean Schwartz at kdschwar@ucalgary.ca. If you feel any negative emotions related to participation in this study, please contact someone from one of the following resources that are attached, or tell Valerie Willan or Dr. Kelly Dean Schwartz so they can direct you to an appropriate resource.

Youth Information

Sometimes when youth have questions or problems they may not know who to talk to or where to get help. We have included a list of services that are available to youth in your area. If you, a friend, or a family member have questions, would like someone to talk to, or need help with a problem, one of these resources may be able to help.

- **School based personnel, guidance counsellor, and/or teachers**

- **Distress Centre**
   (403) 266-1605

- **Kids Help Phone**
   1-800-668-6868

- **Teen Central**
   www.teencentral.net

Appendix E: Questionnaires

Demographics:

INSTRUCTIONS: Please answer the following questions honestly by typing your answer on the blank or choosing <u>ONE</u> answer for each question.

General Questions:
1. How old are you? _____ years old

2. What grade are you in? _____

3. What is your gender? _____

4. What is your sexual orientation?
a. _____ Heterosexual
b. _____ Gay/Lesbian
c. _____ Bisexual
d. _____ Other (*Please specify:* _____)

5. What is your race or ethnic background? (*Check all that apply*).
a. _____ African American   _____ Aboriginal
b. _____ Arab   _____ Caucasian/White
c. _____ Chinese   _____ Filipino
d. _____ Japanese   _____ Korean
e. _____ Latin American
f. _____ South Asian (e.g., East Indian, Pakistani, Sri Lankan, etc.)
g. _____ Southeast Asian (e.g., Cambodian, Indonesia, Laotian, Vietnamese, etc.)
h. _____ West Asian (e.g., Afghan, Iranian, etc.)
i. _____ Other _____

6. Were your parents born in Canada?
a. Father   Yes   No   If no, specify country of origin: _____
b. Mother   Yes   No   If no, specify country of origin: _____

7. What is your religious preference?
a. _____ Catholic
b. _____ Jewish
c. _____ Protestant (e.g., Methodist, Presbyterian, Lutheran)
d. _____ Muslim
e. _____ Buddhist
f. _____ Hindu
g. _____ No religious preference
h. _____ Other (*Please specify:* _____)

8. What is your current living arrangement? I live…
a. With my parent(s)
b. With my parent(s) and siblings

c.   Other (please specify) _____

9.   What is your family structure?
a.   Two-parent household (biological parents)
b.   Two-parent household (step-family – children from one or both parents)
c.   Two-parent household (adoptive)
d.   Two-parent household (blended – children from one or both parents and new children)
e.   Two-parent household (same-sex parents)
f.   Single-mother household
g.   Single-father household
h.   Other (please specify)

10.   What is your mother's highest level of education?
a.   No schooling completed
b.   Preschool to 8th grade
c.   Some high school but did not graduate
d.   High school graduate, diploma, or GED.
e.   Some college credit, no degree
f.   Trade/technical/vocational training (e.g., SAIT)
g.   Bachelor's degree
h.   Master's degree
i.   Doctorate degree

11.   What is your father's highest level of education?
a.   No schooling completed
b.   Preschool to 8th grade
c.   Some high school but did not graduate
d.   High school graduate, diploma or the equivalent (for example: GED)
e.   Some college credit, no degree
f.   Trade/technical/vocational training (e.g., SAIT, Bow Valley)
g.   Bachelor's degree
h.   Master's degree
i.   Doctorate degree

12.   What grades do you usually get? (CIRCLE ONE ANSWER ONLY).
a.   Mostly 90-100% (A's)
b.   Mostly 90-100% and 70-80% (A's-B's)
c.   Mostly 70-80% (B's)
d.   Mostly 70-80% and 50-60% (B's-C's)
e.   Mostly 50-60% (C's)
f.   Mostly 50-60% and under 50% (C's-D's)
g.   Mostly under 50% (D's)
h.   No Answer
i.   Don't know

Questions about Dating:

13.　　Have you ever dated anyone before your current relationship?
a.　　　_____Yes
b.　　　_____ No

14.　　(If Yes) About how many different people have you dated?
a.　　　_____ person/different people

15.　　How old were you when you first started dating someone?
a.　　　_____ years old

16.　　How many hours per week do you spend with your partner?
a.　　　_____ None at all
b.　　　_____ 1-2 hours per week
c.　　　_____ 3-4 hours per week
d.　　　_____ 5-6 hours per week
e.　　　_____ 7 or more hours per week

17.　　About how long have you been dating **your current partner**?
a.　　　_____ weeks OR _____ months OR _____ years

18.　　Are you dating anyone else besides **Partner X**?
a.　　　_____ No
b.　　　_____ Yes

Questions about social media usage:
19.　　Please check which type of communication tool(s) you currently use on a weekly basis:
a.　　Facebook
b.　　Twitter
c.　　Instagram
d.　　Snapchat
e.　　Youtube
f.　　Texting
g.　　Other: Please Specify _____
h.　　I don't use/subscribe to any social media

20.　　Please check which type of communication tool you generally use the **most**:
a.　　Facebook
b.　　Twitter
c.　　Instagram
d.　　Snapchat
e.　　Youtube
f.　　Texting
g.　　Other: Please Specify _____
h.　　I don't use/subscribe to any social media

21. About how many **minutes or hours** do you use each of the following communication tools **per day**?:
a. Facebook: _____ please check whether this is in ☐ minutes or ☐ hours.
b. Instagram: _____ please check whether this is in ☐ minutes or ☐ hours.
c. Snapchat: _____ please check whether this is in ☐ minutes or ☐ hours.
d. Youtube: _____ please check whether this is in ☐ minutes or ☐ hours.
e. Texting: _____ please check whether this is in ☐ minutes or ☐ hours.

22. Please check which type of communication tool you generally use the most to talk **with your romantic partner**:
a. Facebook
b. Twitter
c. Instagram
d. Snapchat
e. Youtube
f. Texting
g. Other: Please Specify _____

23. How many technological devices do **you** own? (check all that apply)
a. Computer
b. Laptop
c. Smartphone or cell phone
d. iPad or Tablet
e. iPod
f. Other (please specify)

24. How many technological devices does your **family** as a whole own? (check all that apply)
a. Computer
b. Laptop
c. Smartphone or cell phone
d. iPad or Tablet
e. iPod
f. Other (please specify)

25. Where do you use social media apps or websites (e.g., Facebook, Instagram, etc.) the most? Check all that apply Check all that apply
a. At school
b. At home
c. At a friends
d. Everywhere
e. Other (please specify)

26. Which of the following is true for you? My parents…
a. Have rules about *how long* I can use technology.
b. Have rules about *what* I can do on technology.

c.   Usually know which websites I'm using.
d.   Do not know about my technology use.
e.   None of these.

27.   How often do you follow the rules about using your computer, cellphone, the Internet, etc.?
a.   Often
b.   Sometimes
c.   Hardly ever
d.   Never
e.   I do not have any rules about using the computer

Quantitative CBDA Questions:

[Emotional] My partner emotionally hurt me through communication technology.
Possible examples include:
- Your partner writing nasty things about you on their media page or on your media page, such as on Facebook, Twitter, or Instagram
- Your partner using information from your social networking site to harass you or put you down.

Social [Relational] My partner tried to damage my social status through communication technology.
Possible examples include:
- Your partner posting embarrassing photos or other images of you online
- Your partner spreading rumors about you using a text, e-mail, Facebook messenger, or by posting on a social networking website, such as Facebook, Twitter, or Instagram.

Sexting [Sexual] My partner engaged in sexually aggressive behaviour towards me through communication technology. Possible examples include:
- Sent a sexual or naked photos of himself/herself that he/she knew you did not want
- Threatened you if you did not send a sexual or naked photo of yourself to him/her
- Pressured you to send a sexual or naked photo of yourself
- Sent you text messages, e-mails, Instant Messages through Facebook, etc., to have sex or engage in sexual acts with you when he/she knew you did not want to).

Control [Domineering/Threatening] My partner engaged in domineering or threatening behaviour towards me through communication technology.
Possible examples include:
- Your partner sending threatening text messages to you
- Your partner sending you text messages or instant messages through a social networking website (e.g., Facebook) that made you feel scared
- You partner making you feel afraid when you did not respond to their text, Facebook message, or comment on a social networking page
- Your partner threatening to harm you physically using a text message, Facebook message, or comment on a social networking page.

Privacy [Intrusion] My partner over stepped his or her boundaries through communication technology.
Possible examples include:
- Your partner taking a video of you and sent it to his/her friends without your permission
- Your partner going through your cell phone
- Your partner using your social networking account (e.g., Facebook, Instagram, Twitter) without permission
- Your partner creating a profile page (e.g., on Facebook, Twitter, or Instagram] about you knowing it would upset you
- Your partner sending you so many messages (e.g., texts, e-mails, Instant Messages on Facebook Messenger] and it made you feel unsafe.

Overall Negative Effect: Please rate the overall negative effect you perceived this incidence to have where 1=no negative effect and 10=extreme negative effect.

Relationship Satisfaction per Subtype: Please rate the overall effect you perceived this incidence to have on your satisfaction in your romantic relationship where 1=not satisfied with relationship and 10=extremely satisfied with relationship.

Likert Scale – Overall Relationship Satisfaction Questions:
Likert Scale = 6 point scale from strongly disagree to strongly agree.
1. In general, I am satisfied with our relationship.
2. Compared to other people's relationships, ours is pretty good.
3. I often wish I hadn't gotten into this relationship.
4. Our relationship has met my best expectations.
5. Our relationship is just about the best relationship I could hope to have with anybody.

Qualitative CBDA Question:
1. Please describe in a few sentences what the situation was (i.e., describe details of what occurred).
2. How did you respond to the situation? (e.g., told a friend, did something else to take your mind off of it, retaliated or tried to get even, told a parent, ignored it, etc.).