DIGITAL DATING ABUSE AND ADOLESCENT MENTAL HEALTH:
A MIXED METHODS STUDY

by

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ABSTRACT

Background

Early evidence indicates that adolescents’ intersecting identities are an important consideration for both the type of abuse they may experience as well as the frequency and severity of depressive symptoms as an indicator of mental health. Therefore, this explanatory mixed methods dissertation research study sought to understand the relationship between adolescent digital dating abuse (DDA) and depressive symptoms, examining differences by sex and controlling for physical & sexual teen dating violence (TDV).

Methods

To be eligible, participants in both phases had to report a recent experience of TDV. The quantitative phase, a secondary data analysis of the myPlan Teen Health Study (THS) (PI: Glass, 1R01CE002979-01), measured DDA using study-specific items and depressive symptoms using the PROMIS pediatric scale. Both t-tests and regression helped to inform differences between males (n=101) and females (n=391), as well as to explore sex as a moderator between DDA and depressive symptoms. The qualitative phase used remote, semi-structured interviews and a timeline activity among a sample separate of n=20 teens 15-17 years-old.

Results

Depressive symptoms among this sample were higher than the national average. Both controlling/monitoring and sexual DDA were associated with depressive symptoms, even after controlling for physical/sexual TDV. Females had a higher mean frequency of depressive symptoms than males, as well as more prevalent and frequent experiences of sexual DDA. The relationship between sexual DDA and depressive symptoms was significant among females in all models. There was no relationship between males’ experiences of either form of DDA and depressive symptoms. Qualitative findings argued against solely relying on mean frequency of DDA to predict depressive symptoms and suggested that what makes teens vulnerable to DDA ranges across all socioecological levels.

Conclusion

Digital dating abuse is commonly experienced among teens in abusive dating relationships and disproportionately impacts the health and wellbeing of cisgender female youth in particular, at least in part due to their vulnerability to sexual DDA. Efforts to understand or prevent this issue need to carefully
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consider the intersecting identities (such as gender identity, sex assigned at birth, or racial identity) that teens are actively exploring and developing during this life stage.

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Dedication

To the two strongest women I have ever known, Donna and Sidney Sue Neal.
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Introduction

Epidemiological trends in adolescent mental health have worsened over the past decade (Gladstone et al., 2021; Gotlib et al., 2020; Kann et al., 2018; Mojtabai et al., 2016). In the national 2017 Youth Risk Behavior Survey (YRBSS), 31.5% of high school students surveyed reported experiencing persistent feelings of sadness or hopelessness, the highest prevalence reported by this biennial national survey since its inception in 2007 (Kann et al., 2018; Mojtabai et al., 2016). In addition, Mojtabai and colleagues (2016) cross-analyzed nine years of data from the National Surveys on Drug Use and Health, identifying a 37% increase in odds of adolescents reporting major depressive episodes between 2005 and 2014 (Mojtabai et al., 2016). In COVID-19 specific research, multiple studies across the US during the pandemic further demonstrated a general increase in depressive symptoms among adolescents, particularly among those who identify as female (Gladstone et al., 2021; Gotlib et al., 2020; Hawes et al., 2021). While not comprehensive statistics, these numbers underscore a population-level trend that requires strategic nursing and public health response.

The rapid, widespread reliance on digital technology to communicate pre- and post-pandemic has only helped to solidify the centrality of technology in everyday life (Bonsaksen et al., 2021; Choi & Choung, 2021; Sanz-Labrador et al., 2021). So how do we support the current and future generations of youth whose predominant form of social interaction or media exposure is phone-based or online? How do teens handle online conflict? How does online conflict impact adolescent mental health and wellbeing, particularly if it escalates or becomes abusive? Over a quarter of adolescents in a large study (Zweig et al., 2014) of 3,745 middle and high school students the United States (US) reported digital dating abuse (DDA) in their current or most recent dating relationships and nearly half (47.2%) reported psychological abuse, one third physical (29.9%), and 13% sexual violence. More comprehensive definitions will be provided later in this chapter, however DDA is broadly understood as the repeated abuse, harm, or aggression by one person against a current or former partner through the use of digital technology (Al-Alosi, 2017). Smaller studies, such as one by Reed and colleagues (2017) of a convenience sample of n=703 high school students at a large suburban Midwestern high school in the US, have found over 50% of their sample reporting digital monitoring behaviors (e.g. pressured to share location or private account information by dating partners), with 32.2% reporting digital sexual coercion (e.g. to send a sexual/naked
photo or messages) and 46.3% digital direct aggression (e.g. threats or hurtful messages/posts by partners) (Caridade et al., 2019; Reed, 2015; Reed et al., 2017). Both males and females in the Reed et al. study (2017) reported similar rates of both victimization and perpetration of these digital dating abuse experiences, with the exception of digital sexual coercion experienced disproportionately by females (Reed et al., 2017). Overall, these harmful digital experiences were shown to contribute to emotional distress (13-80% of females, 9-47% of males) and/or a wide range of behavioral responses such as escalating the conflict, asking for help, or seeking revenge (Reed et al., 2017).

Understanding the relationship between adolescent online/digital experiences and their mental health and wellbeing strengthens the ability of nurse researchers to develop, implement, and evaluate resources for violence and suicide prevention (Caridade et al., 2019; Hein & Scharer, 2015; Reed, 2015). Thus, the purpose of this mixed methods dissertation research was to understand adolescent experiences of digital dating abuse and the association of these experiences with adolescent depressive symptoms and if the relationship was moderated by sex. Using an explanatory mixed methods approach, this study explored both testable associations with mental health symptoms and qualitative accounts of adolescents with lived experiences of DDA.

Background and Rationale

There are several focal points of this dissertation research, namely adolescent mental health, sex and gender differences, adolescent or teen dating violence (TDV), and digital dating abuse (DDA). Chapter One provides a review of research on mental health as it relates to nursing and public health, gender, adolescent mental health and relationships, and a socio-ecological model to explore the risk and protective factors associated with adolescent dating violence and digital dating abuse. At the end of chapter one, a brief introduction to the dissertation research is provided. Chapter Two then builds on the first chapter by providing an in-depth review of female-to-male partner violence (FMPV) research to better strengthen current and future scientific approaches to recruiting and measuring violence experienced by those in mixed gender relationships who do not identify as a woman or girl. This chapter is formatted as a manuscript for submission to a peer-reviewed, scientific journal. Chapter Three provides an extensive discussion on the research design, sample, methods, and analysis for this dissertation research study. The third chapter will also include an overview of the operational definitions for each component
measured and explored. *Chapter Four* consists of two manuscripts formatted for submission to a peer-reviewed, scientific journals. The first manuscript presents the findings from the quantitative portion of this study, and the second manuscript presents the mixed methods findings. *Chapter Five* then reviews key findings, revisits what was learned in terms of the conceptual framework for this dissertation research and discusses implications & recommendations for future public health nursing research and practice.

**Mental Health**

*Relevance to Nursing & Public Health.* In nursing research and practice, which prioritizes the lived experiences of the whole person and their family, social network, and environment, mental health is viewed as a critical component to primary, secondary, and tertiary prevention efforts around individual health and wellbeing. Promoting individual mental health has been a central focus of nursing theoretical and clinical development since the inception of the profession (Hein & Scharer, 2015; Shives, 2008). As early as the 1950s, following the National Mental Health Act of 1946 that arose in response to the post-World War II mental health needs of the general population, clinical nurse specialists became some of the first advanced practice nurses and health professionals to provide interpersonal mental health care, education, and support to communities and individuals (Eaton & Fallin, 2019). Even before this federal endorsement, nursing pioneers such as Dorothea Dix wrote explicitly on the importance of prioritizing and improving the standards of care for the mentally ill (Gorman & Anwar, 2014; Hein & Scharer, 2015). Over time, nurses have operated within inpatient, outpatient, community, policy, and international settings to promote the mental health and wellbeing of individuals and communities (Herdman & Kamitsuru, 2017; Shives, 2008; Thome et al., 2014). While separate from a psychiatric diagnosis made by physicians, the nursing process includes systematically organizing thinking around how a patient’s condition or symptoms, such a poor mental health status, can inform and be integrated into a nursing diagnosis and care plan (Eaton et al., 2012; Thome et al., 2014). This includes the clinical nursing judgement of how an individual’s symptoms of anxiety and depression, for instance, may be addressed using a systematic process of physical or verbal assessment and consideration of biological, cognitive, and behavioral etiologies that contribute to a given condition or vulnerability for a condition (American Psychiatric Association, 2000; Eaton et al., 2012; National Academies of Sciences, Engineering, & Medicine [NAM], 2019; Nestadt et al., 2019). In the US, the process of performing a nursing diagnosis is guided by the
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North American Nursing Diagnosis Association (NANDA), a classification system that utilizes a multi-axial method for identifying the diagnostic focus, subject (e.g. individual, family, community, group, or caregiver unit), clinical judgement, location, age, time, and status of diagnosis (Herdman & Kamitsuru, 2017; Thome et al., 2014). This system is particularly relevant to mental health conditions and diagnoses such as anxiety and depression (Nestadt et al., 2019). For example, if a person is presenting with ineffective coping mechanisms, a sense of powerlessness, and excessive/persistent symptoms of fear or worry, then the nursing response would be to integrate prevention and intervention methods to address the risks for/presentation of the nursing diagnosis of anxiety (listed in NANDA as #00146, Domain 9, Class 2) (Nestadt, 2019). This approach compliments, and in many ways expands on, the more biomedical focus of the public health response towards mental health disorders and symptoms by ensuring that treatment and response are not simply limited to the care for symptoms, but the whole person (NAM, 2019; Nestadt, 2019; Seymour, 2019; White, 2009).

Historically, nursing and public mental health have undergone several eras of thought and theoretical development, from the moral treatment period in the 19th century when asylums were created to medically treat or “enlighten” those with observable psychopathologic traits, to the current community support era which emphasizes early intervention in conjunction with collaborative care and integration of a narrative perspective to support mental health across the life course (Mojtabai et al., 2019; Spira, 2019). Subsequently, theories and conceptual models around mental health draw from a rich variety of thoughts and perspectives (Hankin & Abela, 2005). For instance, Freudian theories, which instigated the still-present psychoanalytic methods to treat and identify mental health disorders, relies upon both the presentation of symptoms as well as the repressed or actualized narrative of the unconscious, unguarded mind (Colodro-Conde et al., 2018; Rebok et al., 2019). An important criticism of this approach is the dependence on a psychiatrist to conceptualize and subjectively interpret the narratives and symptoms presented, thus limiting the reliability and, often, accessibility of this method (Clark et al., 2017). Going beyond this psychoanalytic thinking, in 1952 nursing theorist Hildegard Peplau proposed a more holistic approach to mental health in her interpersonal theory (Clark et al., 2017). Peplau’s interpersonal theory provided a framework for understanding the nurse-patient relationship, arguing that this therapeutic alliance was critical for promoting mental health education, communication, and healing (Clark et al.,
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Though criticized for her suggestions to have nurses provide direct therapeutic counseling for psychiatric conditions, a radical idea at the time, this theory advanced thinking around not only the presentation of mental health conditions, but also the developmental, therapeutic, and environmental factors that influence individual paths to healing and recovery (Goh & Agius, 2010; Mojtabai et al., 2019).

While this dissertation research did not attempt to perform any form of psychiatric diagnoses at any point, the conceptual definition of depressive symptoms used in this study is rooted in a history of classifying, understanding, and treating associated mental health conditions, thus meriting a brief overview of this public health approach to mental health. From the public health perspective, classification and measurement of mental health symptoms, physiological attributes, and diagnoses are the primary objective. According to the Diagnostic and Statistical Manual of Mental Disorders (DSM), 5th Edition, a mental health disorder is a “syndrome characterized by clinically significant disturbance in an individual’s cognition, emotion regulation, or behavior that reflects a dysfunction in the psychological, biological, or developmental processes underlying a mental functioning,” (Nestadt, 2019). There are several ways to classify a mental health disorder. For instance, the DSM-5 utilizes a multi-axial system of classification to help nursing clinicians, physicians, and public health professionals reliably identify disorders according to observable, discrete categories and definitions (NAM, 2019; Nestadt, 2019). By contrast, McHugh & Slaveny’s “Perspectives of Psychiatry” classifies mental health conditions by looking at both the mind as well as the bio-medical, neurological aspects of the brain (NAM, 2019; Nestadt, 2019). It does this by breaking down mental health into the categories of disease (i.e. what a person has), dimension (i.e. who a person is), behavior (i.e. how a person acts), and stories (i.e. a person’s experiences) (Clifton et al., 2017; Gorman & Anwar, 2014). Another system is the Research Domain Criteria (RDoC) by the National Institute of Mental Health (NIMH), which classifies mental health by organizing it into six key domains (negative valence systems, positive valence systems, cognitive systems, systems for social processes, sensorimotor systems, & arousal and regulatory systems) and dividing the different constructs within these domains into measurable, observable units of analysis (Clark et al., 2017; Seymour, 2019). Importantly, however, the DSM-5 does not classify mental health conditions based on the same methods as the RDoC, such as the use of surveys, neuroimaging, or collection of biomarkers, but rather relies
upon client self-report and clinician observation of behaviors and symptoms that manifest as a result of these disruptions to the cortico-limbic system (Gorman & Anwar, 2014). This first-person approach to gathering individual data has an important history in not only how the DSM-5 was developed, but also in how mental health disorders are understood and treated in public health and nursing practice (American Psychiatric Association [APA], 2000; Clark et al., 2017).

**Diathesis-Stress Model.** Current mental health research and practice is influenced by the empirical psychiatric epoch, which stresses the standardization of mental health typologies while integrating a more explanatory, human-centered approach to understanding and addressing the impact these conditions have on individuals, families, and communities (Kirmayer et al., 2007; Zubin & Spring, 1977). One theory which capitalizes on this perspective is the diathesis-stress model, or stress-vulnerability model (Bath, 2008; Mojtabai et al., 2019; Schneiderman et al., 2008). The diathesis-stress model was first developed in the 1960s to ground understanding in the physiological, psychosocial, and environmental risk factors that potentiate various vulnerabilities and lead predisposed individuals to develop psychiatric disorders (Clark et al., 2017; Franke, 2014; Hankin & Abela, 2005; Schneiderman et al., 2008). Diatheses, synonymous with vulnerabilities, are conceptualized as stable, although not immutable, traits and behaviors that an individual has which predispose them to specific mental health outcomes (Rebok et al., 2019). In this framework it is important to distinguish that diathesis/vulnerability is related to, but not the same as, a risk factor or stressor. In simple terms, stress is the body’s response to an event or exposure that challenges its natural processes (Colodro-Conde et al., 2018). A risk factor or stressor is then the event or exposure that triggers that physiologic response, but, unlike vulnerability, these factors do not necessarily give insight into the physiological or psychological mechanism that led to the response (Clark et al., 2017). Conversely, protective factors, also called safeguards throughout this dissertation research, are those experiences or exposures that help to prevent mental health outcomes, such as regular communication with a trusted support person, help to promote wellbeing and mitigate negative responses to stressors (Davis et al., 2019; Firmin & Lloyd, 2020; Murray, 2018). Trauma is then a negative experience/exposure that overwhelms an individual’s stress response, with the potential to have lasting effects on the learned physical or mental health responses to future events (Clark et al., 2017). Traumatic experiences or exposures can result in permanent or long-term damage to brain development, also known as toxic
stress, which is particularly disruptive to adolescent and child development (Hjemdal et al., 2011; Maccallum et al., 2015; Tol et al., 2013). Table 1.1 provides a simplified breakdown of these terms for reference.

There is a wide range of potential stress responses and vulnerabilities, and this heterogeneity is attributed to several factors (Hjemdal et al., 2011; Shah et al., 2011). For instance, while the loss of a loved one is a clear stressor, the depressive symptoms expected and observed in the following bereavement period do not always evolve into major depressive disorder (Broerman, 2020; Schultze-Lutter et al., 2016; Skrove et al., 2013). Vulnerabilities or diatheses, in this example, are then the traits or behaviors which predispose individuals to developing symptoms of major depressive disorder after the loss of a loved one (Rebok, 2020).

An evidence-based adaptation of the diathesis-stress model is recommended and routine (Broerman, 2020). Monroe and Simons (1991), who were among the first to apply the diathesis-stress model towards major depressive disorder rather than schizophrenia (the original focus of diathesis-stress theories), further emphasized the importance of adapting the diathesis-stress model around the disorder/outcome of interest and accounting for the acuity and severity of stressors when operationalizing the diathesis-stress model, as this can have an important bearing on health or behaviors outcomes (Broerman, 2020; Monroe & Simons, 1991). There are several ways in which the diathesis-stress model has been adapted over time (Neff & McGehee, 2010; Ng et al., 2012; Schultze-Lutter et al., 2016; Tol et al., 2013). For instance, an additive diathesis-stress model assumes a linear relationship between stressors and diatheses/vulnerabilities and is concerned with how repeated exposure to stressors impacts individual mental health (G. Rebok, 2020). Another variation of the diathesis-stress model underscores the role of resilience, integrating this emerging conceptual focus into a continuum between stress, vulnerability, and mental health outcomes (Ng et al., 2012). While definitions of resilience may vary, within this model it is more aptly defined as “factors that make a person resistant to the deleterious effects of stressors,” (Tol et al., 2013). Importantly, the psychological trait of resilience may help to explain the difference in trajectories and expressions of certain mental health outcomes among adolescents (Degnan & Fox, 2007; Niarchou et al., 2015). Similar to diathesis, resilience encompasses the underlying internal traits, characteristics, behaviors of an individual that help them to overcome and cope with various stressors.
More traditional, biomedically-focused applications of the diathesis-stress model view diatheses in terms of physiologic or genetic vulnerabilities, which are then impacted by stressors such as exposure to trauma (Broerman, 2020; Schultze-Lutter et al., 2016). Figure 1.1 uses the themes of this dissertation research to provide an adapted example of the Hankin & Abela (2005) diathesis-stress model, which includes a risk-resilience continuum (Hankin & Abela, 2005). The threshold depicted in this figure between reported and absent anxiety and depressive symptoms is arbitrary and primarily for visual effect. However, more clinically-based studies or trials (beyond the scope of this dissertation) may include a standardized means of measurement and/or diagnosis to identify the nature of this threshold with regards to symptoms, behaviors, and narratives attributable to the associated mental health disorders (Rebok, 2020).

There are several models of resilience: compensatory, where protective factors (resilience) and risk factors have a direct, additive effect; protective, where the protective factors (such as resilience) mitigate risk factors; and the inoculative or challenge model, where moderate doses of risk produce subsequent coping/protective responses such as resilience (Degnan & Fox, 2007; Niarchou et al., 2015; Patton & Viner, 2007). In each model, resilience is an important psychological trait and protective factor that can help to understand how responses to life events or biological factors may influence certain individuals more strongly than others, which has important implications for future public health and nursing responses to this issue (Ng et al., 2012; Patton & Viner, 2007; Sacks, 2003). For instance, resilience has repeatedly been connected to fewer or less acute anxiety symptoms among adolescents (Bosch et al., 2012; Degnan & Fox, 2007; Patel, 2013; Patton & Viner, 2007). Specifically, positive coping skills and strong, constructive relationships with parents, both of which are protective mechanisms within resiliency models, have been connected to mitigating peer-related stressors (e.g. bullying) associated with the development of adolescent anxiety disorders (Romeo, 2013, 2017). Together, these concepts lay the foundation for how adolescent symptoms of depression may be understood, which made the diathesis-stress model a good fit for this dissertation and allowed for a more robust exploration into the stressors, vulnerabilities, resiliencies, and mental health outcomes associated with DDA.

**Adolescent Mental Health**

Adolescents, defined by the World Health Organization (WHO) as individuals undergoing the period between puberty and adulthood of approximately ages 10-19, experience considerable biological and
psychosocial changes that continue to impact their immediate, short-term, and long-term health and behavior (Calarge et al., 2017; Chaby et al., 2017; Skinner et al., 2016). Hormonal and cognitive functioning in particular are known to undergo critical changes during the adolescent period (Braams et al., 2015; Calarge et al., 2017; Goldfarb & Phelps, 2017). While these changes are primarily associated with the naturally occurring neuroendocrine transitions of puberty, exposures to stress and adverse experiences during adolescent physiological development are increasingly attributed to the variations and dysfunctions in psychological or emotional health (Exner-Cortens et al., 2013; Degnan & Fox, 2007; Niarchou et al., 2015).

Adolescent susceptibility to mental health disorders is well documented, as indicated by the high prevalence of depression, anxiety, and antisocial behaviors, as well as the emergence of disorders such as schizophrenia or eating disorders (Bosch et al., 2012; Sacks, 2003). The implications of mental health disorders in adolescence can be severe or life-threatening (Bosch et al., 2012; Hodgdon et al., 2018). While adolescence is characterized by its developmentally appropriate emergence of impulsivity and risk taking behavior, there is a concerning potential for poor adolescent mental health to lead to substance use, alcohol dependency, difficulty obtaining or maintaining healthy interpersonal relationships, poorer cognitive health outcomes such as memory loss, or negative behavioral outcomes such as poor dietary habits or “oppositional” behavior, all of which may continue to impact individuals into adulthood (Hueston et al., 2017; Kornienko & Granger, 2018; Van Hoorn & Van Leijenhorst, 2017).

Adolescent mental health therefore warrants careful attention and response, acknowledging the complex environmental factors in the home, school, and social environment which may contribute to these health and behavioral outcomes (Eisenlohr-Moul et al., 2018; Ghandour et al., 2019; Rinne-Albers et al., 2013; Roberts & Lopez-Duran, 2019). The etiology of adolescent mental health disorders is multifaceted, as both biological and social/environmental factors are associated with the emergence and presentation of various health outcomes (Ballard et al., 2015; Karatekin, 2018; Roberts & Lopez-Duran, 2019; Schilling et al., 2007). From a biological perspective, chronic or acute exposure to stressors can impact the hypothalamus–pituitary–adrenal axis (HPA axis) and hippocampal neurogenesis, having implications for affective and cognitive functioning particularly as it relates to stress responses, interpersonal relationships, and behavior later in life (Ballard et al., 2015; Ghandour et al., 2019; Rinne-Albers et al., 2013; Schilling et al., 2007).
Stress-induced changes to hormonal or brain development in adolescence have particular implications for the etiology of depression and anxiety (Ballard et al., 2015). At a basic physiological level, the cortisol levels of most individuals are able to increase rapidly and be moderated in response to a given stressor, with peak latency understood to be a function of age, sex, and other psychosocial factors (Davis et al., 2019). However, evidence suggests that poor reactivity of the HPA axis may be a factor of peer-related stress exposure and is associated with a statistically significant increased risk for suicidal ideation and depression (Eisenlohr-Moul et al., 2018; Schilling et al., 2007).

Traumatic experiences are increasingly recognized for their ability to have lasting impact on adolescent mental health, especially if the adolescent trauma has been preceded by childhood trauma (Felitti et al., 1998; Liao et al., 2015; National Institute of Mental Health [NIMH], 2020). Tied to the growing nursing and public health focus on the health effects of adverse childhood experiences (ACEs), both experiencing trauma and having exposure to traumatic or abusive situations in childhood have been shown to contribute to poor mental health outcomes such as post-traumatic stress disorder (PTSD), anxiety, or depression, adverse changes to the brain’s hippocampal volume or corpus callosum, as well as behavioral outcomes such as use of violence in relationships or substance abuse (Eisenlohr-Moul et al., 2018; Felitti et al., 1998; Liao et al., 2015; Mayo Clinic, 2020; Remes et al., 2016). ACEs are defined as “moderately to severely stressful experiences during the first 18 years of life, including emotional, sexual and physical abuse, neglect, parental psychopathology, parental incarceration and parental separation or divorce,” (Liao et al., 2015; NIMH, 2020). Although adolescent dating violence or digital dating abuse are not typically included in measures or operational definitions of ACEs, studies such as the longitudinal research among adolescents by Davis and colleagues (2019) have identified a strong connection to these childhood exposures and other forms of interpersonal violence later in life (Davis et al., 2019). This evidence supports the importance of rigorous, strategic research around these stressors not only across the lifespan, but also related vulnerability and resiliency factors (McCauley Ohannessian et al., 2017).

Depressive Symptoms. An estimated 14.4% of approximately 274,000 nationally representative US adolescents ages 12-17 years old were found to have had at least one past-year major depressive episode in 2018, with prevalence higher among adolescent females (21.5%) than males (7.7%) (Rice et
With regards to race and ethnicity among this age group, non-Hispanic White, American Indian/Alaskan Native, and bi-racial adolescents reported the highest levels of major depressive episodes (15.1%, 15.2%, & 17.7%, respectively) (Pannekoek et al., 2014). Further, in the 2017 Youth Risk Behavior Survey (YRBSS), 31.5% of students in the US reported persistent sadness or hopelessness almost every day for two or more weeks (Kann et al., 2018). The 2017 YRBSS further found that the prevalence of depressive symptoms was higher among Hispanic (33.7%) than white (30.2%) and black/African American (29.2%) students (Kann et al., 2018).

Trademark symptoms of depression for adults include depressed or irritable mood, anhedonia, weight or appetite changes, sleeping more/less than usual, feelings of guilt or worthlessness, psychomotor agitation or impairment, decreased ability to concentrate, suicidal ideation or thoughts of death, attempted suicide, or even hallucinations and delusions, although these last two symptoms are rare (Cullen et al., 2014). As previously mentioned, when these symptoms persist or become disruptive to health and functioning, individuals may be categorized or diagnosed as having major depressive disorder (MDD) or a related mood disorder (Pannekoek et al., 2014; Salk et al., 2016). Importantly, symptoms for adolescents may not be the same as adults. For instance, Rice and colleagues (2019) found that adolescents were more likely to exhibit appetite or weight changes, energy loss, or insomnia, whereas loss of interest/anhedonia and difficulty concentrating were more common in adults in their two-generational study (Rice et al., 2019). Symptoms in adolescents may further differ from that of children, as a chart review by Breton and colleagues (2012) identified that both male and female adolescents presented with more internalized symptoms (e.g. sadness, suicidal ideation) compared to younger children who may engage in attention seeking behavior (Pannekoek et al., 2014).

Similar to their risk for GAD, adolescent risk for MDD is related to their environment as well as stage of physiologic, psychologic, and social development (Copeland et al., 2019; Thapar et al., 2012). Physiologically, MDD is associated with reduced resting-state functional connectivity of the amygdala, and therefore pharmaceutical treatments for adolescent and adult depression are often aimed at normalizing this amygdala response in order to achieve emotional stability (Mezulis et al., 2006). Other commonly associated physiologic factors with MDD or depressive symptoms are age and pubertal timing (Schwartz et al., 2014; World Health Organization [WHO], 2020). For example, a study of 630 girls
between 9-16 years of age in western North Carolina found that early pubertal timing and higher testosterone levels were associated with higher rates of depression (Polderman et al., 2018). The onset of puberty is also thought to account for gender differences in depression rates at young ages (APA, 2015; WHO, 2020). For instance, Salk and colleagues (2016) in their study of a convenience sample of 416 adolescents diagnosed with MDD found that the difference between male and female onset in depressive symptoms didn’t occur until age 13, with male-identifying youth symptoms accelerating later than those who were female-identifying (Winter et al., 2016). Notably, the trajectories of this study sample re-converged to a nonsignificant difference by age 18 (National Institute of Health [NIH], 2020). In acknowledgement of the complexity of these dynamics, this dissertation research used both qualitative and quantitative methods to explore how these intersecting factors (e.g. age, maturity level, sex assigned at birth, gender identity) may impact the severity, duration, and impact of depressive symptoms associated with digital dating abuse.

**Gender**

The second chapter will review research related to gender and sex in terms of intimate partner violence experienced by those who identify as cisgender male, man, or boy. To set the stage for that discussion, as well as related components within the current chapter, the next section will define and explore conceptual and theoretical foundations for how the constructs of gender identity and sex assigned at birth are understood and defined.

**Terms & Definitions.** In the late 1960s, Dr. Robert Stoller was among the first to formally recognize and publish regarding the inner psychological experiences of gender, hypothesizing both the interrelatedness and unique attributes of gender and sexual identity (Morgan et al., 2016; Vlassoff, 2007). Since, innumerable studies have emerged to explore and understand the dynamics of this complex construct. The World Health Organization (WHO) definition of gender is the "socially constructed roles, behaviors, activities, attributes, and opportunities that any society considers appropriate for men and women, boys and girls and people with non-binary identities," (Vlassoff, 2007). This may or may not be consistent with the binary (male or female) sex assigned at birth by a medical professional, midwife, or birth attendant that is designated based on one’s genitalia, reproductive organs, or genetic testing (NIH, 2020). Gender norms are then formed when a context or culture iteratively transforms and develops
traditions, expectations, structures, values, and resources for recognized genders, which are often limited to the binary sexes assigned at birth (Morgan et al., 2016; NIH, 2020). The many types of gender identities include man, woman, bigender, agender, genderqueer, or androgyne, among others, which may evolve over time, culture, or context (Hawkes & Buse, 2013). Because gender and sexual identity are distinctive and not always congruent, gender is often generalized into either cisgender (where one’s gender identity aligns with sex assigned at birth) or transgender (one’s gender differs from the sex assigned at birth) (Hawkes & Buse, 2013; Morgan et al., 2016). Importantly, gender identity may or may not be consistent with one’s gender role (culturally-specific behavioral expectations – most often at a binary level), gender expression (how an individual chooses to outwardly convey their gender identity through behavior, appearance, or countenance), or sexual orientation (“an enduring pattern of emotional, romantic, and/or sexual attractions”) (Morgan et al., 2016; Rogers, 2006). Those who do not conform to the traditional, binary models of societal norms and influences around sexuality and gender are often grouped into the broader category of gender and sexual minorities (Rogers, 2006).

Theoretical Frameworks. Assessing risk for health outcomes based on either sex assigned at birth, gender identity, or sexual identity alone is difficult considering the interconnectedness of biological and social influences; however, gender has been repeatedly linked with various health outcomes (Morgan et al., 2016; Vlassoff, 2007; WHO, 2020). There are many ways in which gender is viewed and operationalized within public health, with one review by Morgan and colleagues (2016) identifying over 45 different gender frameworks, guidelines, and tools used by various agencies and organizations (Morgan et al., 2016). A core element in many of these perspectives is the importance of power. More specifically, the balance or, as is often observed, imbalance of power between gender identities is understood to influence access to resources, division of labor, social norms, and decision making across sectors and ecological levels, influencing not only health systems and policy, but also individual health behaviors and outcomes (Rogers, 2006; Wendt, 2016).

A good example of the integration of power into public health discourse is found in the widespread use of the feminist theory (Deveaux, 1994; Lupton, 2017a). Feminist theory is centrally concerned with gender and power, especially within studies on intimate partner or sexual violence, recognizing the potential of these dynamics to incite harm by men against women (Deveaux, 1994; McCarthy, 2017).
Centered on themes of dominance and oppression, feminist theory not only organizes thinking around this issue but promotes and “embraces rather than avoids the inescapable political dimensions of public health, recognizing that the barriers to good health that exist at the individual level require political solutions,” (Deveaux, 1994). This view of power varies from the Foucauldian theoretical perspective, built from the expansive works of Michael Foucault (McCarthy, 2017). The Foucauldian theoretical framework does not view power as repressive (with some exceptions), but rather power is conceptualized in terms of its potential for the productive generation of knowledge, practice, and social interaction (McCarthy, 2017).

In Foucault’s *History of Sexuality* (vol.1) (Foucault, 1990), he challenges the dualistic notion that power is solely possessed by the state/government and argues that it can instead be possessed at the more individual level, with a “state of subordination” to explain gender differences in power dynamics (Deveaux, 1994; Foucault, 1990; McCarthy, 2017). Though this framework is influential in many areas of science, many feminist scholars have criticized the Foucauldian perspective for not only the notion that power can be possessed (thus obscuring the role of personal agency in exercising power), but for failing to account for the systemic injustices that specifically and consistently affect women (Deveaux, 1994; McCarthy, 2017).

A critique of both the feminist theory and Foucauldian perspective is limited acknowledgement of the lived experiences of individuals outside of the roles or contexts in which these gendered power dynamics are observed (Bowleg, 2012; Collins & Bilge, 2020). Thus, there is a growing acknowledgement within public health of the need for intersectionality, defined as the “intersecting power relations [that] influence social relations across diverse societies as well as individual experiences in everyday life,” most often focusing on the interplay between race/ethnicity, class, and gender identities (Bowleg, 2012). First coined by scholar Kimberlé Crenshaw in the early 1990s, intersectionality had its early roots in the black feminist movement of the 1960s and 1970s (Collins & Bilge, 2020; Kang et al., 2017). Intersectionality speaks to the importance of power dynamics at all ecological levels, underscoring how intersecting identities (e.g. race, class, gender, sexuality, language, age, etc.) may shape social interactions and lead to vulnerability within a given population or individual (Bowleg, 2012). In other words, intersectionality posits that various identities are mutually constitutive, meaning that they are not independent, unidimensional, or hierarchically structured but rather are multiplicative and have an interrelated impact on individual health.
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(Kang et al., 2017). Although intersectionality was developed as a theoretical framework and not as a
testable theory to predict health outcomes, it provides a much-needed critical analytical perspective for
socio-behavioral findings in public health and nursing research (Bowleg, 2012; Kelly, 2011; Ruiz et al.,
2021).

Congruent with many of the key features of intersectionality is the critical theory paradigm, which has
been used widely in nursing literature to support the disciplinary objective to foster the integrity of the
whole person across the lifespan (Ferrarese, 2016; Holmes & Warelow, 1997; Ying, 2011). The critical
theory perspective is less of a theoretical framework and more a paradigm of thought that influences a
plethora of theoretical views and constructs (Dutton & Nicholls, 2006; Ferrarese, 2016). There are many
ways in which critical theory can be applied to research, but this dissertation study drew more heavily on
the post-structuralist theoretical school of thought, which focuses on the “deconstruction of unified
narratives to expose how dominant ideology works” and impacts individual risks and health outcomes
(Ferrarese, 2016). This is because poststructuralism identifies the role of individual vulnerability in how
the dynamics of power, agency, and socio-political structures are understood (Ferrarese, 2016). Critical
theory further complements the diathesis-stress model of mental health used in this dissertation and
affirmed the importance of qualitatively assessing the lived experiences of adolescents with varying
degrees of vulnerability and resilience (Ferrarese, 2016).

Gender and Mental Health. An important observation in mental health epidemiology is the differences
in health outcomes when data is disaggregated by gender or sex (Vlassoff, 2007; World Health,
Organization, 2020). Among those who identify as male or female, it is commonly observed that females
are at higher risk for anxiety and depression than males, even (or especially) during adolescence (Fix et
al., 2021). While trajectories of males- and female-identifying youth may converge or be similar later in
life, the differences in severity and outcomes as a result of these mental health conditions has become a
growing area of public mental health interest (Cyrus, 2017; Temple et al., 2016; Meyer, 2003; Teen
Dating Violence, 2018; Zweig et al., 2013). Further, despite the higher prevalence of these disorders
among female-identifying teens, male-identifying adolescents have been found to be over 3.5 times more
likely to commit suicide, indicating a clear and pressing gap in research (Allen et al., 2015).
Although gender analysis in current literature is often limited to cisgender, heteronormative individuals, a growing body of scientific evidence recognizes the importance of including gender and sexual minorities (Horwitz et al., 2020; Starrs et al., 2018; Stockman et al., 2015; Whitton et al., 2019; Winter et al., 2016). Often explored from the perspective of the minority stress model, gender and sexual minorities are understood to be at much higher risk of depression than their cisgender, heterosexual counterparts (Stockman et al., 2015). For instance, Felner and colleagues (2021) found that transgender and gender non-conforming participants (n=2,995 out of a total n=17,364) in the longitudinal, nationally representative Growing Up Today Study scored statistically significant higher for depression measures than their cisgender, heterosexual counterparts, with a 1.76-3.35 greater odds of depression and 2.41-4.59 greater odds of suicidal ideation (Felner et al., 2021; Growing Up Today Study (GUTS), 2016). The minority stress perspective, developed by Ilayn Meyer in the early 2000s, builds on the stress theory notion that a mismatch between an individual and their experiences within society leads to stress, identifying that those within gender and sexual minority groups of a given context experience additional stressors that are chronic, socially based, and often deleterious to health (Dentato, 2012; Meyer, 2003). For gender and sexual minorities, the stigma, prejudice, or discrimination endured creates “a hostile and stressful social environment that causes mental health problems,” (Meyer, 2003). The same is true for racial and ethnic minorities, who are at disproportionate risk of prolonged, chronic, and severely debilitating depression despite having a lower incidence of depression that white individuals (Bailey et al., 2019). A study of online survey data from n=200 LGBTQ people of color based in urban areas (mainly New York, Chicago, Seattle), Sutter & Perrin (2016) found that identifying as both a person of color and a gender or sexual minority was strongly related to self-reporting anxiety and depressive symptoms (measured using the Hopkins Symptom Checklist-25) (Sutter & Perrin, 2016). This underscores the need for incorporating an intersectional approach that acknowledges, as discussed in the Gender section above, the multiplicative and interrelated aspects of gender identity, sexual identity, race/ethnicity, and other identifying characteristics (Kang et al., 2017; Sutter & Perrin, 2016) While this dissertation was not powered to test differences in DDA or mental health symptoms by racial/ethnic identity or among those who are gender diverse/non-binary, this is a clear gap in evidence that needs to be addressed in future research.
Adolescent Dating Relationships

In order to better conceptualize the complexities, risks, and implications for adolescent dating violence or digital abuse, it is first important to understand what it means to date/flirt/be in a relationship as an adolescent today. In research and practice, identifying a universal, reliable, and comprehensive metric for understanding adolescent dating relationships is a persistent challenge. For instance, Foshee and colleagues (2010) in their well-recognized Safe Dates school-based intervention for adolescent dating violence defined dating as “including informal activities like meeting someone at the mall, a park, or at a basketball game, as well as more formal activities such as going out to eat,” so as to focus on dating partners that are actively engaged in in-person activities (Foshee et al., 2010, 2014; Temple et al., 2016). Other studies such as one conducted by Reed and colleagues (2016) use a broader definition among their young adult sample by identifying those that have “current or former adolescent or young adult romantic relationships,” thus allowing for a broad scope of interpretation (Reed et al., 2017). By further contrast, Nesi and colleagues (2017) use a similarly broad definition of a dating partner, yet clarify this in more lay-person terms to mean a “boyfriend/girlfriend or someone you like ‘more than friends’ who you have ‘talked to’ or ‘hung out with,’” (Nesi et al., 2017). The breadth and ambiguity of how dating relationships are defined within this age group challenges the scientific understanding and response to unhealthy adolescent relationships (Reed et al., 2017). Further, individual physical and hormonal changes, the evolution of social expectations, and cultural/community/familial norms are all thought to influence the commencement, intensity, duration, and quality of romantic relationships (Capaldi et al., 2007).

Teen Dating Violence (TDV) & Digital Dating Abuse (DDA). The CDC recognizes adolescent or teen dating violence (TDV) as a phenomenon synonymous with intimate partner violence (IPV), defined as “physical, sexual, psychological, or emotional aggression within a dating relationship, including stalking,” (Centers for Disease Control and Prevention [CDC], 2018). Existing evidence on TDV is limited in comparison to the growing body of literature on adult experiences of IPV, and many measures used to capture TDV trends were originally developed for adult female samples (Cyrus, 2017; Van Ouytsel, 2016; NAM, 2019; Nesi et al., 2017; Reed et al., 2016). This is problematic, as the growth and development of
the adolescent brain is particularly sensitive to exposures and influences of external stimuli, trauma, and stress, which requires a tailored approach to research distinct from approaches used for adults (Smith et al., 2018; Peskin et al., 2017). In the current digital age, the expression and experience of these relationships are often, and in some cases exclusively, mediated by technology (Capaldi et al., 2007; Giordano et al., 2006, 2010; O’Leary, Slep, et al., 2008; Taylor et al., 2017). For instance, Lykens and colleagues (2019) identified that 34% of a national online sample of 1,500 youth ages 13 to 24 years old used dating apps and websites to engage in online flirting or sexual behavior, including 19% of the sample under 18 years of age (Lykens et al., 2019). Nearly 41% of this sample further reported using social media to flirt with others online, demonstrating the importance of these platforms to youth romantic relationships and communication (Lykens et al., 2019). Considering the central influence of environmental, social, and contextual factors on adolescent development, whether/how dating relationships are carried out via digital platforms becomes increasingly pertinent (Gabriel, 2014).

In unhealthy relationships, adolescent dating partners may use technology to inflict harm or control over one another (Al-Alosi, 2017; Calvete et al., 2019; Temple et al., 2016). There are many terms which exist to coin or conceptualize these trends and behaviors. Perhaps the most common is digital abuse, used synonymously with cyber abuse, which is defined as the repeated abuse, harm, or aggression by one person against a current or former partner through the use of digital technology (Lucero et al., 2014). When these behaviors occur between dating partners, it is more often referred to digital dating abuse, or cyber dating abuse (Reed et al., 2017). Other terms that may be found in the literature regarding these behaviors include electronic aggression, electronic harassment, digital intimate partner abuse, online harassment, digital coercive control, technology-based coercive behavior, or technology-facilitated abuse (Al-Alosi, 2017; Mishna et al., 2009; Smith-Darden et al., 2017; Watson, 2010). Other forms of DDA include: cyberstalking (i.e. using a device or internet to track a partner’s whereabouts); hacking (accessing, manipulating, or controlling someone’s device or account without permission); cyberbullying or online harassment (violently and repeatedly provoking, distressing, or belittling an individual); revenge pornography (a highly criticized term due to its limited implied context or consequence, but includes non-consensual sharing of intimate images) (Nasaescu et al., 2018); sexting coercion (manipulating or forcing someone to sext, or send intimate content via text message); posting false or unwanted information or
photos about someone; or controlling who, how, when, or on what platform one’s partner digitally communicates or interacts with others, among other harmful behaviors (Reed, 2015). Some of these are legally incriminating in nature, such as online fraud or identity theft (Finkelhor et al., 2020; Lupton, 2017a). Others, however, are largely unacknowledged legally or can be achieved without creating the digital footprint needed to file a legal or corporate case (Finkelhor et al., 2020).

The rapidly growing body of evidence around DDA suggests that roughly 20% of US adolescents are expected to have experienced some form of DDA in the past year (Hinduja & Patchin, 2020; Lu et al., 2021; Temple et al., 2016; Zweig et al., 2014; Zweig et al., 2013). For instance, in a longitudinal assessment of digital dating abuse among n=1042 ethnically diverse high school students from seven high schools in Southeast Texas, Lu, Van Ouystel, & Temple (2021) found that DDA was experienced ranged from 21.1-22.8% across three annual surveys between 2013 – 2015 (Lu et al., 2021). In another study with n=3745 male- and female-identifying middle and high school participants, Zweig et al. (2013) found that 23.3% of males and 28.8% of females reported past-year DDA (Zweig et al., 2013). More recently, a study among a nationally representative sample of n=2,218 middle and high school students ages 12-17 found that was reported by 28.1% of participants, with a significantly higher prevalence among male-identifying teens in this study (32.3%) that female-identifying participants (23.6%) (Hinduja & Patchin, 2020). Prevention of DDA and safe, responsible digital citizenship on social media, phones, and other digital platforms are not uniformly taught to adolescents, an oversight that may contribute to experiences or uses of these harmful behaviors (Albury & Byron, 2018; Reed et al., 2016, 2017).

Understanding how DDA impacts the epidemiology of IPV and psychosocial outcomes thus requires a critical examination of existing digital norms and platforms, sex differences in the use and experience of digital abuse, the bearing of digital behaviors on relationship dynamics and mental health, as well as the risk and protective factors associated with digital behavior (Lupton, 2017a; Reed, 2015; Zweig et al., 2013). Further, there is a vaguely understood relationship between online experiences and adolescent depression and other psychiatric and psychosocial outcomes, particularly among adolescents and young adults (Reed et al., 2017; Temple et al., 2016; Zweig et al., 2014). Therefore, this dissertation research explores the relationship between digital dating abuse and depressive symptoms to not only fill gaps in
understanding around this established correlation, but also to qualitatively assess how these experiences are perceived and evolve over time and context.

**Socio-Ecological Framework**

There are many well-detailed social-ecological frameworks that can be useful for organizing conceptual thinking and current evidence on the factors associated with TDV and DDA (Alleyne-Green et al., 2012; Bauman et al., 2007). Dr. Jacquelyn White’s “person-centered model for Gendered Adolescent Interpersonal Aggression” (Figure 1.2) is one that provides a clear, developmentally-appropriate ecological framework for understanding conflict in adolescent dating relationships (White, 2009). White’s model approaches TDV from the following levels: individual/interpersonal, assault/conflict, “microsystem” or interpersonal relationships and dyads, “meso/exosystems” or social networks and connectedness, macrosystem or societal norms/customs, and “chronosystem” or ongoing/cumulative life events (White, 2009). White further contends that individual and social identities comprise a context-dependent “meta-construct” that should be applied across all levels of the ecological framework, noting that identities such as gender “influences and is influenced by each level of the social ecology in an ongoing and dynamic interaction,” (White, 2009). Put another way, gender identity is an important aspect of the lived experience of adolescents, and it may be shaped according to the factors within each level (White, 2009). For the purposes of this dissertation, the focus on gender was expanded to a more intersectional lens of cisgender identity, race/ethnicity, and age.

The following includes an evidence-based discussion (summarized in Table 1.1) on the intersecting identities, stressors, diatheses, resiliencies, and/or safeguards associated with both TDV and DDA at each level of White’s person-centered framework to integrate the discussion with the concepts and constructs put forward by the diathesis-stress model. To briefly review the diathesis-stress model terminology, stressors/risk factors are adverse experiences (i.e. things that happen to you), whereas safeguards work to promote health/wellbeing (Broerman, 2020). Vulnerabilities/diatheses are then those intrinsic physiological and psycho-behavioral characteristics (i.e. things that make you who you are) that contribute to poor health outcomes, whereas resiliencies are the internal traits, characteristics, behaviors that strengthen coping mechanisms and promote health/wellbeing (Broerman, 2020).
**Individual Level.** Individual-level diatheses associated with TDV, particularly physical and sexual violence, are primarily centered around the developmental stage/physical maturity of the individual, their emotional or mental maturity or wellbeing, and their risk-taking behavior (Alleyne-Green et al., 2012; Bauman et al., 2007; Champion et al., 2008; Connolly & Beaver, 2015; Foshee et al., 2007; Rose & Rudolph, 2006; Williams et al., 2008). In addition, poor school performance, substance use/abuse, and poor anger management are all individual-level vulnerabilities that also been connected with TDV, as well as health outcomes such as depression, anxiety, or PTSD from prior traumas or injuries from violence (Baker & Carreño, 2016; Moretti et al., 2006; Muñoz-Rivas et al., 2007; Nikulina et al., 2017; Shorey et al., 2015; Silverman et al., 2001; Swahn et al., 2008). These psycho-behavioral diatheses are also associated with the more negative health outcomes associated with TDV, such as depression or suicidality (Swahn et al., 2008). Further, being from an economically disadvantaged household as well as belonging to a cultural or racial minority group are among the intersecting identities closely tied to TDV in some studies, but not all (Kennedy, 2008; O’Leary, Smith Slep, et al., 2008; Uloa et al., 2004; Wang & Ho, 2007). By comparison, the main individual intersecting identities associated with DDA include both age and gender identity (Reed, 2015; Reed et al., 2017; Van Ouytsel et al., 2018). Gender identity has been primarily associated with the type of DDA experienced, with sexual forms of DDA being experienced more by female-identifying adolescents than males (Peskin et al., 2017; Reed et al., 2016, 2017). Other forms of DDA have been shown to be largely comparable, with non-statistically significant differences between those who identify as male or female (Reed et al., 2017; Van Ouytsel et al., 2017). However, the mechanism which leads to individual stress responses as a result of DDA experiences is yet unclear. For instance, Reed and colleagues (2016) in their study of 365 undergraduate students disaggregated their findings on DDA by cisgender males and females, finding that while prevalence of DDA was not statistically different between genders overall, cisgender females were significantly more likely to report emotional distress as a result of their DDA experience, as well as to engage in active, protective behavioral responses such as blocking their partner online (Reed et al., 2016).

**Conflict Level.** In an abusive dating relationship, the escalation of conflict into an acute episode of assault, violence, or harm may be influenced by a number of factors. For instance, access to weapons has been shown to be a major risk factor for severe physical violence (Niolon et al., 2015). However,
outside of severe forms of physical or sexual aggression, one challenge to research measurement and data analysis specific to adolescence is discerning when aggression within a relationship is true violence versus horseplay, flirtation, and joking (Cascardi & Avery-Leaf, 2015; Foshee et al., 2007). Several studies have found that experiences of physical TDV in a joking context may be unrelated to any negative mental and physical health outcomes or the likelihood of engaging in intimate partner violence later in adulthood (Fernández-González et al., 2013; Hamby, 2016). The context and environment in which a conflict arises may influence not only the response or safety strategy individuals employ, but also the safety strategies used and the degree to which the situation escalates (Duval et al., 2020; Vangie A. Foshee et al., 2011). For example, if someone was to be sexually assaulted by their dating partner in a small, rural community, then the basic logistics of safely accessing resources, assistance, or support may be a significantly more challenging than it would be for someone in an urban environment (Bouffard & Muftić, 2006; Foshee et al., 2013). Finally, the role of retaliation is an important risk factor at the conflict level, with 20-86% of violent teen couples report reciprocal violence either in person or online (Caridade et al., 2019; Dardis & Gidycz, 2017; *Teen Dating Violence*, 2018). Learning constructive and strategic problem solving or conflict management techniques, therefore, is an important TDV protective factor or safeguard endorsed by many intervention and prevention programs (Bosworth et al., 2000; Foshee et al., 2016; Temple et al., 2013).

Much of what is understood to place individuals at risk at the conflict level digitally is based on the understanding of how diatheses or resiliencies of personal data management, self-representation, and/or digital autonomy is protected or put at risk by digital stressors or safeguards (Child et al., 2012; Lupton, 2017). The aforementioned study by Reed and colleagues found a heterogeneity in young adult emotional investment in digital experiences (Reed, 2015). This is consistent with the “phenomenology of human embodiment” theoretical perspective found in digital health and citizenship studies, which builds on the sociomaterial perspective and reiterates that humans experience life and development through their senses and bodies (Lupton, 2017). Thus, the subjective sensory, bodily, and emotional experiences of digital technology are important to understanding the affective atmosphere and the diatheses/vulnerabilities that contribute to the type and acuity of emotional distress adolescents experience as a result of DDA (Lupton, 2017; Morelli et al., 2016; Worsley et al., 2019). Bogaczyk (2017)
acknowledges this in his review on the moral consciousness and media ecology, noting that these experiences are "an intersubjective experience characterized by intentionality," a phenomenological concept known as intersubjective intentionality (Bogaczyk, 2017). More research is needed to understand how these intersubjective perspectives and intentions may make adolescents more vulnerable to poor mental health outcomes as a result of DDA and related stressors.

Microsystem Level. The interpersonal and dyadic level of this model, called the microsystem, is pertinent as it speaks to the various social and romantic relationships that an adolescent may develop (White, 2009). As dating relationships by definition imply a lower level of long-term commitment, specific diatheses/vulnerabilities to consider within this demographic include the level of attachment within a dating relationship, how exclusive the dating partners are, as well as the relationship and communication skills developed and employed (East & Hokoda, 2015; Temple et al., 2016; McDermott et al., 2013). In addition, family-level diatheses or resiliencies, such as the quality of parent-child relationships, have been strongly connected to the impact of TDV (Foshee et al., 2011; Latzman et al., 2015). Risk factors for TDV related to the family or home environment for adolescents include a lack of family connectedness, witnessing family violence or abuse in the home, access to alcohol or substances in the home, and parental use of violent discipline (Eaton et al., 2007; Sears et al., 2010; Latzman et al., 2015; Van Ouytsel et al., 2017). Greater parental monitoring and engagement, however, has been shown to be a significant protective factor for TDV (Latzman et al., 2015; White, 2009). There is also an association between peer influences and teen responses to conflict or aggression in their dating relationships (Chen et al., 2017; Foshee et al., 2010; Heinze et al., 2018; Stephenson et al., 2013). Further, exposure to bullying in schools or online are related stressors that may also contribute to experiences of TDV (Basile et al., 2020; Foshee et al., 2016; Niolon et al., 2015; Peskin et al., 2017).

In exploration of resiliencies and protective factors at the microsystem level is critical, as the safeguard of strong social bonds and the resilient trait of being able to maintain strong social networks has been connected with preventing or mitigating TDV and its impact on mental health (Joly & Connolly, 2019; Maas et al., 2010; Rodney et al., 2005; Seabrook et al., 2016). In addition, how individuals behave on online platforms is a vulnerability/diathesis that has been repeatedly connected to trends in offline, in-person health and behavior (Hinduja & Patchin, 2020; Van Ouytsel et al., 2017; Seabrook et al., 2016).
This is particularly true among adolescents, who are particularly prone to the stressors and safeguards of social media, including the impact these experiences/exposures can have on their social and romantic scripts, expectations, and behaviors (Abbasi, 2019; Korchmaros et al., 2013; Rostad et al., 2019; Widman et al., 2014; Zweig et al., 2013). For instance, in a national survey with n=1588 randomly sampled individuals ages 10-15 years, those exposed to violent media, both online and offline, were found to have significantly higher odds of engaging in violent behavior in the past year (Ybarra et al., 2011). Similarly, Temple and colleagues (2016), in their longitudinal assessment of a n=1042 high school student sample recruited from seven public schools in southeast Texas, found significant (p<0.001) Pearson’s correlations up to 0.47 between technology-facilitated dating abuses and in-person dating violence both cross-sectionally and across timepoints (Temple et al., 2016). These findings suggest that the individual risk and protective factors, as well as associated diatheses and resiliencies, for DDA may be interwoven with those for in-person forms of TDV, emphasizing the important need for more research in this area.

**Meso/Exosystem Level.** Of particular importance to this demographic is the mesosystemic and exosystemic level. To clarify the difference between these terms, the mesosystem reflects the interconnections between an individual and their environment or social systems, whereas the exosystem is the greater neighborhood, school, or community context in which adolescents live and stay connected to others (Campbell et al., 2009; White, 2009). Mesosystemic stressors/risks include poor school or social bonds, expulsion and/or suspension from school, as well as exposure to negative models of deviant or conflict behavior in the school setting (Giordano et al., 2015). Increased school bonding, by contrast, has been shown to be a protective factor against TDV (Foshee et al., 2011). At the exosystemic level, exposure to interventions, programs, or services which tailor to building resilience, healthier attitudes, and lower tolerance of aggressive behavior among adolescents have been shown to be safeguards against TDV (De La Rue et al., 2017; Taylor et al., 2017). These protective factors are often limited in quality or accessibility, which can be problematic for guiding healthy behaviors and relationship norms even in high resource settings (Taylor et al., 2017). This is particularly true when an adolescent lives in an economically disadvantaged neighborhoods or communities, in which female-identifying adolescents report experiencing disproportionate amounts of TDV (Chang et al., 2015). In addition, a growing body of research demonstrates that living in a rural area may be an important exosystemic stressor (Bosch &
Among adult samples, chronic and severe relationship violence is more common in rural locations, and homicide risk by a partner increases in accordance with rurality (Logan et al., 2001; Sandberg, 2013). This again may be tied with access to violence services, which may be less available in more remote locations, as well as change in norms or expectations of communities to sustain more traditional gender norms and customs (Bosch & Schumm, 2004; Sandberg, 2013). For example, some research has found that acceptance of relationship violence and elevated privacy concerns where “everyone knows one’s business” in a small town are distinctive concerns for individuals in rural areas seeking support or help (Bosch & Schumm, 2004; Bouffard & Muftić, 2006; Pinchevsky & Wright, 2012; Sandberg, 2013). Conversely, some studies suggest that stronger social organization and connectedness in rural communities may serve as a protective factor for some adolescents (Browning & Cagney, 2002; Chang et al., 2015; Wright & Benson, 2010).

In the digital world, the meso/exosystemic level reflects the interconnections between an individual and their online or technology-based social stressors or safeguards, with social media, text/direct messaging, and video chatting being the primary forms of digital engagement for adolescents today (Smith-Darden et al., 2016). Importantly, many digital tools and spaces are frequently designed to encourage user networking that can quickly lead to behaviors such as “lurking,” or potentially unhealthy, problematic degrees of surveillance of other profiles, user behaviors, and media sources (Child et al., 2012; Lee & Cook, 2015; Polančič et al., 2011; Tokunaga, 2011). One well-known example is the GPS tracking feature of the social media app Snapchat that promotes user surveillance of others who are logged into the app (Dunn & Langlais, 2020). Cook and colleagues from the Department of Communication at Kent State University have studied these issues in detail using the communication privacy management theoretical perspective, identifying that online lurking and efforts to protect personal information online are rooted in the principles of “privacy ownership, privacy control, and privacy turbulence,” particularly as it relates to social media use (Child et al., 2015, 2012; Child & Starcher, 2016; Petronio, 2013). In their studies, they find that a major driver of safety behaviors online is the experience of “turbulence” or conflict in their online experiences, indicating that digital health and safety is a secondary consideration of their sample populations, a particular vulnerability/diathesis observed among adolescents (Child et al., 2015, 2012; Child & Starcher, 2016). Exploration into these experiences from a
public health nursing and safety lens is therefore critically needed, with particular consideration of how
digital stressors and related vulnerabilities may impact in-person help seeking, safety behavior, and
patterns of in-person conflict.

Macrosystem Level. A considerable number of studies on adolescent experiences of violence
have strongly emphasized the connection between TDV and harmful, macrosystemic gender norms
which perpetuate diatheses such as negative male attitudes and stressors such as gender-based
violence (Reed et al., 2011; Stith & McCollum, 2011; Tharp et al., 2013). In a longitudinal study among
male-identifying youth, for example, traditional, egalitarian gender norms which emphasize male power,
toughness, and emotional disengagement moderated the use of violent or aggressive behavior in their
relationships (McNaughton et al., 2016). As gender role attitudes and beliefs are found to change as
adolescents develop, mature, and learn from their environment, the impact and messaging of these
macrosocial and cultural influences on normative beliefs is critical (Crouter et al., 2007; Orpinas et al.,
2013). Addressing exposure to harmful macrosystemic norms and the promotion of gender-equitable
beliefs, behaviors, or attitudes is often a core focus of dating violence interventions among adolescents,
and these important tools have high rates of success in fostering attitude and knowledge change (Coker
et al., 2015, 2016; De La Rue et al., 2017). However, one critique of interventions that challenge macro-
level gender norms is that their limited ability to address the mixed messaging adolescents may receive
when violence is endorsed by various media sources, or they may lack salient communication techniques
for ensuring access and availability of violence and safety information (Ferguson & Ferguson, 2011).
Thus, many scholars agree that it is critical for future trials to develop and test interventions aimed at not
only knowledge and attitudinal change, but also tools that can help to navigate the many digital stressors
and safeguards, as well as to promote resilient behaviors associated with prevention of violence such as
the use of safety strategies (Coker et al., 2015, 2016; De La Rue et al., 2017).

From the digital perspective, it is challenging to conceptualize what comprises a digital “society” or
macrosystem. One way to interpret this is the way in which digital spaces are designed to promote digital
engagement, norms, and practices. For instance, most versions of social media, apps, and online
platforms do not require a monetary payment by their users (Lupton, 2017). Instead, a sizeable portion of
these platforms maintain profit through the exchange of user data with corporate, commercial enterprises
seeking to improve their consumer base (Lupton, 2017). The public understanding of these exchanges and security risks is often limited, as terms and conditions or privacy agreements are frequently designed to be ignored or difficult to understand (Al-Alosi, 2017b; Child & Starcher, 2016; Lupton, 2017). However, this limited public knowledge of how their data and privacy is handled is a critical issue, as these practices contribute to individual vulnerability to privacy violations both at the government and corporate levels, but also at the individual level (Child & Starcher, 2016; Lupton, 2017; The Lancet, 2018). This ties into the world of data privacy and cybersecurity, which is the "art of protecting networks, devices, and data from unauthorized access or criminal use and the practice of ensuring confidentiality, integrity, and availability of information," (Department of Homeland Security, 2020). The limited public engagement in cybersecurity knowledge or practices are macrosystemic diatheses that complicate how public health nurses and researchers can help address healthy digital behavior, but it also sets a clear priority around the importance of setting digital boundaries, identifying risky or unsafe digital use, and helping survivors or at-risk groups for DDA prevent unwanted, harmful, or unhealthy digital experiences (Child et al., 2015; Lee & Cook, 2015; Polančič et al., 2011; Tokunaga, 2011; Trottier, 2012).

**Chronosystem Level.** A notable feature of White’s framework is the chronosystem, which was originally described as the “changes that occur over time between persons and their multiple environments,” (Campbell et al., 2009). Attributed to the work on the impact of partner violence on women’s mental health by Campbell, Dworkin, and Cabral (2009), the chronosystem is a unique addition of this ecological framework designed to recognize the cumulative, complex, and sometimes harmful exposures that adolescents experience early in their lives, which may affect their health, behavior, and development (Campbell et al., 2009; White, 2009). In diathesis-stress terminology, the chronosystem is best understood as how diatheses/resiliencies/stressors/safeguards all change and adapt over time and stage of development. The most salient TDV risk factors at the chronosystem level are a history of witnessing violence in the home and a history of childhood victimization of violence (Ds et al., 2010; Franklin & Kercher, 2012; Nikulina et al., 2017). Notably, a study by Nikulina and colleagues among n=284 US college students at an urban, public college in the Northeast US found that there was no cumulative/additive effect of these experiences, but rather what was influential were the type and severity of the experiences which occurred, such as severe physical or sexual violence in the home (Nikulina et
These findings emphasize the importance on not only studying the surface-level associations between broad categories or constructs, but rather a strategic, in-depth exploration into the contexts, dynamics, and intersectional lenses from which a given conflict or relationship may be experienced.

The chronosystem level requires a temporal perspective towards adolescent digital citizenship and DDA. However, there is limited evidence around how adolescent DDA experiences change over time. What is more readily observed in the literature are the ways in which social media exposures and evolving interface designs can lead to increasing disclosure of personal information, political engagement, and perceived social support (Bailey et al., 2019; Jackson, 2016). This draws on what Eastwick & Gardner (2009) coined as cyber-disinhibition, or the increasing “inappropriateness or uncharacteristic” digital behavior seen as a result of ongoing exposure to negative or inappropriate content online (Eastwick & Gardner, 2009). Studies around this concept indicate that, as individuals are exposed to the stressors of negative, harmful, or uncharacteristic digital social interactions, they are more likely to continue this behavior within their interactions with others online (Hinduja & Patchin, 2020; Zweig et al., 2013). Similar ideas have been voiced in research around radicalization through social media, as well as the more positive research around hashtag activism or recruiting social justice advocates through targeted methods via social media (Bailey et al., 2019; van Eerten et al., 2017; Yang, 2016). This has important implications for how micro- or macro-systemic social media discourses may be understood and measured, particularly with the vulnerabilities/diatheses that can lead to DDA-related mental health outcomes. These risk factors for DDA are in many ways similar to those for in-person TDV. Table 1.2 provides a breakdown of the evidence presented in this section to allow for an abridged comparison between DDA and TDV, using White’s model to organize concepts. Importantly, while there is some overlap between the two forms of dating abuse, the factors which contribute to them are distinctive.

Dissertation Research Overview

This dissertation research addresses several gaps in evidence and areas of limited understanding. For one, while trajectories of male- and female-identifying youth may converge or be similar later in life, the adolescent gender differences in the severity of reported depressive symptoms and outcomes are not well understood (Cyrus, 2017; Temple et al., 2016; Meyer, 2003; Teen Dating Violence, 2018; Zweig et al., 2013). As one example, despite the higher prevalence of depressive
disorders among female-identifying teens, male-identifying adolescents have been found to be over 3.5 times more likely to commit suicide (Allen et al., 2015). This dissertation research sought to understand the role of gender identity when cisgender teens are exposed to the stressor of DDA, which is known to impact adolescents of all ages, races/ethnicities, and gender identities (Caridade et al., 2019; Hinduja & Patchin, 2020; Reed et al., 2017). The exception being sexual forms of DDA which are more commonly experienced by those who identify as female, woman, or girl (Hinduja & Patchin, 2020). As scientific understanding of how DDA relates to adolescent psycho-social and behavioral wellbeing is still evolving, this mixed methods investigation into the complex gender differences and similarities observed among teens who experience DDA helps to build on an important foundation for future research, practice, and advocacy.

Purpose and Aims

The purpose of this mixed methods dissertation research was therefore to understand adolescent experiences of digital dating abuse and the association of these experiences with adolescent depressive symptoms and if the relationship was moderated by sex. A secondary data analysis of the baseline survey from the CDC funded research project called the myPlan Teen Health Study (THS) was performed for the quantitative portion of this dissertation (PI: Glass, 1R01CE002979-01). A randomized control trial of over 600 adolescents nationwide, the myPlan THS adapted a technology-based safety decision aid for teens in unhealthy dating relationships (Glass et al., 2021). The qualitative phase of this study used in-depth interviews to better understand adolescent perceptions on factors of vulnerability and resiliency that contribute to digital dating abuse experiences and associated mental health outcomes. Remote, semi-structured interviews and a virtual timeline activity were conducted among a sample separate of n=20 youth ages 15-17 years old representing six states in the East Coast and Midwest. There were three specific aims:

Aim 1. Assess the prevalence and frequency of digital dating abuse experienced by adolescents with recent dating violence experience and explore if these experiences differ by sex.

Hypothesis 1. The overall frequency of digital abuse will not differ significantly by sex.

Aim 2. Test the associations between digital dating abuse and adolescent symptoms of depression. Explore if these associations differ by sex.
Hypothesis 2. Experiences of digital abuse will be positively associated with depressive symptoms, such that as digital abuse frequency increases, controlling for other forms of dating violence, self-reported depressive symptoms will increase.

Hypothesis 3. The strength of associations between digital dating abuse and mental health outcomes will differ by sex, after controlling for sexual and physical dating violence.

Aim 3. Use qualitative data from in-depth interviews on adolescent perceptions on the psychobehavioral factors of vulnerability and resiliency that contribute to digital dating abuse and associated mental health outcomes to further explain quantitative findings in aims 1 and 2.

Conceptual Model

As discussed in the background and rationale, the diathesis-stress model was used as the conceptual model for this dissertation study due to its recognition of the inter-connectedness between adolescent experiences of stress (i.e. digital dating abuse), their psychosocial environment, perceptions of and responses to DDA, and mental health and behavioral outcomes that may compound the risk of recurrent or acute psychiatric symptoms (Chang et al., 2016; Colodro-Conde et al., 2018; Eisenlohr-Moul et al., 2018). Figure 3 provides an adapted visual representation of this model, taken from the work of Kinser & Lyon (2014) in their exploration of the feedback loop between certain stressors, depression, and related health outcomes (Kinser & Lyon, 2014).

Summary

As demonstrated in this chapter, this dissertation sought to address a critical gap in current evidence around DDA, adolescent mental health, and other forms of TDV. Chapter two will draw from this review of evidence but specifically explore female-to-male experiences of intimate partner and dating violence. As will be delineated in the third chapter, the methods for this research incorporated a rigorous, evidence-based approach to expand scientific knowledge on digital health and behavior among adolescents while also providing a foundational step for future research in this important area of public health nursing research, practice, and policy.
<table>
<thead>
<tr>
<th>Internal</th>
<th>External</th>
<th>Positive</th>
<th>Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal</td>
<td>External</td>
<td>Resilience/Adaptation</td>
<td>Diathesis/Vulnerability</td>
</tr>
<tr>
<td>External</td>
<td></td>
<td>Protective Factor/Safeguard</td>
<td>Risk Factor/Stressor</td>
</tr>
</tbody>
</table>
Table 1.2. Adapted Socio-Ecological Framework for Understanding the Evidence-Based Diatheses, Stressors, Resiliencies, and Safeguards Associated with Adolescent Dating Violence and Digital Dating Abuse

<table>
<thead>
<tr>
<th>SOCIO-ECOLOGICAL LEVEL</th>
<th>STRESSORS &amp; SAFEGUARDS</th>
<th>↔</th>
<th>VULNERABILITIES &amp; RESILIENCIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTERSECTING IDENTITIES (e.g. age, gender identity, or racial/ethnic identity)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHRONOSYSTEM (Time &amp; development)</td>
<td>• Developmental stressors (e.g., puberty or changes in appearance/physique)</td>
<td>• Patterns of in-person or digital abuse over time</td>
<td>• Psycho-behavioral or physiological changes or developments</td>
</tr>
<tr>
<td></td>
<td>• Frequency/sequence/ severity of events</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>• Adverse childhood experiences</td>
<td></td>
<td></td>
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<tr>
<td>MACROSYSTEM (Society/culture)</td>
<td>• COVID-19 pandemic</td>
<td>• Gender norms/attitudes/beliefs</td>
<td>• Adolescent norms and expectations</td>
</tr>
<tr>
<td></td>
<td>• Racial and gender inequalities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MESO/EXOSYSTEM (Peers/family &amp; community)</td>
<td>• Home/school environment</td>
<td>• Availability of support/resources</td>
<td>• Quality and accessibility of support system</td>
</tr>
<tr>
<td></td>
<td>• Geographic location/community</td>
<td>• Online exposures/environment</td>
<td></td>
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<td></td>
<td>• Means of communication &amp; digital access</td>
<td></td>
<td></td>
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<td></td>
<td>• Caregiving roles or leadership responsibilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MICROSYSTEM (Interpersonal relationship)</td>
<td>• Triggers/areas of disagreement</td>
<td>• Digital citizenship</td>
<td>• Type of violence/abuse</td>
</tr>
<tr>
<td></td>
<td>• Social connectedness</td>
<td>• Lack of trust, respect, or communication</td>
<td>• People involved and/or witnesses</td>
</tr>
<tr>
<td></td>
<td>• Peer influences</td>
<td>• Insecure attachment or over-reliance on partner</td>
<td>• Severity and duration of violence/abuse</td>
</tr>
<tr>
<td>CONFLICT (Interpersonal violence/abuse)</td>
<td>• Digital dating abuse</td>
<td>• Risk taking behaviors</td>
<td></td>
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<tr>
<td></td>
<td>• Offline dating violence</td>
<td>• Dating/social behaviors</td>
<td></td>
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<td></td>
<td>• Non-partner violence/abuse</td>
<td>• Self-care behaviors</td>
<td></td>
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<td></td>
<td>• Adverse childhood experiences</td>
<td>• Digital and personal safety awareness/behaviors</td>
<td></td>
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<tr>
<td></td>
<td>• Historical trauma</td>
<td>• Early onset of dating</td>
<td></td>
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<td></td>
<td>• Gender-based violence</td>
<td>• Poor anger management</td>
<td></td>
</tr>
<tr>
<td>INDIVIDUAL (Victim/Perpetrator or Witness)</td>
<td>• Gender/sexual minority</td>
<td>• Low self-image/esteem</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Racial/ethnic minority</td>
<td>• Low emotional intelligence</td>
<td></td>
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<tr>
<td></td>
<td>• Younger age/maturity</td>
<td>• Use/perpetration of violence</td>
<td></td>
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<tr>
<td></td>
<td>• Low socioeconomic status</td>
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</tr>
<tr>
<td></td>
<td>• Poor school performance</td>
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<td></td>
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<tr>
<td></td>
<td>• Earlier age of menarche</td>
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</tr>
</tbody>
</table>
Figure 1.1. Adapted Diathesis-Stress Model

INTERSECTING IDEntITIES

VULNERABILITIES & RESILIENCIES

STRESSORS

DATING VIOLENCE

DIGITAL DATING ABUSE

GENder ID

MENTAL HEALTH OUTCOMES

DEPRESSIVE SYMPTOMS

Qualitative Phase

Quantitative Phase
DIGITAL DATING ABUSE & ADOLESCENT MENTAL HEALTH
CH 1: INTRODUCTION

References


CH 1: INTRODUCTION


DIGITAL DATING ABUSE & ADOLESCENT MENTAL HEALTH
CH 1: INTRODUCTION


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CH 1: INTRODUCTION


DIGITAL DATING ABUSE & ADOLESCENT MENTAL HEALTH
CH 1: INTRODUCTION


Female To Male Partner Violence: A Systematic Review

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Abstract

This review assesses research on female-to-male partner violence (FMPV) between 2009-2019 to strengthen current and future research related to gender in terms of intimate partner violence experienced by those who identify as male, man, or boy. The primary outcome was to explore the prevalence of FMPV among heterosexual intimate or dating relationships in the US. The secondary outcome was to explore the key study and sample characteristics of these peer-reviewed articles to place findings into context. The databases PubMed, CINAHL Plus, Embase, and PsycINFO, were used to perform the search. Studies were included if they: 1) used quantitative or mixed method primary data collection in the US; 2) reported the prevalence of partner violence victimization among their sample; 3) disaggregated findings by gender and/or isolated male self-reported experiences; and 4) were published in English between 2009 to 2019. A total of 44 articles met inclusion criteria and are reported here. Results found that generalizable estimates for past-year physical FMPV were 13.4 – 18.4% among adolescents, 8.3 – 12% among university students, and 15.3 – 26.1% among adults. Generalizable estimates of past-year sexual FMPV ranged from 32.9 – 46% among adolescents, 9.1-19% among university students, and 67.9 – 93.5% among adults. The most generalizable estimates for past year psychological FMPV among adolescents included 20.1 – 29.8% and around 15.3% for university students. Identifying the most generalizable estimates for past-year psychological FMPV among adult populations was challenged by the lack of nationally representative study samples within this age group. The high prevalence of FMPV across age groups and identified gaps in evidence in this review guide the concluding recommendations for current and future violence-related research.
1. Introduction

To date, most partner violence-related research has centered on men’s perpetration of violence against women. This began in the early 1970s, when political and academic movements emerged in the US and UK to address the unsettling number of women at risk for severe and lethal partner violence (Lawrence & Rieder, 2007; “Teen Dating Violence,” 2018). A gendered perspective on intimate partner violence (IPV) formed in conjunction with these warranted, transformative feminist efforts, and violence against women continues to be a priority today (Laskey, Bates, & Taylor, 2019; Lawrence & Rieder, 2007; White, 2009). However, the increasing diversity of gender identities represented among study samples in violence-related research has underscored the need for gender-sensitive health and safety responses to partner violence. While scientific investigation has predominantly focused on men’s perpetration of partner violence rather than their victimization, cisgender men are the only other gender identity (apart from cisgender women) that have been consistently represented in IPV literature over time. Their experiences of IPV have even been measured using a validated scale since IPV emerged as a topic of public health interest, as evidenced by the development of the prominent “gender-neutral” Conflict Tactics Scale in 1979 designed for both men and women (Straus et al., 1996; Straus, 1979). However, our understanding of men’s IPV experiences remains limited despite their regular recruitment into study samples. Although violence-related research in the late 1990s used the original CTS to measure partner violence among both men and women college students, findings from these studies were primarily used to fuel the scientific debate on gender differences in victimization and perpetration epidemiology rather than gain a nuanced understanding of the context or sequelae of abuse (Cascardi, Blank, & Dodani, 2019; Chapman & Gillespie, 2019; Straus et al., 1996). In later studies, many of which again used the revised or original CTS, discussions centered on violence among men in same-sex relationships – again placing focus on violence perpetrated by men (K. M, K. M, Edwards, & Sylaska, 2013; Regan, Bartholomew, Oram, & Landolt, 2002). This review therefore focuses on an area of limited understanding. In addition to countering the common myth that men and boys do not experience partner violence (Taylor, Joseph, & Mumford, 2017; White, 2009), this review assesses ten years of female-to-male partner violence (FMPV) research to better strengthen current and future scientific approaches to recruiting and measuring violence among those who identify as male, man, or boy.
Differentiation between sex and gender is warranted, as public health literature often uses gender and sex terminology interchangeably or inconsistently (Anderson, Wandrey, Klossner, Cahill, & Delahanty, 2017; Cornelius, Shorey, & Beebe, 2010). The term “male” in the health sciences is used to refer to individuals assigned male at birth and/or with male reproductive organs, hormones, and chromosomes, whereas the terms “man” or “boy” denote gender identity as a social construct’ (DiVietro et al., 2018). To account for inconsistencies in terminology in the studies reviewed, the term “male-identifying” will be used to encompass both the biological and social constructs to allow inclusion of those study samples who were only asked about their gender identity or sex, not both. Likewise, the term “female-identifying” will be used to encompass women, girls, or those who identified as female. The primary outcome of this review was the range of prevalence of female-to-male partner violence in a heterosexual intimate or dating relationship in US research published between 2009-2019. The secondary outcome was identification of the study measures, sampling methods, and sample characteristics of these peer-reviewed articles to place findings into context.

1.1 National FMPV Resources. There are several US national reporting systems which capture male-identifying self-reported experiences of partner violence. A recent review by Addington & Lauritsen (2021) provides a helpful overview of three prominent sources: National Crime Victimization Survey (NCVS) by the Bureau of Justice Statistics, the Center for Disease Control & Prevention’s National Intimate Partner and Violence Survey (NISVS), and the Uniform Crime Reporting (UCR) Program’s National Incident-Based Reporting System (NIBRS) (Addington & Lauritsen, 2021). These resources, developed by various federal justice and health authorities, measure trends in IPV differently and among specific sample populations. For instance, the NCVS by the Bureau of Justice Statistics (BJS) is used to identify violent crimes not being reported to law enforcement through an annual population based survey, and so their annual estimates of partner-related violence are considered an underestimate of true prevalence. In contrast, the NISVS, which is funded by the US Centers for Disease Control and Prevention (CDC) uses more nuanced measures to capture a range of IPV experiences not necessarily considered crimes both in the past year as well as over the lifetime (Panel on Measuring Rape and Sexual Assault in Bureau of Justice Statistics Household Surveys, Committee on National Statistics, Division on Behavioral and Social Sciences and Education, & National Research Council, 2014). Thus
the 2019 NCVS found that 1.2% of male-identifying individuals in the past year reported a violent crime from an intimate partner, whereas 2015 NISVS estimates found approximately 1 in 3 of male-identifying participants self-reported experiencing sexual, physical, or psychological violence by an intimate partner in their lifetime (Smith, Zhang, & Basile, 2018). Although female-identifying individuals in this population-based national survey were significantly more likely to experience a direct impact or injury as a result of their exposure to IPV (25.1% among women vs. 10.9% among men), approximately 10.9% of the n=10,081 male-identifying participants in the sample also reported an IPV-related impact (Smith et al., 2018).

1.2 Lifecourse Perspective. The inclusion of lifetime prevalence in the NISVS has helped IPV researchers and advocates to develop the now widely applied lifecourse perspective, which contends that prior exposure to violence (as victim or witness) can place individuals at risk for subsequent violent conflict (as victim or offender or both) within their intimate relationships. The lifecourse perspective has also highlighted the potential for IPV to occur at younger ages and among those in non-intimate, casual, or dating relationships. Repeated administration of the NISVS has established that individuals ages 18-24 are the most at-risk for IPV in the US among adults, and 55.6% experiences of sexual violence occur before the age of 25 (Smith et al., 2018). This emphasizes the need to understand abusive relationships during and before the adolescent and young adult life stage, and sub-specialties of inquiry that have emerged around teen dating violence (TDV) have helped to better understand these age-related trends using tailored approaches to data measurement and collection. National reporting systems such as the Youth Risk Behavior Survey (YRBS) allow for ongoing epidemiological assessment of IPV prevalence among youth (Basile et al., 2020). In 2019, approximately 12.2% of students grades 9-12 in the YRBS (N=13,677) reported ever experiencing any type of dating violence, with an average of 8.8% in the past 12 months (Basile et al., 2020). This review therefore organizes findings of FMPV prevalence based on whether they pertain to adult (approx. 18+ years), young adult (approx. 18-24), or adolescent (approx. 13-17 years) populations. Importantly, the sample age range for these groups is approximate and occasionally overlaps due to inconsistencies in how age groups are conceptualized and reported. Prevalence by race/ethnicity also is important to consider. In their secondary analysis of YRBS data from 2013-2017, the study by Fix, Nava, and Rodriguez (2021) found that self-reports of dating partner
violence were highest among non-White youth (Fix, Nava, & Rodriguez, 2021). This aligns with other existing evidence (e.g. Cho & Kim, 2012; Morales-Aleman et al., 2014; Lipsky et al., 2012) and underscores the need for greater representation of non-White racial/ethnic identities in violence-related research.

2. Methods

2.1 Search Strategy and Keywords. The keywords and search strategy for this review were refined under the guidance of an informationist at the Welch Medical Library at Johns Hopkins University. The databases PubMed, CINAHL Plus, Embase, and PsycINFO were searched for studies between 2009 to 2019. Results of the initial database search were uploaded into the online resource Covidence (“Covidence,” n.d.), which provided an accessible and efficient platform for two reviewers to perform title and abstract screening prior to data extraction. To ensure the scope and nature of the search was appropriate, the protocol and search terms for this review were adapted from the approach of previous reviews on intimate partner and dating violence (Amanor-Boadu et al., 2011; Carroll et al., 2011; Cascardi & Muzyczyn, 2016). A common challenge in measuring IPV is the lack of standard measures or definitions with which to document, study, or report the issue. In the aforementioned NISVS, IPV is defined as psychological abuse, sexual harassment, coercive control, stalking, physical violence, sexual violence and reproductive coercion by a dating or intimate partner (Foran, Slep, & Heyman, 2011; Breiding et al., 2015). To be inclusive of non-committal relationships that are romantic or sexual in nature, the term “dating partner” was used in the search and defined using the CDC’s characterization of a dating partner, which includes any “person with whom one has a close personal relationship that can be characterized by the following: emotional connectedness, regular contact, ongoing physical contact and/or sexual behavior, identity as a couple, and familiarity and knowledge about each other’s lives,” (Allen & Swan, 2009). Recognizing that most studies do not exclusively examine victimization among male-identifying participants, this review further considered studies which reported bidirectional or mutual aggression within heterosexual dating relationships, specifically isolating what the males in those samples reported in order to assess possible insight into FMPV trends.

The following search terms were used to perform the search in PubMed and subsequently adapted for entry in all other databases: (((“Intimate Partner Violence”[Mesh] OR “partner violence” OR

A PRISMA diagram of the search is provided in Figure 2.1. A total of 9079 articles were identified in the initial search. After 4253 duplicates were removed, title and abstract screening were performed by two authors (R. Kennedy and C. Emezue). To ensure internal consistency, the two independent reviewers screened the first 120 abstracts to assess level of agreement. Once 88% agreement was reached, the remaining titles and abstracts were divided evenly between reviewers to be screened independently.

2.2 Inclusion & Exclusion Criteria. To be included in the review, articles had to meet the following criteria: 1) use quantitative or mixed method primary data collection in the US to measure and report the percent prevalence of female-to-male physical, psychological, verbal, sexual, or cyber abuse in dating or intimate relationships; 2) disaggregate findings by gender and/or isolated male-identifying self-reported experiences; and 3) be published in English in a peer-reviewed journal between 2009–2019.

After review, 393 full-text articles were excluded for the following reasons: analysis outside of scope of interest (n=114); study design did not meet inclusion criteria (n=67); publication not a peer-reviewed article (n=49); did not measure female-to-male partner violence (n=39); duplicate study samples (i.e. multiple articles reporting on the same study/sample population) (n=31); measured violence outside of a dating or intimate partner relationship (n=27); written in a language other than English (n=15); or conducted outside of the US (n=50). Those that did not use an analytic method applicable to this review most often did not disaggregate their findings by gender identity, did not use percent prevalence to report findings, only reported perpetration prevalence, or only reported the findings of same sex or male-to-female violence. Excluded study designs were most often those using secondary analyses of large national studies such as the Youth Risk Behavior Survey or the National Longitudinal Study of Adolescent to Adult Health. Further, 49 studies were excluded because they were dissertations or presentations at conferences. Other reasons for study exclusion were lack of adequate measures to capture FMPV, for example using a single question to establish the presence or absence of partner violence (Fair & Vanyur, 2011).
2.3 Data Compilation and Organization. Matrices were used to organize findings, allowing for an extraction of study data on prevalence statistics, types of violence measured, sample demographics, and FMPV measurement tools. Tables were grouped according to study FMPV measurement type and timeframe, as well as prevalence by age group. Towards the secondary outcome, additional matrices were developed to explore the sample characteristics and measures of included sources.

3. Results

3.1 Study characteristics. A total of 35 articles met inclusion criteria for extraction, each representing a separate study. Table 1 reflects all included articles, the forms of FMPV measured in each, sampling methods, as well as the timeframe (e.g. past year or lifetime) of the violence being reported.

3.1.1 Study designs. Six studies (17.1%) were longitudinal in design (Coker et al., 2016; Cutbush, Williams, Miller, Gibbs, & Clinton-Sherrod, 2018; Hensel et al., 2018; Iverson, Vogt, Maskin, & Smith, 2017; McMahon et al., 2017; Narayan, Englund, Carlson, & Egeland, 2014; Ybarra et al., 2016). However, the majority (n=29, 82.9%) of studies were cross-sectional. N=4 (9.1%) of these were mixed methods studies that used qualitative data collection to supplement and contextualize their examination of cross-sectional survey quantitative data (Ames, Cunradi, Duke, Todd, & Chen, 2013; Baker & Helm, 2011; Carroll et al., 2011; Rhodes, Houry, Cerulli, Straus, Kaslow, McNutt, et al., 2009).

3.1.2 Measurement. The most commonly used scale to measure male-identifying participants’ experiences of FMPV was the Revised Conflict Tactics Scale (CTS-2) (Straus et al. 1996). Table 2.1 shows that three studies (6.8%) used the full 78-item CTS-2 questionnaire, 13 (36.4%) used/adapted select items from the CTS-2, and three others (6.8%) used the original Conflict Tactics Scale (CTS) developed in the 1970s (Straus, 1979). The CTS and CTS-2 instruments were used among all age groups, with the physical violence sub-scale used more than any other subscale. Some of the other validated instruments included: the Abuse Assessment Screen (n=1) (Soeken, McFarlane, Parker, & Lominack, 1998); the Women’s Experiences With Battering (WEB) scale (n=2) (Smith, Earp, & DeVellis, 1995); the Sexual Experiences Survey (n=1) (Foshee et al., 1998); the Safe Dates Dating Abuse Scale questionnaire (n=3) (Foshee et al., 1998); the Youth Risk Behavior Survey (YRBS) (n=2) (Centers for Disease Control and Prevention, 2019); the Humiliation, Afraid, Rape, Kick (HARK) questionnaire (n=1) (Sohal, Eldridge, & Feder, 2007); Electronic Teen Dating Violence scale (n=1) (Glauber & Picard, 2007);
the Severity of Violence Against Women Scale (SVAWS) (n=1) (Marshall, 1992a); the George Washington University Universal Violence Screening Protocol (n=1) (Dutton, Mitchell, & Haywood, 1996); and the Sexual Coercion in Intimate Relationship Scale (SCIRS) (Goetz & Shackelford, 2010). Most studies used a composite of one or more instruments to strengthen their assessment of partner violence trends across sexes/gender identities or sub-types of FMPV. For instance, Harland and colleagues (2018) used the Abuse Assessment Screen (AAS) to assess for physical and sexual violence among their sample and used the WEB scale to determine the prevalence of psychological/emotional abuse (Harland, Peek-Asa, & Saftlas, 2018). Composites are chosen to address issues of length (the AAS is short) and validity.

Twenty-six studies (71.4%) measured more than one form of FMPV. When disaggregated by sub-type, physical violence was the most frequently reported form of FMPV (n=31, 88.6%), followed by sexual (n=20, 57.1%) and psychological (n=19, 54.2%) violence. To demonstrate macro trends in partner violence, 11 studies (31.4%) combined all forms of FMPV into one category and reported an aggregate estimate of any/multiple forms of FMPV in addition to their sub-scales. The following discussion does not include these aggregate estimates and instead focuses on physical, sexual, psychological, and other forms of FMPV. Past year FMPV prevalence was measured in over 60% of studies (n=22), followed by lifetime prevalence (n=4, 11.4%), including one study that examined both past-year and lifetime prevalence (DiVietro et al., 2018). Past 3 months prevalence was measured by 3 studies (Dick et al., 2014; McNaughton Reyes et al., 2018; McNaughton-Reyes, Foshee, Chen, & Ennett, 2017) and past 6 months prevalence were each measured by four studies (Cascardi & Muzychyn, 2016; Coker et al., 2016; Cutbush et al., 2018; Iverson et al., 2017). One study by Bonomi and colleagues (2013) took a unique approach by asking two university student samples (one convenience n=288; the other a simple random sample n=297) about their recall of conflict with a dating partner between ages 13-19 (Bonomi et al., 2013). As Hensel et al. (2018) argue, the prevalence and the recall of events during adolescence are not as readily compared due to the challenge of identifying and recalling instances or patterns of violence over a lifetime, particularly if they were traumatic (Hensel et al., 2018). Therefore, both between past-year and lifetime estimates are provided where possible for each sub-type of FMPV discussed below.

3.2 Sample characteristics
Fifteen (42.9%) studies used convenience sampling to survey participants, n=7 (20%) used purposive sampling, and n=12 (34.3%) used either stratified, cluster, or simple random sampling. Of the four studies that used random sampling methods, two were focused on adolescents (Haynie et al., 2013; Ybarra et al., 2016) and the other two were specific to military populations (Bartlett, Iverson, & Mitchell, 2018; Iverson et al., 2017). The heavy reliance on convenience and purposive sampling and often context-specific nature of the sampling population severely limits the generalizability of findings for over 60% of the studies in this review.

### 3.2.1 Sample size and gender distribution

Total sample size for all articles ranged from 72 (Hensel et al., 2018) to 42,744 individuals with a median sample size of 616 (Coker et al., 2016). Two studies recruited over 10,000 individuals, contributing to the wide range of sample sizes: Coker et al. purposively sampled n=14,190 high school students in 2014 (Coker et al., 2014); Debnam et al. (2016) recruited a purposive sample of n=26,873 high school students (Debnam et al., 2016). These robust sample sizes aside, the remaining studies recruited an average of 345 male-identifying and 424 female-identifying participants into their samples. The over-distribution of female-identifying participants is common within violence-related research, particularly when looking at sexual forms of partner violence. However, male-identifying participants were less than 40% of total sample sizes in 18 out of the 39 studies that had mixed gender samples. Illustrating why this is important, the study by Bonomi and colleagues (2013) took their analytic sample from two back-to-back studies performed by their research team at the same higher education institution, with the first study consisting of a university-wide convenience sample (n=297) and the other a purposive sample (n=288) within the predominantly female-identifying Human Development and Family Studies Department (Bonomi et al., 2013). Through this method, Bonomi et al. found that an uneven distribution of sample gender identities led to wide confidence intervals and diminished precision of partner violence estimates for their male-identifying participants (Bonomi et al., 2013).

### 3.2.2 Age and context distribution

Studies pertaining to adolescents or young adults sampled heavily among student populations, including n=8 among adolescents at middle/high schools and n=13 among university/college students. Five studies sampled patient populations (n=2 adolescent/pediatric, n=3 adult) at various health facilities, clinics, or hospitals. Four studies sampled adult military or veteran
individuals, and 11 others consisted of community samples of adult couples, households, or families but were often contextually-bound. No studies examined the prevalence of FMPV among male-identifying young adult civilians not enrolled at a university/college. More specifically, all 13 studies examining FMPV trends among young adults recruited among students at higher education institutions, and no studies of individuals over 17 years old disaggregated prevalence statistics by whether participants were enrolled in school. Studies among adult populations were similarly context-specific: n=3 sampled military/veteran populations (Bartlett et al., 2018; Crouch et al., 2009; Iverson et al., 2017); n=3 patients in clinical settings (Chang et al., 2011; DiVietro et al., 2018; Rhodes et al., 2009); n=2 industrial/union workers (Ames et al., 2013; Cunradi, Bersamin, & Ames, 2009); and n=4 community-based populations.

3.2.3 Race and ethnicity distribution. Another sampling gap was the limited inclusion of diverse, minority racial/ethnic identities. Table 2.2 outlines the sampling methods, locations, sample size, and race/ethnicity distribution of all reviewed studies, organized by age group and context. Two-thirds (n=23) of studies had majority (50% or more) White/Caucasian individuals in their samples. Eleven studies had more than 80% of their sample identifying as White/Caucasian, and 4 studies were under-powered to look at differences between minority racial/ethnic identity participants, thus grouping them into one “Non-White” category (Chang et al., 2011; Coker et al., 2016; Cornelius et al., 2010; Kar & O’Leary, 2010). This points to the need not only for more representation of minority racial/ethnic identities among study samples, but also the need for more rigorous, culturally sensitive and inclusive study protocols, measures, and methods. The non-White racial identities/ethnicities that were represented included Hispanic/Latino/ Latina, Black/African American, and Asian/Asian American/Pacific Islander. Three studies had majority Hispanic/Latino/Latina participants in their samples (Ferguson & Ferguson, 2011; McMahon et al., 2017; McNaughton-Reyes et al., 2017). For Ferguson and Ferguson (2011), identifying as Mexican-American was required for inclusion in their study of violence among their convenience sample of n=151 Hispanic/Latino/Latina undergraduate students (Ferguson & Ferguson, 2011). Two studies had majority Black/African American participants (Hensel et al., 2018; Rhodes, Houry, Cerulli, Straus, Kaslow, McNutt, et al., 2009). One of these studies recruited from recently adjudicated male-identifying perpetrators of partner violence (Crane, Schlauch, & Eckhardt, 2015), while the other recruited from youth in a low-/middle-income urban setting (Hensel et al., 2018), demonstrating a considerable gap.
in our understanding of African American men and boys’ experiences of FMPV. Only one study by Baker and colleagues (2011) focused exclusively on Asian/Asian American individuals, with 44.26.8% of their purposive sample of n=881 Hawaiian youth identifying as Filipino, 26.8% Native Hawaiian, 6.9% other Pacific Islander, 9.9% non-Filipino Asian/Asian American, and 11.4% other (Baker & Helm, 2011). This distribution of racial/ethnic identities across and within studies demonstrates the critical need for greater inclusion and diversity within violence-related research, as well as recruiting across age groups, contexts, and gender identities to ensure that scientific understanding around these issues advances for people with multiple intersecting identities.

3.3 Physical FMPV

Table 2.2 provides a quick reference to the most generalizable ranges of FMPV by type and age group, as found in the n=31 included studies this review. Regarding physical FMPV, the most generalizable estimates within each age group were 7-14% past three-months among adolescents, 11.3-12.4% past six-months among university students, and 16.7-29.8% past year among adult samples (Table 2.4). N=31 articles examined male-identifying individuals’ experiences of physical FMPV (Table 2.4), organized here and in Table 2.3 by age group for better comparison.

3.3.1 Adolescent samples. Past-year physical FMPV ranged from 13.4 – 39.2% among adolescent studies. The more generalizable range of past-three-month physical FMPV is 7-14%, which comes from a study recruited a diverse convenience sample of n=3068 students grades 8-10 from three counties in North Carolina (34% Black/African American, 24% Hispanic/Latino, 26% White/Caucasian) (McNaughton Reyes et al., 2018). McNaughton Reyes et al. (2018) found that 14% of their male-identifying participants (n=1420) reporting moderate physical FMPV (measured as being pushed, dragged, shoved, kicked, slapped, scratched, or having an arm twisted); and 7% reported severe physical FMPV (measured as being hit with a fist/hard object, beat up, or assaulted with a knife/gun) (McNaughton Reyes et al., 2018). Similar estimates were found by the two largest studies within this age group, although the choice of measurement and predominantly White/Caucasian samples limits comparability and generalizability. Both Coker et al. (2014) and Debnam et al. (2106) asked their participants only one question about being hit, slapped, or physically hurt on purpose by a dating partner, therefore their estimates likely reflect a wide range of possible physical altercations (Coker et al., 2014; Debnam et al.,
Bonomi et al. (2013) approached two separate samples ages 18-21 at the same university (one n=297 simple random sample from the entire student body, the other a n=288 convenience sample within the Human Development and Family Science Department), asking about their recall of conflict with a dating partner between ages 13-19 (Bonomi et al., 2013). They found that 12.1% of n=140 male-identifying participants in their study reported experiencing physical FMPV over the course of their adolescence (ages 13-19), consistent with the findings of these high school-based studies (Bonomi et al., 2013). The more robust instrument used strengthens the argument that at least 1 in 10 adolescent boys/male-identifying youth have experienced some form of physical dating violence. Adolescents in studies among more high-risk, culturally-specific, or vulnerable populations reported higher rates of physical FMPV, ranging from 26.4-45%, although more research is needed in this area to better understand these experiences. For example, Narayan and colleagues (2014) collected data among participants with histories of exposure to interparental violence enrolled in the ongoing longitudinal Minnesota Longitudinal Study of Risk and Adaptation (Narayan et al., 2014). Using adapted measures from the original Conflict Tactics Scale (Strauss, 1979), this study among n=182 predominantly low-income, White/Caucasian youth in Minnesota found n=37 (45%) out of their n=83 male-identifying participants reported any physical FMPV over the past two years, and n=48 (26.4%) reported severe conflict with dating partners (Narayan et al., 2014).

Two studies examined adolescent experiences of physical FMPV over their lifetime, finding a wide range of 19.4-44.2%. Carroll et al. (2011) recruited a convenience sample of n=327 adolescent male-identifying patients ages in a pediatric emergency room in a hospital serving low income and vulnerable populations and found that 44.2% of their participants reported lifetime physical FMPV (Carroll et al., 2011). By contrast, Ybarra and colleagues (2016) recruited a random online sample of n=1586 youth-caregiver (e.g. parent-child) pairs and found that 19.4% of the heterosexual male-identifying participants (n=539) ages 14-21 reported physical FMPV over their lifetime (Ybarra et al., 2016). Given that Ybarra et al. (2016) recruited randomly within a community-based sample rather than the high-risk clinical setting of the study by Carroll and colleagues, the lower estimate of 19.4% lifetime physical FMPV prevalence is likely more generalizable to male-identifying adolescents as a whole (Carroll et al., 2011; Ybarra et al., 2016). Ybarra et al. (2016) further observed a correlation between physical FMPV...
prevalence and age, as 6.5% of 14-15 year old male-identifying participants (n=99) reported lifetime physical FMPV, 14.7% of 16-17 year olds (n=191), and 26.5% of the 18-21 years olds (n=249) in this study (Ybarra et al., 2016). This aligns with the findings of this review, as studies among university students/young adults show a considerable increase in past-year physical FMPV.

3.3.2 University student samples. The 10 studies among university students/young adults found 32.9 – 46% past year physical FMPV. A lower range of 11.3 – 12.4% is the more generalizable estimate of past six months physical FMPV for this age group. The higher range of past-year physical FMPV is more salient to the n=5 studies among convenience samples of predominantly White/Caucasian, undergraduate sociology/psychology students that found a range of 32.9 – 44% past year physical FMPV when measured by the CTS-2 (Amanor-Boadu et al., 2011; Cornelius et al., 2010; Drouin, Ross, & Tobin, 2015; Próspero et al., 2010; Zapor et al., 2017). In comparison, a stratified random sample of n=7111 undergraduate students in Kentucky, recruited as part of the larger Greendot project by Coker and colleagues (2016) likewise used the CTS-2 but found much lower estimates of 11.3% (intervention site) and 12.4% (control site) physical FMPV among the male-identifying participants in their predominantly White/Caucasian sample over the past six months (Coker et al., 2016). The lower prevalence found within the Coker et al. (2016) study is likely attributable to their larger sample size, use of random sampling methods (i.e. their sample is more likely representative of the larger student body), and use of the past semester (approx. 3-4 months) timeframe rather than past year prevalence (Coker et al., 2016). While this is the more reliable, generalizable estimate compared to the high ranges found among psychology/sociology undergraduate students, the lack of randomized studies available for comparison limits certainty and points to a need for more research among this demographic using randomized sampling and/or nationally representative sample populations.

Studies that recruited predominantly among sociology/psychology students differentiated between moderate and severe forms of physical FMPV, and all found unusually high physical FMPV prevalence, suggesting that the experiences of these students may not be reflective of the larger university student population. For instance, Próspero et al. (2010) recruited a convenience sample of n=370 undergraduate, male-identifying, predominantly White/Caucasian (79.4%) university students from psychology and business courses and likewise used the CTS-2, finding 44% reported past year physical
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FMPV (Próspero et al., 2010). Drouin et al. (2015) likewise recruited a convenience sample of n=480 undergraduate, predominantly White/Caucasian (83%) students enrolled in psychology courses at a Midwestern, mid-sized university in order to survey this demographic on their experiences of sexting coercion and other forms of sexual and physical dating aggression (Drouin et al., 2015). Using the Severity of Violence Against Women Scale (SVAWS) (Marshall, 1992b), a scale inclusive of both minor, moderate, severe, and threats of violence, Drouin et al. found that 46% (n=74) of the n=160 male-identifying participants in their sample reported past-year physical FMPV (Drouin et al., 2015). The use of the SVAWS limits somewhat the comparability of this study to the others within this age group, although its estimates are not much higher than other studies among undergraduate psychology students. The discrepancy in physical FMPV between the more general university student samples (11.3 – 12.4% past 6 months) and those among psychology/sociology students (32.8-46% past year) could be attributed to the university and department-specific context of these young adult studies, which is subject to the unique legal, cultural, and regulatory dynamics of higher education (Graham, Mennicke, Rizo, Wood, & Mengo, 2019; Langford, n.d.). More interdisciplinary, multi-departmental university research would help to understand whether these differences are rooted in individual-level risk factors, departmental factors, variations in study design, and/or contextual differences.

3.3.3 Adult samples. The 12 studies among adult populations found a wide range of 7% past year physical FMPV among 642 of the male-identifying veterans (total n=840) with a history of trauma exposure (Bartlett et al., 2018) to 42.7% past year FMPV among the n=330 male-identifying participants in a convenience sample of n=330 heterosexual, majority White/Caucasian (81.2%) couples in New York City (McMahon et al., 2017). 16.7 – 29.8% past year physical FMPV is more reliable range among adults samples. The most generalizable finding comes from a study by Kar & O’Leary (2010) which found that 29.8% reported past year physical FMPV among their randomly digitally dialed sample of 453 predominantly White/Caucasian young couples (total n=906) (Kar & O’Leary, 2010). It’s unclear why there appears to be a higher prevalence of physical FMPV among adult male-identifying samples than adolescent or university-student samples. This is particularly true for clinical samples, which reported the highest prevalence of physical FMPV within this age group and across all age groups. A concerning 42.7% past 3 months physical FMPV was reported by n=330 male-identifying participants in a study by
McMahon et al. (2017) among n=330 HIV negative, drug-using couples in a separate clinical trial for HIV interventions, and the clinical, high-risk demographic of this study sample most likely explains why estimates among this convenience sample are so high (McMahon et al., 2017). High rates of physical FMPV were also found study by DiVietro et al. (2018), a study that used the full 78-item CTS-2 and found that 38% of n=163 male-identifying participants in their majority White/Caucasian convenience sample of adults (total n=250) over 17 years old in a trauma center reporting lifetime physical FMPV, and 30.7% past year physical FMPV (DiVietro et al., 2018).

Studies among military and veteran sample populations reported much lower past-year physical FMPV prevalence than other adult samples, with Bartlett et al. (2018) reporting the lowest estimates of past-year physical FMPV prevalence of 7% (Bartlett et al., 2018). However, these estimates were more reflective of adolescent and university student samples. In their study among a convenience sample of n=1035 US Navy personnel during second year of service at the Recruit Training Command in Illinois, Crouch et al. (2009) found that 23.8% male-identifying participants reported moderate past year physical FMPV and 16.7% reported severe past year physical FMPV reported by male participants in a study among Navy personnel (Crouch et al., 2009). The lower prevalence of these studies may be attributed to response bias (i.e. shame/stigma associated with these experiences within the military culture/context), lack of anonymity or distrust of anonymity (i.e. fear of the consequences of misdemeanor domestic violence offenses on a military career/reputation), and/or recall bias (i.e. trauma-related gaps in the memory/recall) (Williston, Taft, & VanHaasteren, 2015).

3.4 Sexual FMPV

As shown in Table 2.5, a total of 19 studies measured sexual FMPV, which ranged from 0.7 – 39.8% overall prevalence. The most generalizable estimate of these studies found 8.3 – 12% lifetime sexual FMPV among adolescent samples, 10.5 – 13.4% past semester experiences among university students, and 6.7 – 15.3% past year experiences among adult samples (Table 2).

3.4.1 Adolescent samples. Among all 7 adolescent studies, sexual FMPV prevalence ranged from 0.7 – 39.3%, with a more generalizable range of 8.3-12% lifetime sexual FMPV among adolescent studies (Baker & Helm, 2011; McNaughton Reyes et al., 2018; McNaughton-Reyes et al., 2017; Ybarra et al., 2016). The two most generalizable estimates in this age group come from the Ybarra et al. (2016) and
McNaughton Reyes et al. (2018) studies. The study by Ybarra et al. (2016) recruited a random online sample of n=1586 youth ages 10-15 years old and found that 8.3% of their n=774 male-identifying participants reported lifetime sexual FMPV (Ybarra et al., 2016). The 2018 McNaughton Reyes et al. study recruited a convenience sample of n=3068 public school students in North Carolina, and the large sample size helps to build confidence in their finding of 12% lifetime prevalence of sexual FMPV despite the limited generalizability of their convenience sample (McNaughton-Reyes et al., 2017). Both studies by McNaughton Reyes et al. (2017 & 2018) used the 14-item Safe Dates Dating Abuse Scale to measure self-reported experiences of forced sex or forced sexual acts, finding similar rates of 8.3-12% lifetime sexual FMPV and 10% past three months sexual FMPV, respectively (McNaughton Reyes et al., 2018; McNaughton-Reyes et al., 2017). Two studies among racial/ethnic minorities also fell within the expected range of 8.3 – 12% (Baker & Helm, 2011; McNaughton Reyes et al., 2017).

Three studies found estimates of sexual FMPV that were outliers to the more generalizable 8.3-12% range. The lowest prevalence estimates of sexual FMPV were found among Coker et al (2014) and Hensel et al. (2018), both of whom used study-specific measures and found only 1.5% and 0.9% of their purposively sampled male-identifying participants reported sexual FMPV (Coker et al., 2014; Hensel et al., 2018). Importantly, Coker et al. (2014) sampled among high school students and collected self-reports of past-year sexual FMPV using only one question on whether they had been physically hurt as a result of unwanted sex or physical violence by a partner (Coker et al., 2014). This is a narrow construct and severe form of sexual FMPV, limiting comparability to other studies and potentially conflating sexual abuse with physical injury, thus complicating the interpretation of this finding (Coker et al., 2014). Hensel et al. (2018) sampled among individuals in lower and middle-income areas of Indianapolis, Indiana who had participated in another longitudinal study and asked about lifetime sexual FMPV in terms of sexual coercion, which they measured in terms of being paid for sex, being forced to have sex, or sexual coercion (getting mad/threatening to break up if sex is withheld) (Hensel et al., 2018). Severe sexual assault prevalence was therefore lower when using a less stringent measure than the CTS-2, but the context-specific nature of this study is another possible contributor (Hensel et al., 2018). The only study in this age group that used the CTS-2 to measure sexual FMPV was by Carroll et al (2011), who surveyed convenience sample of n=327 patients at one urban pediatric emergency department and found a much
higher prevalence of sexual FMPV than other adolescent studies, with 39.3% of their n=92 male-identifying youth reporting lifetime and 34.2% past year prevalence of sexual FMPV (Carroll et al., 2011). Importantly, data collection for this study collected data using an in-person approach, where research assistants (RAs) trained in trauma-informed care consented and surveyed participants in a private, one-on-one clinical room in the emergency department and were present while the participants took the written survey should they have any questions or needed support (Carroll et al., 2011). It’s unclear whether the unusually high prevalence of 34.2 – 39.3% sexual FMPV is attributed to the of emergency room context, the study’s urban or geographic environment, the CTS-2 measure used, and/or the study methods (Carroll et al., 2011). Regardless, their approach warrants attention and highlights the importance of creating a trusted, safe space for male-identifying youth to disclose their experiences of sexual FMPV (Carroll et al., 2011).

3.4.2 University student samples. The 6 studies among university/college students found a similarly wide range of 10.5 – 39.8% sexual FMPV, with a more generalizable range of 10.5-13.4% sexual aggression, coercion, or forced sex. In their randomized control trial testing the Green Dot bystander intervention among university students, Coker and colleagues (2016) found that 10.5% of the male-identifying participants in their intervention study site (total n=2979) and 13.4% in the control site (total n=4123), reported unwanted sex which was measured by asking about experiences of coerced sex, being too drunk/high to consent for sex, physically forced sex, and sexual harassment over the past semester (Coker et al., 2016). The large stratified random sample recruited among first-year university students from three large public universities in this study was the strongest sampling method implemented within this age group and therefore more likely to reflect the general population of university students.

An example outlier to the expected 10.5 – 13.4% range was the high prevalence of sexual FMPV among n=417 college men ages 18+ enrolled in a psychology class at one university sampled by Anderson and colleagues, who used the Sexual Experiences Survey and found that 39.8% of their cisgender, heterosexual male-identifying participants reported unwanted sexual contact, sexual coercion, and/or rape (Anderson et al., 2017). Drouin, Ross, & Tobin (2015) used the Sexual Coercion in Intimate Relationships Scale (SCIRS) (Goetz & Shackelford, 2010) to measure sexual coercion and, uniquely, sexting coercion among their convenience sample (n=480 total, n=160 males, n=320 females) of students
in psychology courses at one midwestern mid-sized university (Drouin et al., 2015). As will be discussed in the section on digital forms of FMPV, they also found 17% of the n=160 male-identifying participants reported having engaged in sexting when they did not want to in (Drouin et al., 2015). The two studies that used the CTS-2 to measure sexual FMPV among this population also found higher than usual sexual FMPV prevalence (Fair et al., 2011; Próspero et al., 2010). As will be discussed, prevalence of psychological FMPV was much higher than any other forms for all age groups, which may explain why this finding is so much higher than others that looked at sexual coercion. The inclusion of unwanted sexual advances or unwanted sexual touching are important conceptual distinctions that likely contributed to the higher prevalence findings of Anderson et al. (2017) and Prospero et al. (2010) (Anderson et al., 2017; Próspero et al., 2010). Additionally, the instruments used or study methods/designs may also have been a factor, such as with Fair et al. (2011) who used the CTS-2 and only looked at experiences of sexual coercion (Anderson et al., 2017; Fair et al., 2011; Próspero et al., 2010).

3.4.3 Adult samples. Seven studies were conducted among adult populations, with again a wide range of 1.03-25.8% sexual FMPV (Bartlett et al., 2018; Chang et al., 2011; DiVietro et al., 2018; Iverson et al., 2017; Kar & O’Leary, 2010; McMahon et al., 2017; Rhodes et al., 2009). The only community-based sample in this age group was by Kar et al. (2010), which found the most generalizable estimate because they used random digit dialing to recruit couples who identified as young parents between ages 30-39 years old in one county and, using CTS-2 sub-scales, finding that 15.3% of male-identifying participants reported past year forced or coerced sex (Kar et al., 2010). Clinical studies were the most common among adult populations, widening (with caution) the expected range of past-year sexual FMPV to 6.7 – 15.3%.

Among the many outliers to this range, experiencing a forced or “unwanted sexual act” was reported among 4% of the Chang et al. (2011) study sample of n=428 men and women seeking behavioral health treatment at a medical facility in Pittsburgh (Chang et al., 2011). The differences in sample sizes or the measures used (Chang et al. 2011 measures used broad language like the CTS-2) may explain the discrepancies in the findings of these two clinical studies, but further research is needed to strengthen our understanding and screening of sexual IPV among male-identifying patients in the clinical setting (Bartlett et al., 2018; Chang et al., 2011; Rhodes, Houry, Cerulli, Straus, Kaslow, McNutt,
et al., 2009). The two studies with adult military/veteran populations found only 1.03% (Bartlett et al., 2018) and 4.1% (Iverson et al., 2017) reported sexual FMPV in the past year among their male-identifying participants (Bartlett et al., 2018; Iverson et al., 2017). These studies are fairly comparable in design and demographic, so it’s possible that this is an accurate reflection of sexual violence in the military/veteran community and suggests belonging to military culture may be a protective factor. However, military samples are often concerned about mandatory reporting unless there is assurance of anonymity, and the method of data collection may have produced more conservative estimates for both studies (Bartlett et al., 2018; Iverson et al., 2017). Similarly, DiVietro and colleagues (2018) used the CTS-2 and found considerably higher sexual FMPV prevalence (30% lifetime, 25.8% past year) among their convenience sample of trauma patients at one urban hospital in Connecticut (DiVietro et al., 2018). Importantly, this study collected both self-report survey and face-to-face screening data in a private clinical space with research assistants trained in IPV response and trauma-informed care (DiVietro et al., 2018). This likely contributed to their higher sexual FMPV prevalence, as well as their use of the CTS-2 to measure these experiences (DiVietro et al., 2018).

3.5 Psychological FMPV

The most prevalent form of FMPV reported by males was psychological or emotional violence, as measured in 17 studies (Table 2.6). Compared to other forms of partner violence, the prevalence of psychological FMPV was consistently high across all 17 studies, regardless of how this construct was measured or defined. The most generalizable estimate(s) of these studies found 15.2-16.5% past year/35.3-44% lifetime psychological FMPV among adolescent samples, 18.1-26.9% past semester psychological FMPV among university students, and 64.6-73.6% past six-month experiences among certain context-specific samples of adults.

3.5.1 Adolescent samples. Only 4 studies examined adolescent experiences of psychological FMPV, yielding a range of 15.3-52.5% past year and 35.3-44% lifetime psychological FMPV among their male-identifying participants (Baker & Helm, 2011; Coker et al., 2014; McNaughton-Reyes et al., 2017; Ybarra et al., 2016). Generalizable estimates for past-year psychological FMPV ranged from 15.2 – 16.5% (Coker et al., 2014; Haynie et al., 2013). For instance, Haynie et al. (2013) used the CTS-2 to measure past-year experiences of verbal psychological FMPV only (i.e. receiving insults, being sworn at,
or threatened) and found that 16.5% of the male-identifying participants in their nationally representative sample of n=2,203 10th grade students from 80 schools between 2009-2010 (Haynie et al., 2013). Two adolescent studies drew from community-based samples and measured psychological FMPV in terms of lifetime experience. This yielded a much higher estimate range, with McNaughton Reyes et al. (2017) finding 44% of their purposive sample of n=201 Latino youth in North Carolina reported experiencing psychological FMPV as measured by the Safe Dates scale although the timeframe was not specified (Foshee et al., 1996; McNaughton-Reyes et al., 2017). Ybarra and colleagues (2016) also used the Safe Dates Dating Abuse Scale to measure lifetime experiences (the original timeframe for this scale in Foshee et al., 1996) of psychological FMPV, finding 35.3% of the male-identifying participants in their random online sample (total n=1586, n=774 male-identifying and n=807 female-identifying youth) reported experiences of controlling/monitoring behavior, having their partner do something to incite jealousy, or being insulted/put-down in front of others (Ybarra et al., 2016). As the study by Ybarra et al. (2016) was the only one to use random sampling methods among a nationally representative, online sample, this is the most generalizable estimate of lifetime psychological FMPV among this age group in this review (Ybarra et al., 2016). The variations in how psychological FMPV is defined and operationalized among studies of adolescent partner violence limits comparability and generalization.

There were two outliers to these expected ranges. One was found by a study conducted in Hawaii by Baker and Helm (2011). This context-specific study found that 52.5% of the n=223 male participants in their predominantly Asian/Asian American and Native Hawai’ian/Other Pacific Islander high school students sample experienced past-year psychological FMPV in the form of emotional abuse, and 60.3% experienced monitoring/controlling behaviors (Baker & Helm, 2011). The study-specific measures used, as well as the unique cultural and racial/ethnic identities of the sample population, likely account for the unexpectedly high prevalence of psychological FMPV. Regardless, 52.5 – 60.3% past-year psychological FMPV is concerningly higher than the expected range for the national population, suggesting that more research are needed to understand trends in psychological FMPV among Asian/Asian American or Native Hawai’ian/Other Pacific Islander adolescents in Hawai‘i (Baker & Helm, 2011). Bonomi and colleagues found the other outlier to the expected range of past-year or lifetime adolescent psychological FMPV, with 56.4% of the 140 male-identifying students in their random sample
of students from one university (total n=585) reporting some experiences of psychological FMPV during their adolescence (ages 13-19) (Bonomi et al., 2013). Related and perhaps indicative, university students reported much higher rates of psychological FMPV than adolescents, and it’s possible that this study provides an important insight into the high prevalence of psychological FMPV observed after teens graduate (Bonomi et al., 2013).

### 3.5.2 University student samples

The 8 studies among university/college students found a high range of 18.1% past-year to 93.5% past semester psychological FMPV (Anderson et al., 2017; Bonomi et al., 2013; Coker et al., 2016; Cornelius et al., 2010; Fair et al., 2011; Ferguson & Ferguson, 2011; Próspero et al., 2010; Zapor et al., 2017). The more generalizable range within this age group was 18.1 – 26.9% past semester psychological FMPV. The measurement tools and methods used most likely caused results to overestimate actual trends in psychological FMPV. More specifically, the CTS-2 sub-scale had a considerable influence on measurement of psychological FMPV, thus questions often asked about this in terms of shouts/insults, property damage, threats of physical violence, and controlling/monitoring behavior (Straus et al., 1996). Cascardi and Muzyczyn (2016) recruited n=517 university students ages 18-21 and compared the CTS-2 to the Conflict in Adolescent Dating Relationships Inventory (CADRI), finding that the CTS-2 psychological sub-scale was conceptually distinctive from the CADRI psychological sub-scale (Cascardi & Muzyczyn, 2016). Girls and boys had unique patterns of agreement between the CTS-2 and the CADRI, and the CADRI psychological sub-scale more closely aligned with trends seen in the CTS-2 physical abuse sub-scale (Cascardi et al., 2019; Cascardi & Muzyczyn, 2016). When comparing the CADRI and CTS-2 findings of those who reported psychological FMPV, threats and emotional abuse were more likely to be endorsed on the CADRI whereas verbal and relational forms of psychological abuse (e.g. spreading rumors) were more frequently endorsed on the CTS-2 (Cascardi & Muzyczyn, 2016). This suggests that, although the instruments used were previously validated and frequently operationalized in violence-related research, there may be some outstanding issues with construct or criterion-related validity (i.e. convergent or discriminant validity) in how psychological FMPV is currently measured among this demographic.

Four other studies in this age group also used the CTS-2 to measure psychological FMPV but found very different prevalence estimates than the expected range of 18.1-26.9% past semester
prevalence identified above (Anderson et al., 2017; Fair et al., 2011; Ferguson & Ferguson, 2011; Prospero & Fawson, 2010). The highest estimate of psychological FMPV comes from a small (n=142) stratified random sample of students from one university in the Fair et al. (2011) study, of which 93.5% of the male-identifying participants (n=31) reported past year psychological FMPV (Fair et al., 2011). Fair et al. (2011) examined verbal forms of psychological abuse only, which they measured using 6 items from the CTS-2 (insults/shouts/spiteful remarks/physical or sexual put-downs/threats) and by removing any items related to nonverbal psychological aggression (Fair et al., 2011). The high prevalence found in this study may be attributed to the small convenience sampling design (thus increasing the margin of error and limiting reliability of findings), but, as the authors contend, these findings are not altogether different from other studies among this age group (Fair et al., 2011). In another small convenience sample, Ferguson & Ferguson (2011) recruited n=151 young adults from a Hispanic serving public university in the South, with 73.5% of their male-responding participants (n=73) reported past-year psychological FMPV (measured by the CTS-2) (Ferguson & Ferguson, 2011). The strength of this study is its focus on an under-represented demographic (Mexican American students in the Southern US), but this attribute also limits generalizability of findings (Ferguson & Ferguson, 2011). Both Cornelius and colleagues (2010) (n=173) and Zapor et al., (2017) (n=245) enrolled convenience samples of university psychology students and found similarly high rates (80% and 68.5%, respectively) of past-year psychological FMPV reported among their male-identifying participants (Cornelius et al., 2010; Zapor et al., 2017). Zapor and colleagues (2017) also examined psychological abuse that was mediated by technology, although more salient estimate to this section was the CTS-2 sub-scale they used to ultimately find that 68.5% of male-identifying students (n=143) in their majority White/Caucasian sample with a past-year experience of psychological aggression not including cyber abuse (Zapor et al., 2017).

3.5.3 Adult samples. Out of the 7 studies among adult populations that measured psychological FMPV, past year prevalence ranged from 6 – 89.7% among male-identifying participants (Bartlett et al., 2018; Chang et al., 2011; DiVietro et al., 2018; Esthappan et al., 2018; Foran et al., 2011; Iverson et al., 2017; McMahon et al., 2017). The more reliable estimates within this age group were 64.6 – 73.6% past six months psychological FMPV, although this high range is not necessarily generalizable and should be taken with caution. Iverson and colleagues (2017) recruited a stratified random sample of predominantly
White/Caucasian n=407 veterans and used the CTS-2 to ask about experiences of when their partner insulted, swore, shouted or yelled at; destroyed something belonging to me or threatened to hit them (Iverson et al., 2017). Nearly two thirds (64.6%) of the Iverson et al. (2018) sample reported psychological FMPV over the past six months using this more inclusive definition of psychological partner violence (Iverson et al., 2017). By comparison, the other more generalizable finding came from the study by DiVietro et al. (2018) among a convenience sample of n=250 patients over 17 (approx. 60% White/Caucasian) admitted to the Level 1 Trauma Center ED at Hartford Hospital, CT (DiVietro et al., 2018). DiVietro and colleagues (2018) used the full CTS-2, as well as a face-to-face, clinically-based IPV screener called the Hurt/Insult/Threaten/Scream (HITS) tool, which measures both mild and severe forms of psychological aggression (DiVietro et al., 2018; Shakil et al., 2014). Using this approach, DiVietro et al. (2018) found that 73.6% of their sample reported lifetime psychological FMPV (DiVietro et al., 2018). The difference in measurement tools most likely explains the discrepancy between reported psychological FMPV between these two clinical study samples; however, future research should work to incorporate a more comprehensive assessment of psychological FMPV among male-identifying patients in clinical settings. The remaining studies within this age group that measured psychological FMPV were highly context and population-specific. As can be observed, the majority of studies in this age group had majority white/Caucasian sample populations, demonstrating a clear gap in evidence around FMPV experiences among men of color. Breaking this mold was the cross-sectional study of 1669 patients seeking care in at a large public hospital and trauma centers’ emergency department in the Southeast (Rhodes, Houry, Cerulli, Straus, Kaslow, McNutt, et al., 2009). Of the predominantly African American male-identifying sample population (n=712 men, 87.7% of whom identified as Black/African American), 18.7% reported past-year experiences of verbal aggression measured using one question (“used words/yelled/screamed in a way that frightened you”) from the George Washington University Universal Violence Prevention Screening Protocol (Dutton et al., 1996) (Rhodes et al., 2009). Esthappan and colleagues (2018) studied psychological partner violence among a purposive sample of internet users with experiences of coerced or forced marriage (n=6625), using study-specific measures towards this construct and finding that 67.2% had experienced psychological FMPV (Esthappan et al., 2018). The
unique study design and approach to psychological FMPV in this study means it cannot be compared with any others in this review.

The three studies among active-duty military and veterans found far lower prevalence than other studies in this age group, consistent with the trends seen in physical and sexual forms of FMPV discussed above (Bartlett et al., 2018; Iverson et al., 2017; Foran et al., 2011). The study by Foran et al. (2011) found that only 6% of male-identifying participants (n=642) reported past-year psychological FMPV in a study among n=42,744 veterans at 82 air force bases (Foran et al., 2011). Importantly, Foran et al. (2011) looked only at “clinically-significant” forms of IPV, which led to a much more restrictive definition and operationalization of psychological FMPV than other studies among military or in this age group (Foran et al., 2011). By comparison, Bartlett et al. (2018) found 11.9% of their n=642 male-identifying participants reported past-year psychological FMPV among their simple random sample of veterans who screened positive for trauma upon phone or web-based recruitment (Bartlett et al., 2018). Bartlett et al. (2018) used the Humiliation, Afraid, Rape, Kick (HARK) instrument to identify emotional violence (“Within the last year, have you been humiliated or emotionally abused in other ways by your partner or your ex-partner?”) and fear of partner (“Within the last year, have you been afraid of your partner or ex-partner?”), which may have contributed to the low prevalence of psychological FMPV identified (Bartlett et al., 2018; Sohal et al., 2007). The differences between these findings (6-11.9% past year psychological FMPV) and those of Iverson et al. (2018) (73.6% past six-months) underscores that the different measures of FMPV did not have analogous definitions of psychological FMPV and likely contributed to the heterogeneity of findings among military personnel. Other explanations include issues of stigma, fear of career/reputational consequence, unique military-related cultures, hierarchies, and protocols, as well as other well-documented barriers to IPV treatment and response within the military context (Kamarck et al., 2019; Williston et al., 2015).

3.6 Digital FMPV

The categories used to organize the findings of the studies in this review are intentionally broad to allow for greater depth of comparison and discussion, however they are not all-encompassing. For instance, three studies defined and measured cyber or digital partner abuse separately from the other forms of partner violence (Cutbush et al., 2018; Drouin et al., 2015; Zapor et al., 2017). These studies
found a wide range of 28.9-74.1% digital FMPV; however, the reliability and external validity of these estimates is limited and reiterates the need for more research around this form of violence. To quickly revisit the study by Drouin et al. (2015), this cross-sectional, online survey among their majority White/Caucasian (83%) undergraduate students (total n=480) measured digital sexual coercion (or "sexting coercion") in addition to other forms of sexual coercion (Drouin et al., 2015). They found that 17% of the n=160 male-identifying participants reported having engaged in sexting when they did not want to in (Drouin et al., 2015). Like Drouin et al. (2015), the findings of Zapor and colleagues (2017) drew a thin line between digital and other forms of FMPV (sexual and psychological, respectively) (Drouin et al., 2015; Zapor et al., 2017). The highest prevalence of digital FMPV found in a study of n=345 undergraduate psychology students at one university by Zapor and colleagues (2017), which used the 9 item Cyber Psychological Abuse Scale (Leisring & Giumetti, 2014) and found 74.1% of male-identifying respondents (n=143) reported past year digital FMPV (Zapor et al., 2017). The Cyber Psychological Abuse Scale, as the name suggests, is an instrument designed for "capturing psychological partner abuse as it occurs in an electronic context," (Leisring & Giumetti, 2014), meaning this estimate is perhaps more comparable to the high psychological FMPV results found among undergraduate psychology/sociology student samples (Zapor et al., 2017). This narrow focus on a form of digital abuse also likely explains the difference in prevalence found between Drouin et al. (2015) and Zapor et al. (2017) (Drouin et al., 2015; Zapor et al., 2017). The overrepresentation of White/Caucasian individuals across this and all studies that measured digital FMPV also reinforces the need for sampling methods that promote greater inclusion and diversity. The focus on a sexual form of digital FMPV is also noteworthy; recent research has shown that sexual forms of online partner aggression disproportionately affect female-identifying populations compared to non-sexual digital aggression (defined in Dick et al. study as when their partner repeatedly contacted/checked in, made mean/hurtful comments, spread rumors, or made direct threats/aggressive comments) (Caridade, Braga, & Borrajo, 2019; Dick et al., 2014; Drouin et al., 2015; Lu, Van Ouytsel, & Temple, 2021).

To measure digital FMPV, Cutbush and colleagues (2018) used 8 items from an instrument by Picard et al., (2007) and found that 41.8% of their n= 7th grade students from schools in California reported digital FMPV in the past six-months (Cutbush et al., 2018; Picard et al., 2007). Their use of an
instrument validated before social media was widely available calls into question the construct and face validity of this approach. Dick and colleagues (2014) used data from the baseline survey (n=1008) of their cluster-randomized trial among to promote healthy relationships and reduce adolescent relationship abuse, comprising 11 school health centers in Northern California (Dick et al., 2015). They found that 28.9% of the n=239 male-identifying participants in their regionally-representative study reported non-sexual forms of digital FMPV in the past three months but only 9.2% experienced non-sexual forms of digital FMPV (e.g. being pressured to send sexual images or content by phone/online) (Dick et al., 2015). Though specific to youth on the Pacific Coast, these were still the most generalizable estimates of digital FMPV, and the high prevalence of both sexual and non-sexual forms of digital partner abuse found by Dick et al. (2015) points to the need for a stronger, coordinated response to supporting adolescent relationships online (Dick et al., 2015). Further, the limited number of studies, the lack of comparability in measures, and substantial variations in prevalence are all suggestive of the need to do further research in this arena.

4. Discussion

The primary outcome of this review is the range of prevalence of female-to-male partner violence in a heterosexual intimate or dating relationship in US research published between 2009-2019. The more generalizable estimates of physical FMPV within each age group are 14% past 3 months among adolescents, 11.3 – 12.4% past six months physical FMPV among university students, and 29.8% past year physical FMPV among adults. Generalizable estimates of past-year sexual FMPV ranged from 8.3-12% among adolescent samples, 9.1-19% among university student samples, and around 15.3% among adults (this was the most generalizable estimate within this age group). The most generalizable estimates for past year psychological FMPV among adolescents included 15.3-26.1% and around 67.9-93.5% for university students, although clearly there are discrepancies in how this construct has been measured across age groups as it is unlikely that university students experience up to six times the psychological abuse than their adolescent peers. Identifying the most generalizable estimates for past-year psychological FMPV among adult populations was challenged by the lack of nationally representative study samples. Common reasons for discrepant prevalence rates included diverse measures, study-level
The majority (n=29, 82.9%) of studies were cross-sectional, meaning the causal or temporal mechanisms of FMPV are not well studied or understood. The estimates in this review for physical and sexual FMPV are comparable to national estimates, although a direct comparison with national data is not feasible given the differences in study design, sampling, and measurement between studies in this review and nationally representative surveillance systems. Of the n=4323 male-identifying participants in the CDC-funded, nationally representative NISVS among individuals over 18 years old, 31% reported physical FMPV, 8.2% sexual FMPV, and 34.2% psychological FMPV (Smith et al., 2018). Regarding adolescents, the 2019 YRBS found that 7% (n=4168) of male-identifying adolescents reported physical partner violence during the 12 months prior to being surveyed, 3.8% (n=3341) reported sexual FMPV (Basile et al., 2020; Centers for Disease Control & Prevention, 2019).

The secondary outcome of this review was the identification of the study measures, sampling methods, and sample characteristics of these peer-reviewed articles to place findings into context. The CTS-2 was the primary instrument used to capture FMPV experiences of male-identifying populations, which has a unique theoretical foundation and history compared to the other scales found in this review. While a trusted and well-validated scale, the CTS-2 has received criticism for failing to contextualize the violence or conflict being measured, as well as not reliably distinguishing between deliberate, defensive, and/or playful uses of violence or aggression (Mojtabai, Olfson, & Han, 2016; National Academies of, 2019; George C Patton et al., 2016). In addition, the CTS-2 can be operationalized either as the acts happening only once constituting violence (inflating prevalence especially if psychological aggression) or requiring an act to have happened more than once or to be severe to be considered violence. Noting the many youth-focused studies this review, this limitation of the CTS-2 may be particularly relevant for how the results are interpreted and understood, as the dynamics of dating violence differ in important ways from adult intimate partner violence (i.e. duration or level of commitment). Future data collection and measurement methods ought to therefore consider ways to address this challenge by incorporating other validated scales, adapting scoring methods, or enriching quantitative methods with mixed or qualitative research designs, particularly when investigating younger sample populations. For instance, Cascardi
and colleagues’ exploration into how two separate IPV measures capture this trend may account for the inconsistency in reported prevalence of psychological FMPV (Coker et al., 2014; Debnam et al., 2016). In particular, they note that “the CADRI threat items in particular (i.e., threats to harm or frighten one’s partner), may be more conceptually similar to the qualifiers on the CTS2 physical aggression items (i.e., intent to hurt),” (Haynie et al., 2013). Others have added to this discussion by taking a strategic look at how violence-related questions and studies are framed or worded, with a recent quasi-experimental study by Anderson and colleagues (2021) finding different patterns of response, particularly regarding reported sexual violence experiences, among the n=782 university students who participated in one the four identical studies that differed in title (“Questionnaires about Alcohol,” “Questionnaires about Crime,” “Questionnaires about Health,” or “Questionnaires about Sexual Assault”) (Anderson, Namie, Michel, & Delahanty, 2021).

4.1 Implications for research

Research around intimate partner and dating violence has long centered on survivors who identify as female with the exception of the work of Straus and colleagues in the 1980’s and 1990’s that tried to establish gender parity in dating violence among college students. However, most research since that era has centered on survivors who identify as females, a trend rooted in historically and culturally driven paradigms that have determined the direction of gender-informed care, research, and policy (George C. Patton & Viner, 2007; Smith, Zhang, & Basile, 2018; Zweig, Dank, Yahner, & Lachman, 2013). It has also been driven by the reality of the more serious consequences (serious morbidity in terms of injury and psychological impact as well as death and near death) from partner violence happening to significantly more survivors who identify as female than as male. This is a notable and largely positive aspect of the field; however, it is time to return to gender inclusivity in order to address the challenges that persist in how other gender identities are included and represented in research (Franke, 2014; Keyes, Gary, O’Malley, Hamilton, & Schulenberg, 2019; National Academies of, 2019; Rebok et al., 2019; K. Smith et al., 2018; Zweig et al., 2013). The following are recommendations based on findings from this review:

*Where possible, distinguish between gender identity, sexual identity, sex assigned at birth.* Some of the studies in this review may conflate cisgender experiences of partner violence with transgender
experiences, an oversight that has been highlighted and challenged in recent literature (Brooks et al., 2021; Howard, Potter, Flagg, Moynihan, & Ahmad-Kahloon, 2020). The acknowledgement of the intersecting, yet distinct, identities of participants is therefore recommended not only because it will aid our response to IPV among certain demographics, but also because it will reduce bias or error when interpreting results.

More methodologically sound sampling of male-identifying individuals across contexts. Given that male-identifying individuals were often less than half the total sample size for the included studies, a more representative distribution of participants by gender identity, age, and context is strongly recommended. Among young adults, for example, research is needed among individuals who are not university or college students and among racially and ethnically diverse populations. Further, stronger measurement, careful attention to reporting mandates and possible stigmatization in military settings, and cautious interpretation is needed among male-identifying military and veteran populations, as the prevalence of FMPV was mostly lower within this demographic with the exception of Iverson et al. (2017), whose stratified random sample of post-9/11 US veterans reported a high prevalence of psychological/emotional FMPV (64.8% among n=240 male-identifying participants) (Iverson et al., 2017).

Stronger operationalization of validated measures and/or subscales that encompass the type, severity, and frequency of FMPV experiences, as well as instruments specific to the age and context of the sample. Strategic and carefully adapted measurement methods should also be used to ensure that these tools effectively capture the prevalence of male experiences of FMPV as well as the types, severity, and consequences of FMPV. Community-based participatory models that reflect both male and female perspectives could also be a useful tool to help guide study designs and measures and explain results.

Measure less studied forms of FMPV, such as digital abuse, to better capture the nature, depth, and breadth of FMPV experiences. Available evidence between 2009 – 2019 around experiences of digital abuse were remarkably limited and largely formative in nature (Goldfarb & Phelps, 2017; Skinner et al., 2016; White, 2009). Not surprisingly, then, only six studies in this review measured digital forms of FMPV. In an increasingly digitalized society, the need for greater exploration into digital forms of partner violence and abuse is clear. Future research would do well to strengthen its measurement of this phenomenon using evidence-based instruments (Brown & Hegarty, 2018).
4.2 Strengths

A clear strength of this review is that it directly addresses a gap in evidence on men and boys’ experiences of intimate partner and dating violence in the US by synthesizing the findings of primary data collected over ten years of published literature. Not only is this an important public health phenomenon, but this evidence could inform efforts to strengthen trauma-informed care interventions and support services for male and female dyads in the US. By examining the various forms of reported violence, including physical, sexual, and psychological FMPV, this review augments current discourse among field experts that violence is a complex and often nuanced experience that is not always visible, easily articulated, or well understood.

4.3 Limitations

There are several limitations to this review. One, distinctions between sexual identity, gender identity, and sex assigned at birth were not always clear, and it is possible that some prevalence estimates of FMPV reported are conflating both cisgender and transgender experiences, as well as experiences of men in same-sex relationships. Second, this review only looked at prevalence statistics among studies collecting primary data, which excluded a considerable number of rigorous studies conducted during this time period. The review focuses on prevalence—and therefore does little to illuminate other aspects of FMPV pertinent to research or practice. In addition, while all included articles were published between 2009-2019, most collected data in the years prior to their publication date. Therefore, prevalence estimates and measurement methods identified in this review are more reflective of research performed between 2000 – 2017. While sample age, sample size, and context are all important considerations, the variation in physical FMPV prevalence reported among adult participants, for example, indicates that there are other sample demographics and characteristics that contribute to FMPV trends, such as race or ethnicity, which are not well reflected in the included studies. Further, only female-to-male directionality was explored in the current review, therefore preventing a full comparison between this trend and other potential directions of violence, such as male-to-male, female-to-female, male-to-female, bidirectional trends, and so on. In addition, focusing on US samples only limits the generalizability of the findings, as well as the focus on studies in English.

5. Conclusion
Scientific understanding of how often partner violence truly impacts cisgender, heterosexual males is limited by context, sample size, and what questions they are asked - despite their regular inclusion into study samples. To strengthen future research among male-identifying individuals as well as other gender and sexual identities, findings from this review suggest that more strategic and gender sensitive sampling, more age and context-appropriate measurement methods, and greater sensitivity to the intersecting, yet distinct, gender and sexual identities of individuals is needed.
Figure 2.1. PRISMA Diagram

- 9079 References Identified
  - 4253 Duplicates Removed
  - 4826 Titles & Abstracts Screened
    - 4399 Studies Excluded
      - 35 Studies Included

393 Studies Excluded:
- 114 Analysis Ineligible
- 67 Study Design Ineligible
- 49 Not Peer Reviewed
- 50 Outside US
- 39 Not Female-to-Male Violence
- 31 Duplicate Study Samples
- 27 Not Partner Violence
- 15 Non-English
Table 2.1. Measurement Instrument, Type of FMPV Measured, and Timeframe Measured of Included Studies (n=34)

<table>
<thead>
<tr>
<th>Primary FMPV Measure</th>
<th>First Author</th>
<th>Year</th>
<th>Type of FMPV Measured</th>
<th>FMPV Timeframe</th>
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** Estimates do not include the percent in each study that didn’t respond to race/ethnicity questions (i.e. totals may not add up to 100%). Estimates over 50% are highlighted for ease of reference.

a. Purp = purposive sample; SRS = simple random sample; StratR= stratified random sample; Conv= convenience sample; Cohort = cohort study with random sampling within cohorts; ClustR= clusterized random sample.
CHAPTER 2: LITERATURE REVIEW

b. W/C = White/Caucasian; H/L = Hispanic/Latino/Latina; B/AA = Black/African American; A/AA = Asian/Asian American; NA/AN = Native American/American Indian; NH/PI = Native Hawaiian/Other Pacific Islander; AI/AN = American Indian/Alaskan Native; MISC = Other/Multiracial/Biracial
c. These studies presented race/ethnicity demographics by gender identity. Presented estimates reflect only the racial/ethnic identities of their male-identifying participants
d. Specific location(s) not specified (NS)
e. Race/ethnicity of participants not specified
f. Aggregate of both Filipino and non-Filipino Asian/Asian-American categories provided by Baker et al. (2011)
g. Race/ethnicities of participants measured as "minority" vs. "non-minority" - provided estimate is of the percent in the "minority" group
h. US AFB = 82 US Air Force Bases
Table 2.3. Most generalizable estimates of Female-to-Male Partner Violence (FMPV) by type and age group among the n=31 included studies

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<td>8.3 – 12% lifetime</td>
<td>15.3 – 16.5% past year, 35.3 – 44% lifetime</td>
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<td>University Students</td>
<td>11.3 – 12.4% past six-month</td>
<td>9.1 – 19% past year</td>
<td>18.1–26.9% past semester</td>
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<td>Adults (17+)</td>
<td>16.7 – 29.8% past year</td>
<td>6.7 – 15.3% past year</td>
<td>64.6 – 73.6% past 6 months (generalizability limited)</td>
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## Table 2.4. Physical FMPV prevalence by age group and sample context

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<td></td>
<td>Carroll et al.</td>
<td>2011</td>
<td>13 - 21</td>
<td>92</td>
<td>44.2% lifetime; 39.2% past year</td>
</tr>
<tr>
<td></td>
<td>Hensel et al.</td>
<td>2018</td>
<td>M 16.1</td>
<td>72</td>
<td>38.2% current/recent partner</td>
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<tr>
<td></td>
<td>McNaughton Reyes et al.</td>
<td>2017</td>
<td>12 - 16</td>
<td>89</td>
<td>22% NS*</td>
</tr>
<tr>
<td></td>
<td>Ybarra et al.</td>
<td>2016</td>
<td>10 - 15</td>
<td>774</td>
<td>19.4% lifetime</td>
</tr>
<tr>
<td><strong>Adolescents</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Haynie et al.</td>
<td>2013</td>
<td>M 16.25</td>
<td>974</td>
<td>11.7% past year; 14% moderate, past 3 mo violence</td>
</tr>
<tr>
<td></td>
<td>McNaughton Reyes et al.</td>
<td>2018</td>
<td>Grades 8-10</td>
<td>1657</td>
<td>7% severe, past 3 mo violence</td>
</tr>
<tr>
<td></td>
<td>Debnam et al.</td>
<td>2016</td>
<td>M 16.1</td>
<td>13619</td>
<td>18.4% past year; 35.4% past year</td>
</tr>
<tr>
<td></td>
<td>Baker et al.</td>
<td>2011</td>
<td>NS* (grades 9-12)</td>
<td>223</td>
<td>13.4% past year</td>
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<tr>
<td></td>
<td>Coker et al.</td>
<td>2014</td>
<td>NS* (grades 9-12)</td>
<td>6293</td>
<td>13.4% past year</td>
</tr>
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<td><strong>University/College Students</strong></td>
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</tr>
<tr>
<td></td>
<td>Anderson et al.</td>
<td>2017</td>
<td>M 22</td>
<td>417</td>
<td>33.2% past year or current partner; 34.0% past year</td>
</tr>
<tr>
<td></td>
<td>Cornellius et al.</td>
<td>2010</td>
<td>M 18.38</td>
<td>35</td>
<td>32.9% minor injury, timeframe NS*; 33.3% CADR measure, past 6mo</td>
</tr>
<tr>
<td></td>
<td>Amanor-Boadu et al.</td>
<td>2011</td>
<td>NS* (Freshman - Seniors)</td>
<td>216</td>
<td>18.9% severe injury, timeframe NS*; 38.2% past year</td>
</tr>
<tr>
<td></td>
<td>Cascardi et al.</td>
<td>2016</td>
<td>18 - 21</td>
<td>185</td>
<td>32.8% CTS-2 measure, past 6mo</td>
</tr>
<tr>
<td></td>
<td>Coker et al.</td>
<td>2016</td>
<td>18 - 24</td>
<td>2693</td>
<td>11.3% intervention group, past semester</td>
</tr>
<tr>
<td></td>
<td>Ferguson</td>
<td>2011</td>
<td>M 25.7</td>
<td>73</td>
<td>12.4% control group, past semester</td>
</tr>
<tr>
<td></td>
<td>Prospero et al.</td>
<td>2010</td>
<td>M 21.78</td>
<td>370</td>
<td>32.9% past year; 44.0% past year</td>
</tr>
<tr>
<td></td>
<td>Zapor et al.</td>
<td>2017</td>
<td>M 19.1</td>
<td>143</td>
<td>38.2% past year; 46.0% past year</td>
</tr>
<tr>
<td></td>
<td>Drouin et al.</td>
<td>2015</td>
<td>M 20.6</td>
<td>160</td>
<td>12.1% recall of events from age 13-19yo</td>
</tr>
<tr>
<td></td>
<td>Bonomi et al.</td>
<td>2016</td>
<td>18 - 21</td>
<td>140</td>
<td>12.1% recall of events from age 13-19yo</td>
</tr>
<tr>
<td><strong>Military/Veterans</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Crouch et al.</td>
<td>2009</td>
<td>17 - 34</td>
<td>459</td>
<td>23.8% moderate, past year; 16.7% severe, past year</td>
</tr>
<tr>
<td></td>
<td>Iverson et al.</td>
<td>2017</td>
<td>21 - 70</td>
<td>240</td>
<td>7.7% past 6 months; 7.01% past year</td>
</tr>
<tr>
<td></td>
<td>Bartlett et al.</td>
<td>2018</td>
<td>24 - 90</td>
<td>642</td>
<td></td>
</tr>
<tr>
<td><strong>Industrial/union workers</strong></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Cunradi et al.</td>
<td>2009</td>
<td>M 38.8</td>
<td>897</td>
<td>18.2% past year</td>
</tr>
<tr>
<td></td>
<td>Ames et al.</td>
<td>2013</td>
<td>M 39</td>
<td>385</td>
<td>24.5% past year</td>
</tr>
<tr>
<td><strong>Clinical settings</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rhodes et al.</td>
<td>2009</td>
<td>18 - 55</td>
<td>712</td>
<td>16.7% past year; 38% lifetime</td>
</tr>
<tr>
<td></td>
<td>DiVietro et al.</td>
<td>2018</td>
<td>M 48</td>
<td>163</td>
<td>30.7% past year; 18% past year</td>
</tr>
<tr>
<td></td>
<td>Chang et al.</td>
<td>2011</td>
<td>M 38.6</td>
<td>158</td>
<td></td>
</tr>
<tr>
<td><strong>Community</strong></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Drumm et al.</td>
<td>2009</td>
<td>18+</td>
<td>558</td>
<td>20.1% since adulthood; 27.8% moderate viol, past year</td>
</tr>
<tr>
<td></td>
<td>Kar et al.</td>
<td>2010</td>
<td>M 37.26</td>
<td>453</td>
<td>12.6% severe viol, past year</td>
</tr>
<tr>
<td></td>
<td>McMahon et al.</td>
<td>2017</td>
<td>M 40.4</td>
<td>330</td>
<td>42.7% past 3 months</td>
</tr>
</tbody>
</table>

* NS = Not Specified
### Table 2.5. Sexual FMPV prevalence by age group and sample context

<table>
<thead>
<tr>
<th>Age Group</th>
<th>First Author</th>
<th>Year</th>
<th>Age Range/ Mean (Yrs)</th>
<th># Males (n)</th>
<th>Prevalence of Sexual FMPV</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<tr>
<td><strong>Clinical Settings</strong></td>
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<tr>
<td><strong>Adolescents</strong></td>
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<tr>
<td></td>
<td>Carroll et al.</td>
<td>2011</td>
<td>13 - 21</td>
<td>92</td>
<td>39.3% lifetime</td>
</tr>
<tr>
<td></td>
<td>McNaughton Reyes et al.</td>
<td>2017</td>
<td>12 - 16</td>
<td>89</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ybarra et al.</td>
<td>2016</td>
<td>10 - 15</td>
<td>774</td>
<td></td>
</tr>
<tr>
<td><strong>Community</strong></td>
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<tr>
<td><strong>High School/Middle School Students</strong></td>
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<tr>
<td></td>
<td>McNaughton Reyes et al.</td>
<td>2018</td>
<td>M 16.1</td>
<td>72</td>
<td>0.9% current/ recent partner</td>
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<td></td>
<td>Baker et al.</td>
<td>2011</td>
<td>NS*</td>
<td>223</td>
<td></td>
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<tr>
<td></td>
<td>Coker et al.</td>
<td>2014</td>
<td>NS*</td>
<td>6293</td>
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<tr>
<td><strong>University/College Students</strong></td>
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<tr>
<td><strong>Young Adults</strong></td>
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</tr>
<tr>
<td></td>
<td>Anderson et al.</td>
<td>2017</td>
<td>M 22</td>
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<td>39.8% past year or current...</td>
</tr>
<tr>
<td></td>
<td>Coker et al.</td>
<td>2016</td>
<td>18 - 24</td>
<td>2693</td>
<td>10.5% intervention group - past semester</td>
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<td></td>
<td>Fair et al.</td>
<td>2011</td>
<td>17-23</td>
<td>31</td>
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<td></td>
<td>Prospero et al.</td>
<td>2010</td>
<td>M 21.78</td>
<td>370</td>
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<td></td>
<td>Drouin et al.</td>
<td>2015</td>
<td>M 20.6</td>
<td>160</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bonomi et al.</td>
<td>2013</td>
<td>18 - 21</td>
<td>140</td>
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<td><strong>Military/Veterans</strong></td>
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<tr>
<td><strong>Adults</strong></td>
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<tr>
<td></td>
<td>Iverson et al.</td>
<td>2017</td>
<td>21 - 70</td>
<td>240</td>
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<tr>
<td></td>
<td>Bartlett et al.</td>
<td>2018</td>
<td>24 - 90</td>
<td>642</td>
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<tr>
<td><strong>Clinical Settings</strong></td>
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<tr>
<td><strong>Community</strong></td>
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<tr>
<td></td>
<td>Kar et al.</td>
<td>2010</td>
<td>M 37.26</td>
<td>453</td>
<td></td>
</tr>
<tr>
<td></td>
<td>McMahon et al.</td>
<td>2017</td>
<td>M 40.4</td>
<td>330</td>
<td></td>
</tr>
</tbody>
</table>

* NS = Not Specified
## Table 2.6. Psychological FMPV prevalence by age group and sample context

<table>
<thead>
<tr>
<th>Age Group</th>
<th>First Author</th>
<th>Year</th>
<th>Age Range/ Mean (Yrs)</th>
<th># Males (n)</th>
<th>Prevalence of Psychological FMPV</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Adolescents</strong></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Community</td>
<td>McNaughton Reyes et al.</td>
<td>2017</td>
<td>12 - 16</td>
<td>89</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ybarra et al.</td>
<td>2016</td>
<td>10 - 15</td>
<td>774</td>
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</tr>
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<td>High School/Middle School Students</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Baker et al.</td>
<td>2011</td>
<td>NS* (grades 9-12)</td>
<td>223</td>
<td>52.5% past...</td>
</tr>
<tr>
<td></td>
<td>Coker et al.</td>
<td>2014</td>
<td>NS* (grades 9-12)</td>
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<td>15.3% past...</td>
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<td></td>
<td>Anderson et al.</td>
<td>2017</td>
<td>M 22</td>
<td>417</td>
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<td>Cornelius et al.</td>
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<td>35</td>
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<td>Coker et al.</td>
<td>2016</td>
<td>18 - 24</td>
<td>2693</td>
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<td></td>
<td>Ferguson</td>
<td>2011</td>
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<td>73</td>
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<td>Prospero et al.</td>
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<td>M 21.78</td>
<td>370</td>
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<td></td>
<td>Zapor et al.</td>
<td>2017</td>
<td>M 19.1</td>
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<td></td>
<td>Fair et al.</td>
<td>2011</td>
<td>17-23</td>
<td>31</td>
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<td>Bonomi et al.</td>
<td>2013</td>
<td>18 - 21</td>
<td>140</td>
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<tr>
<td><strong>Adults</strong></td>
<td>Military/Veterans</td>
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<td>Iverson et al.</td>
<td>2017</td>
<td>21 - 70</td>
<td>240</td>
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<td>Bartlett et al.</td>
<td>2018</td>
<td>24 - 90</td>
<td>642</td>
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<td>Clinical settings</td>
<td>DiVietro et al.</td>
<td>2018</td>
<td>M 48</td>
<td>163</td>
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<td>Chang et al.</td>
<td>2011</td>
<td>M 38.6</td>
<td>158</td>
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<td></td>
<td>McMahon et al.</td>
<td>2017</td>
<td>M 40.4</td>
<td>330</td>
<td></td>
</tr>
</tbody>
</table>

* NS = Not Specified
CHAPTER 2: LITERATURE REVIEW

References


CHAPTER 2: LITERATURE REVIEW


CHAPTER 2: LITERATURE REVIEW

Kar, & O'Leary. (2010). Gender symmetry or asymmetry in intimate partner victimization? Not an either/or answer. *Partner Abuse, 1*(2), 152.


CHAPTER 2: LITERATURE REVIEW


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Purpose & Aims

The digital world has shifted our understanding of relationships, communication, and conflict. Intimate partners and/or family members are the perpetrators of abuse in most cases, which is particularly concerning for adolescents and young adults, who are at high risk for conflict, violence, and abuse in their dating/intimate relationships. What we know about abuse is primarily based in thirty years of data around in-person forms of abuse. Research on digital dating abuse is still in its nascency. Understanding how online experiences and relationships impact human health, wellbeing, and behavior will help us to better serve current and future generations of youth. Worsening epidemiological trends in anxiety, depression, and suicidality among adolescents nationwide place further urgency and relevancy of these scientific endeavors (Hinduja & Patchin, 2020; Smith-Darden, Kernsmith, Reidy, & Cortina, 2017; Zweig, Dank, Yahner, & Lachman, 2013). The purpose of this explanatory mixed methods dissertation research was therefore to understand adolescent experiences of digital dating abuse and the association of these experiences with adolescent depressive symptoms and if the relationship was moderated by sex. The specific aims were:

Aim 1. Assess the prevalence and frequency of digital dating abuse experienced by adolescents with recent dating violence experience and explore if these experiences differ by sex.

Hypothesis 1. The overall frequency of digital abuse will not differ significantly by sex.

Aim 2. Test the associations between digital dating abuse and adolescent symptoms of depression. Explore if these associations differ by sex.

Hypothesis 2. Experiences of digital abuse will be positively associated with depressive symptoms, such that as digital abuse frequency increases, controlling for other forms of dating violence, self-reported depressive symptoms will increase.

Hypothesis 3. The strength of associations between digital dating abuse and mental health outcomes will differ by sex, after controlling for sexual and physical dating violence.

Aim 3. Use qualitative data from in-depth interviews on adolescent perceptions on the psychobehavioral factors of vulnerability and resiliency that contribute to digital dating abuse and associated mental health outcomes to further explain quantitative findings in aims 1 and 2.
An explanatory mixed methods design uses a sequential approach, where the qualitative phase follows the quantitative phase so that the interview data/narratives can help to explain or expand on statistical findings (Ivanokova et al., 2006). For this study, an explanatory mixed methods approach was chosen because it allowed for exploring both testable associations between mental health and digital dating abuse (DDA) and the contextual factors which contribute to this phenomenon using qualitative data collection and analysis among a separate sample within this age group. The following chapter outlines the methods used during this dissertation research study. Sections include a review of the research design and conceptual/operational definitions, followed by overviews of both the quantitative and qualitative phase design.

Research Design

In socio-behavioral nursing and public health research, there are five ways in which a given topic of interest or health priority may be approached: exploration, description, explanation, community change or action, or evaluation of a research question (Leavy, 2017). Building on this foundation, this dissertation research used a non-experimental, observational mixed methods research design, separated into two distinct phases: 1) the quantitative phase, and 2) the qualitative phase. A mixed methods approach is defined as the “procedure for collecting, analyzing, and ‘mixing’ or integrating both quantitative and qualitative data at some stage of the research process within a single study for the purpose of gaining a better understanding of the research problem,” (Ivankova, Creswell, & Stick, 2006). This is related to, yet distinct from, mixed methodology. Dr. Johnstone of Macquarie University distinguishes this well by clarifying that “the methodological perspective relates to the underlying logic, or ways of thinking about the data,” whereas a mixed methods is a research tool or method that can be used to obtain data (Johnstone, 2004).

Looking at the quantitative and qualitative phases separately, the quantitative phase of this dissertation research drew from an empirical, post-positivist perspective that there is an objective knowledge to be gained regarding the relationship between the independent variable, dependent variables, and moderators. While the generalizable, objective truth may be beyond the scope of this dissertation research aims and findings, this empirical perspective drives important planning and
consideration for potential biases that could influence data collection, analysis, and interpretation (Johnstone, 2004; Leavy, 2017).

The qualitative phase used a narrative research design (Creswell et al., 2007). More specifically, this phase focused on the narrative/what was said during the interviews, worked with the participant to collect their stories and put their experiences in chronological order, and then “restoried” the transcribed data during analysis into a more linear, organized framework (Creswell et al., 2007). Further, the development of the interview guide and codebook were guided by the critical theory perspective (Leavy, 2017; Mosqueda-Díaz, Vilchez-Barboza, Valenzuela-Suazo, & Sanhueza-Alvarado, 2014). As discussed in chapter one, critical theory explores the role of power and social & political structures in relation to individual experiences, proposing “a contextual analysis of phenomena; it postulates that establish a truth, we must consider the historical conditions within which said truth emerges,” (Leavy, 2017). Use of this perspective allowed for the study of contextual, individual, and conflict-level factors which contribute to DDA and anxiety and depressive symptoms. These observations were particularly helpful for informing recommendations towards future research.

**Terms and Definitions**

There are many important terms and concepts applied and operationalized throughout this dissertation research study. Table 3.1 provides an overview of both the operational definitions (i.e. those used to guide measurement and study implementation) and the conceptual definitions (i.e. those that have helped to guide the reviews of literature, data interpretation, and discussion) used throughout this dissertation research.

**QUANTITATIVE PHASE**

**Purpose & Aims**

The purpose of this secondary data analysis was to understand the relationship between experiences of adolescent digital dating abuse and symptoms of depression. This quantitative analysis was part of a larger mixed methods dissertation research study that explored both testable associations with mental health symptoms presented in this paper as well as qualitative accounts of adolescents with lived experiences of DDA. The quantitative specific aims of this study were:
Aim 1. Assess the prevalence and frequency of digital dating abuse experienced by adolescents with recent dating violence experience and explore if these experiences differ by sex.

Hypothesis 1. The overall frequency of digital abuse will not differ significantly by sex.

Aim 2. Test the associations between digital dating abuse and adolescent symptoms of depression. Explore if these associations differ by sex.

Hypothesis 2. Experiences of digital abuse will be positively associated with depressive symptoms, such that as digital abuse frequency increases, controlling for other forms of dating violence, self-reported depressive symptoms will increase.

Hypothesis 3. The strength of associations between digital dating abuse and mental health outcomes will differ by sex, after controlling for sexual and physical dating violence.

Parent Study

The parent study for this analysis was the myPlan Teen Health Study (THS), a randomized control trial (PI: Glass, 1R01CE002979-01) which aims to adapt and test an evidence-based safety decision aid and planning tool for use among US adolescents in unsafe dating relationships. To be eligible for the myPlan THS, adolescents had to be between ages 15-17, speak English, report current or past 6-months dating or casual relationships, an experience of dating violence in one or more of those dating/romantic relationships, and access to a safe device (e.g., smartphone, tablet, or computer) to safely access the myPlan THS website. The aims of myPlan THS were separate from the aims of this analysis and related dissertation study. Between December 2020 and July 2021, the myPlan THS recruited a national sample of n=614 eligible 14 to 17-year-old adolescents of all gender identities for their baseline survey. A diverse, national sample of teens across race/ethnicities, states, and contexts (e.g., urban or rural) was recruited into the myPlan THS sample with the help of youth research assistants and community partners who collaborated with the research team to promote the study via social media by posting recruitment materials and videos, as well as snowball/word of mouth methods. Upon completion of the baseline survey, teens in the myPlan THS were randomly assigned by the study website to either the intervention (myPlan app) or control arm. For this analysis, baseline data from both the control and intervention groups of the myPlan THS were included as the measures
of interest for these two groups were the same and the baseline survey was administered prior to exposure to their respective treatment arms.

**Subsample for this Study**

The subsample for this study included those that identified as boy or girl in terms of their gender identity, which aligns with their sex assigned at birth. First, participants were excluded if they replied anything other than “boy” or “girl” to the demographic question on gender identity. In addition, two participants reported that their sex assigned at birth was different from their self-reported gender identity. To avoid conflating that these individuals have the same experiences as cisgender youth, these observations were excluded from the analysis.

**Measures**

*Demographics.* Table 3.2 gives an overview of the measures used. As part of the baseline demographic data (e.g., age, race and ethnicity) collected from all participants in the myPlan THS, gender identity was measured using the question “What term most closely aligns with your gender identity?” Response options included male, female, trans male, trans female, gender non-conforming/non-binary/agender/genderqueer, something else, and not sure. Sex assigned at birth was asked using the following question, “What sex were you assigned at birth (on your original birth certificate)?” with male or female as response options.

*Digital dating abuse (DDA) Scale.* DDA was measured using myPlan Teen Health Study-specific questions based on similar questions found in the Cyber Aggression in Relationships Scale (CARS) and Cyber Dating Abuse Questionnaire (CDAQ) (Borrajo et al., 2015; Watkins, Maldonado, & DiLillo, 2018; Zweig et al., 2013). Importantly, both of these measures have sub-scales that load onto different domains of DDA (e.g., sexual forms of DDA, controlling or monitoring behaviors, etc.). Similarly, for this dissertation research, a factor analysis revealed that at least two domains were present: sexual aggressive online behaviors and controlling/monitoring online behaviors. Controlling or Monitoring Behaviors included experiences of being hacked online, having devices or accounts checked without permission, having their activity or location tracked or monitored, being tested with a fake account, as well as receiving threats of harm/destruction and/or messages or posts to embarrass/shame/insult/harass. The Cronbach’s alpha for this subscale was 0.82. Sexual Aggression
included experiences of partners uploading/sending sexual photos or videos without permission, asking/pressuring into sharing sexual information or images, as well as receiving threats of harm/destruction and/or messages or posts to embarrass/shame/insult/harass. The Cronbach’s alpha for this subscale was 0.82. Direct/Sexual Aggression included experiences of partners uploading/sending sexual photos or videos without permission, asking/pressuring into sharing sexual information or images, as well as receiving threats of harm/destruction and/or messages or posts to embarrass/shame/insult/harass. The Cronbach’s alpha for this subscale was 0.75. Response options for all DDA questions were centered on the frequency of events and included never, seldom, sometimes, often, and always.

Conflict in Adolescent Dating Relationship Inventory – Short Form (CADRI). CADRI is a well-validated tool used to measure adolescent dating violence experiences (Cascardi & Jouriles, 2018; Courtain & Glowacz, 2018; Fernández-González, Wekerle, & Goldstein, 2012). Included were five subscales, comprised of 11 items: physical abuse (they slapped me or pulled my hair; they hit, kicked, or punched me), sexual abuse (they touched me sexually when I didn’t want them to; they forced me to have sex when I didn’t want to), verbal abuse (they spoke to me in a hostile or mean tone of voice; they insulted me with put-downs), relational abuse (they said things to my friends about me to turn them against me; they spread rumors about me), and threats (they threatened to hurt me; they threatened to hit me or throw something; they threatened me with a weapon). Items were scored by summing how frequently they occurred (Never, Seldom, Sometimes, Often, Always) and finding mean outcomes.

PROMIS Pediatric Depressive Symptoms – Short Form 8a. The PROMIS Pediatric Depressive Symptoms – Short Form 8a was used which contains 8 items asking about self-reported depressive symptoms in the past week in the form of feeling sad/unhappy, feeling alone/lonely, and feeling as though everything is going wrong/nothing is right. Response options included never, almost never, sometimes, often, and almost always. This measure was originally developed as part of a National Institutes of Health (NIH) initiative for pediatric populations, which has since been revised and adapted to assess specific health outcomes among individuals 8 to 17 years of age (Varni et al., 2014).
Statistical Power

A power analysis performed to determine the detectable effect size, given there were 391 females and 101 males in the myPlan THS baseline survey. This study was able to determine significance if the difference in the frequency of DDA between males and females had an effect size of 0.28 or greater with power=0.81 and alpha=0.05. Another power analysis was performed to examine the difference by gender in the correlation between DDA and mental health detectable. We are able to detect a difference of 0.27 between the two correlations with power=0.83 and alpha=0.05.

Analysis

Of the n=492 females and males in this dataset, there was only one person with missing data (3 CADRI questions left unanswered out of 11 items, or 73% responses). As the CADRI mean frequency score could not be calculated for this participant, they were dropped from the analysis.

T-tests were conducted to explore differences in DDA frequency between males and females. Bivariate regression was used to test the association between the continuous independent variable of overall DDA frequency and the continuous dependent variable of depressive symptoms. Multiple linear regression of both sexually aggressive and controlling/monitoring DDA on the mean frequency of depressive symptoms was conducted using both unadjusted and adjusted models controlling for other forms of dating violence (including physical and sexual as measured by the CADRI). These regression models. Additional regression models were then conducted to determine if the association between DDA and depressive symptoms differs between genders. Specifically, these models looked at overall and sub-scales of DDA, gender, and the interaction of gender and DDA. The physical and sexual abuse sub-scales of the Conflict in Adolescent Dating Relationships Inventory (CADRI) were included as covariates. The other sub-scales (verbal, threats, and relational abuse) were excluded due to the potential interpretation of these events as happening online, therefore limiting our ability to effectively compare digital vs. in-person forms of abuse on adolescent depressive symptoms. For example, the verbal abuse sub-scale includes two items, “they insulted me with put-downs” and “they spoke to me in a hostile or mean tone of voice,” both of which could be interpreted as happening online. The same is true for relational abuse (“they spread rumors about me,” and “they said things to my friends to turn them against me”) and threats (“they threatened to hurt me” and “the threatened to hit me or throw something at me”).
Therefore, to avoid confusion in the interpretation of the adjusted regression models, these sub-scales were excluded from the analysis.

QUALITATIVE PHASE

The following qualitative methods sections are organized designed to meet the Standards for Reporting Qualitative Research (SRQR), into a 21-item list of recommended components to include when reporting qualitative data (Dossett, Kaji, & Cochran, 2021; O’Brien et al., 2014). Developed by five content experts from a synthesis of 40 original sources (including the Consolidated Criteria for Reporting Qualitative Research (COREQ) by Tong et al., 2007), the SRQR helps to ensure transparency regarding the assumptions, biases, decisions, and related contextual factors to consider when reading and interpreting findings (Dossett, Kaji, & Cochran, 2021; O’Brien et al., 2014).

Purpose & Aim

Guided by the adapted diathesis-stress model, which is the theoretical foundation for this dissertation, the first two aims primarily highlight the relationship between certain stressors (i.e., digital dating abuse) and mental health outcomes (i.e., depressive symptoms) (Bath, 2008; Mojtabai et al., 2016; Schneiderman, Ironson, & Siegel, 2005). The third aim addressed the third core aspect of this model, namely the individual aspects of vulnerability and resiliency which influence these outcomes:

Aim 3. Use qualitative data from in-depth interviews on adolescent perceptions on the psychobehavioral factors of vulnerability and resiliency that contribute to digital dating abuse and associated mental health outcomes to further explain quantitative findings in aims 1 and 2.

As previously mentioned, this study used a narrative research design (Creswell et al., 2007). More specifically, we focused on the narrative/what was said during the interviews, worked with the participant to collect their stories and put their experiences in chronological order, and then “restoried” the transcribed data during analysis into a more linear, organized framework (Creswell et al., 2007).

The theoretical foundation for this study was the diathesis-stress model, or vulnerability-stress model, which was first developed in the 1960s to ground understanding in the physiological, psychosocial, and environmental risk factors that potentiate various vulnerabilities and lead predisposed individuals to develop mental health outcomes (Clark et al., 2017; Franke, 2014; Hankin & Abela, 2005; Schneiderman...
et al., 2008). As described in Chapter 1, diathesis-stress model explores the relationship between the larger themes of stressors (such as digital dating abuse or teen dating violence), vulnerability/resilience (e.g. social connectedness), health outcomes (e.g. depressive symptoms). At the core of the adapted diathesis-stress model for this study are the intersecting identities that adolescents are actively developing and exploring during this life stage. The term intersecting identities draws from the theoretical framework of intersectionality, a term first coined by Kimberlé Crenshaw in the early 1990s to describe the critical analytical perspective that "intersecting power relations influence social relations across diverse societies as well as individual experiences in everyday life," (Bowleg, 2012). For the qualitative phase of this mixed methods study, participants were asked about their preferred gender pronouns, which varied slightly from the myPlan THS' measure for gender identity that asked participants to specify male, female, trans male, trans female, gender non-confirming, questioning, or other.

While the diathesis-stress model was the theoretical foundation for the dissertation study as a whole, the guiding qualitative perspective was critical theory, which has been used widely in nursing literature to support the disciplinary objective to foster the integrity of the whole person across the lifespan (Holmes & Warelow, 1997). There are many ways in which critical theory can be applied to research, however this study drew more heavily on the post-structuralist theoretical school of thought, which focuses on the “deconstruction of unified narratives to expose how dominant ideology works” and impacts individual risks and health outcomes (Leavy, 2017). The critical theory-informed perspective was therefore salient to the narrative research design and strengthened data interpretation. Another rationale for using a critical theory perspective was its inherent connection to the construct of vulnerability, although it uses less biomedical terms and phrases than what would be seen in typical discussions of the diathesis-stress model (Ferrarese, 2016; Leavy, 2017). For example, the diathesis-stress model describes vulnerability as stable, although not immutable, traits that predispose individuals to certain health outcomes (Bath, 2008; Hankin & Abela, 2005), whereas the critical theory perspective uses more socio-political terms to define vulnerability as “susceptibility to a harmful event, [and] is above all a breach of normative expectations,” (Ferrarese, 2016). Thus, the aspects of vulnerability addressed during this phase not only included individual perceptions of digital dating abuse, but also their perceptions of norms, expectations, and influences around their gender identity, dating behavior, digital citizenship, and offline social interactions.
Relatedly, using the critical theory perspective allowed for the exploration of resilience during this phase. Critical theorists are often inconsistent in how resilience is defined or operationalized, as it has been viewed both as a type of behavioral response to stressors or adversity (particularly in politically-oriented or emancipatory perspectives) (Ferrarese, 2016), as well as a stable trait that helps to maintain positive individual adaptation despite adversity (Luthar, Cicchetti, & Becker, 2000). For this research, both conceptualizations of resilience were taken into account when developing the semi-structured interview guide. Questions around the construct of resilience therefore explored individual perceptions and appraisals of how digital dating abuse is influenced by self-perception and expression (both in-person and digitally), social connectedness, digital safety norms and behaviors, self-care behaviors and priorities, and the availability and use of resources.

**Setting**

This study was conducted remotely among a convenience sample of 15–17-year-old adolescents who self-reported having had an experience of digital dating abuse in the past year. The original design was to conduct interviews in-person in Maryland, but pandemic-related adjustments required the study to become entirely remote. This pivot was ultimately beneficial as it allowed for flexibility when inclusion criteria was expanded to teens anywhere in the US (a change made to strengthen comparison between this sample and that of the myPlan THS). Interviews were conducted via Zoom and participants were asked to find a private, quiet space in their home, if possible, to ensure an uninterrupted and safe space for discussion. Most participants were able to find a room to themselves, although three or four of the participants had to care for/attend to either a sibling or grandparent at some point during the interview. Participants were requested to turn on their cameras to verify their identity and ensure their privacy/safety before consenting and enrolling them in the study.

**Human subjects protections**

Approval for this study was obtained from the Johns Hopkins Internal Review Board (IRB) as well as from the doctoral candidate’s dissertation committee. Due to the sensitive nature of the study focus and aims, multiple steps were taken to ensure the confidentiality, privacy, and safety of all participants or would-be participants. Approved by the Johns Hopkins IRB, this study obtained a waiver of written informed consent from parents or guardians but did obtain informed oral assent from adolescent
participants. A primary reason for the waiver of parental consent was that this research posed no more than minimal risk to participants. In addition, without the consent waiver, there was concern around potentially excluding research participants from socially disadvantaged backgrounds, as ability to obtain consent from parents or guardians may be limited if the participants do not reside with them. Further, it may have been unsafe for some to approach a parent for permission regarding a dating abuse study.

Further, the researcher was a trained public health nurse, and the myPlan THS team further consisted of trained nurses and physicians, all of whom have experience or expertise working with adolescents in order to serve as “youth advocates” during the consent process. During the informed oral assent, participants were given an overview of the study and its aims, told what to expect regarding interview questions and activities, and reminded of their ability to opt out of any or all portions of the study at any time. Permission was further obtained from the participant to audio-record the interview, which would be stored securely and only accessible by the research team, and participants were further reminded of the mandatory reporting requirements of the researcher in the event they disclosed violence in the home or towards themselves or others. Receipt of assent for each participant was documented and securely stored on a HIPAA compliant internal server accessible only by the study team.

Participants

Given the qualitative phase was part of a larger explanatory mixed methods dissertation study in which the qualitative phase was designed to help explain or expand on the quantitative phase, the sampling strategy for the interviews was initially designed to mimic the myPlan THS sample. As discussed in the previous section, inclusion criteria for the myPlan THS required participants to be between 15-17 years old, speak English, have safe access to the internet/a device, and have a past-6-month experience of dating violence. Likewise, the inclusion criteria for the qualitative phase included being 15-17 years old, speak English, have safe access to the internet/a device, and have a past-6-month experience of digital dating abuse. This was defined according to the items in the myPlan THS and included whether a partner had in the past year: left threatening posts or messages, sent unwanted sexual content, pressured or coerced them into sharing sexual info/images, checked phone or social media accounts without permission, hacked into online accounts, controlled/monitored whereabouts or activity online, used a fake account/info, or posted, shared, or messaged you online to embarrass,
shame, insult, or harass. Initially, the qualitative study focused on adolescents who reside in Maryland. This shifted to a national sampling strategy to better reflect changes in the myPlan THS sampling strategy from site-specific (Maryland & Missouri) to national. An additional shift was made to past-year experiences of DDA when participants repeatedly struggled to recall when the events occurred after the pandemic. Participants were recruited primarily from an online, social media-based snowball technique. More specifically, flyers and a study-specific Instagram page were circulated among youth advisory boards, colleagues, and weekly announcement newsletters circulated by Johns Hopkins University. Once the inclusion criteria was expanded to anywhere in the US, colleagues from the researcher’s professional network in North Carolina, Alabama, and Colorado helped to disseminate recruitment flyers and messaging. The target sample size (n=20-30) for this phase was decided based on previous studies that used the biographical mapping method for qualitative data collection, which consistently reached saturation at approximately 20-30 participants (Andersson et al., 2019; Chen, 2018; Schubring et al., 2019). Recruitment was capped at n=20 once all types of DDA in the myPlan THS were represented as well as when sample demographics were more evenly distributed.

More specifically, the first n=10 participant characteristics were relatively homogenous in terms of age, racial and gender identity, and place of residence (predominantly 16 or 17-year-old, Black/African American girls from Baltimore, MD). Expanding inclusion criteria to anywhere in the US allowed for recruitment efforts to engage colleagues from professional networks that work with teens from more diverse backgrounds. Of those that were screened, one declined to participate, five ghosted/didn’t respond to the study team, and seven were ineligible due to either their age (n=1), lack of any dating experience (n=4), or lack of DDA experience (n=5). In terms of the DDA experiences reported, the target was to have all DDA items in the myPlan THS baseline measure at least broadly represented. Again these included whether a partner had in the past year: left threatening posts or messages, sent unwanted sexual content, pressured or coerced them into sharing sexual info/images, checked phone or social media accounts without permission, hacked into online accounts, controlled/monitored whereabouts or activity online, used a fake account/info, or posted, shared, or messaged you online to embarrass, shame, insult, or harass. When screening for eligibility, potential participants were asked to briefly describe in 1-2 words on their DDA experience. This allowed for a broad categorization of the type of
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DDA to be discussed but was not prescriptive. In fact, it was routine for participants to report one form of DDA during the screening process but report additional DDA experiences of varying severity later during the interview. This could have important implications for measurement and screening in future research.

Data Collection

The semi-structured interviews were conducted between March – October 2021, lasted approximately 45-60 minutes each and were conducted remotely through a password-protected Zoom session. A semi-structured interview guide was used to elicit participant responses around perceived psychobehavioral factors that impact experiences of digital dating abuse. Interviews consisted of two parts: first, participants were asked general questions about being a teenager online, the role of technology in teen relationships, and perceived mental/emotional impact of adolescent socialization online, particularly with dating partners. The second half consisted of an evidence-based, interactive biographical mapping, or timeline, activity (Andersson et al., 2019; Chen, 2018; Schubring et al., 2019).

During the first part, participants were asked about perceived trends in online dating, who they turn to for support, how to establish or maintain trust with dating partners/others online, and what factors were important to consider when thinking about DDA. Thus, using the timeline activity to elicit specific examples and discussion, the remaining questions and activity focused on self-perceptions of vulnerability (perceptions of norms, expectations, and influences around their gender identity, dating behavior, digital citizenship, and offline social interactions) and resiliency (self-perceived strengths or protections both in-person and digitally, social connectedness, digital safety norms and behaviors, self-care behaviors and priorities, and the availability and use of resources). Initially the sequence of interview components was the reverse, with the timeline activity coming before the general questions, but this was reorganized after feedback was sought from the first two participants. More specifically, one participant gave feedback immediately after their interview that reversing these may be helpful, and the other was given a choice after enrolling and voiced preference for answering general questions before doing the timeline activity.

The technology and instruments used to carry out this study were: a semi-structured interview guide for data collection; Instagram, email, and Google Voice for outreach; Zoom for video conferencing and audio recording; an IRB-approved secure internal server (JHU-provided SharePoint) for storing data;
and the qualitative analysis software Dedoose. As recommended by Kallio, Pietila, Johnson, & Kangasniemi (2016) for development of a semi-structured interview guide, reflexive discussions and internal testing of the interview with the study team (two doctoral-level research assistants) were conducted, as well as expert assessment from the doctoral candidate’s committee members and various community stakeholders from Baltimore- and Denver-based youth-centered programs. This helped to ensure a balanced perspective and maintain accountability regarding the biases and assumptions introduced by the research team, particularly when deciding on wording and order of questions. Initially there was uncertainty on whether the timeline activity should be at the beginning or end of the interview, and so informal feedback from the first two participants (sought immediately after their respective interviews) helped to solidify this decision and place the timeline activity at the end.

A study-specific Instagram account and Google Voice number were both created for outreach purposes, both of which are now inactive. IRB-approved and HIPAA-compliant Zoom and SharePoint accounts were accessed through Johns Hopkins University to collect and store data. Audio recordings from the interviews and a partial screenshot of the timeline activity (face/name of participant were not captured, only what the participant drew) temporarily stored on the researcher’s local computer drive before being securely uploaded to the internal SharePoint server. This same server was used to draft and store the verbatim, de-identified transcripts created manually by the research team and internally checked for accuracy. Transcripts were uploaded into Dedoose for coding and study team collaboration. Only the doctoral candidate and two research assistants had access to the Dedoose project.

A preliminary codebook and coding protocol was established before data collection began, with directed content analysis identified as the best choice for this phase given the strong theoretical foundation of the diathesis-stress model and need for unified constructs across both quantitative and qualitative phases of the study overall. The codebook was developed utilizing input from the researcher’s advisor and faculty mentors, as well as a team of two doctoral-level research assistants (SF & EJ), who also assisted in the transcription and coding of interviews. The first two interviews were coded collectively as a team (during a working meeting) to confirm understanding and quality of the codebook, as well as to ensure consistency and quality of coding across and within interviews. Then transcripts were assigned a primary coder to do the initial coding, with a secondary coder to review for consistency, completeness,
and interpretive discrepancies. Regular debriefs with the research assistants were conducted to assess
theme development and saturation. To ensure confirmability and trustworthiness of these methods, all
analytical decisions, discussions about discrepancies, and evaluations of bias were captured in memos
and meeting notes.

Data Analysis

As interviews were conducted remotely via Zoom, audio-recordings were captured using the
Zoom record feature, temporarily downloaded to the local computer drive, and then uploaded to a secure
online server. Audio recordings were manually transcribed verbatim by the researcher and research
assistants, de-identifying data in this process. Dedoose software was then used to code interviews with
the assistance of two research assistants (doctoral nursing students with active experience in both mental
health and violence prevention research). Further, research assistants listened to the audio recordings
and reviewed transcripts for accuracy before/during coding.

In alignment with recommendations of Assarroudi et al. (2018), the directed content analysis was
carried out in three phases: preparation, organization, and reporting (Assarroudi et al., 2018). For the
preparation phase, in addition to developing a sampling strategy and study materials, development of the
codebook before the study began. Once the data was collected, transcripts were read once in their
entirety, then read again looking for and highlighting according to pre-determined codes. It was decided to
focus on “manifest content” or the transcribed interview text, as opposed to latent content which includes
both the text and participant’s posture, pauses, expressions, etc. (Assarroudi et al., 2018). This was
because several of the participants (approximately half) turned their cameras off either before or
sometime during the interview. Units of analysis were the transcripts, and coding rules were established
on how to describe what Dedoose calls the parent codes (in this study, these were stress, vulnerabilities,
resiliencies, and health outcomes) using diathesis-stress model derived definitions. A few child codes
were then added based on the study’s focus. For example, under the parent code “stressors,” the child
code “digital dating abuse” was added. Coding rules and parent codes were established by all coders
(RK, EJ, & SF) collectively when transcribing the first interview. Subsequent testing was done, this time
with each person coding the second interview independently and blind to what others coded.
Discrepancies in coding were then discussed and resolved in a team meeting to understand and improve inter-coder reliability (Assarroudi et al., 2018; Vaismoradi et al., 2013).

Once all team members consistently and uniformly agreed on code application, primary and secondary coders were randomly assigned to each transcript, with regular debriefs to discuss and resolve any discrepancies in coding. The doctoral candidate reviewed all transcripts for consistency and thoroughness. Coded transcripts were downloaded from Dedoose into Excel pivot tables and matrices in order to identify categories and themes more readily within each code group (stress, vulnerabilities, resiliencies, and health outcomes). Using these matrices to organize and guide discussion, abstraction of the main categories being represented in the transcripts was an iterative process. First, coded excerpts were organized according to four main constructs of adapted diathesis-stress model that guided codebook development: digital dating abuse experiences, vulnerabilities, resiliencies, and health outcomes. Intersecting identities was another category added to capture instances where age or gender-related distinctions were made in interviews regarding online or dating behavior. Appendix Table 3.2 provides an overview of the categories and themes observed in the transcripts during this analysis.

Anchor examples were identified for each theme based on obvious topics from the transcripts. To illustrate, one anchor example for the “Contributing factors to DDA experiences” theme and “Jealousy” category was the quote, "You could be talking to somebody and they could like purposefully be Snapchatting somebody else more than you so that like you get jealous," (P12, age 16, she/her, NC).

Next, categories were merged and re-named into the following main and sub-categories: DDA as a stressor, with sub-categories controlling/monitoring behaviors, false accounts/information, and sexual DDA; Perceived Diatheses/Vulnerabilities, with sub-categories individual factors, physical and online environment, and openness & loneliness; Perceived Resiliencies, with sub-categories friends, family, and perceived resources; Perceived Outcomes, with sub-categories depression, anxiety, and changes online; and Intersecting Identities, with sub-categories age/stage of development, gender identity, and LGBTQ+ identity. These formed the basis for how findings were reported in Chapter 4.2, reviewed and confirmed by research assistants and members of the dissertation committee.
Techniques to enhance trustworthiness

There were several techniques used to enhance trustworthiness of the findings and interpretation, several of which have already been mentioned. For example, there was a comprehensive audit trail including memos, meeting notes, codebook changes and development, as well as the categorization and interpretation of key findings. Member checks were performed per evidence-based recommendations to improve the representation, participation, and transformational validity (Thomas, 2017). More specifically, one member check was performed with a study participant who voiced enthusiasm for the study and willingness to proofread the main themes and categories derived from the analysis, as well as read Chapter 4.2 for any potential misrepresentation or bias. No changes were made based on the feedback from this member check but did result in the study participant/reviewer expressing a sense of empowerment after reading the text. Evidence shows this a common outcome of engaging participants in member checks and suggestive that some degree of transformational validity, or social change, was achieved during the study (Thomas, 2017).

Sandelowski & Barroso (2002) maintain that qualitative research findings can be viewed as both a process and product where the “researcher is deeply and unavoidably implicated,” underscoring the importance of reflexivity during study development, particularly in planning the data collection protocol, semi-structured interview guide, and analysis plan (Sandelowski & Barroso, 2002). The doctoral candidate who led implementation of the qualitative phase and conducted all interviews is a Registered Nurse who identifies as a white, non-Hispanic, cisgender female. She was known to several of the Baltimore-based participants before the study began as a research assistant to another violence-related study at Johns Hopkins University. Reflexive journaling was maintained throughout the study by the doctoral candidate as well as regular meetings with her academic advisor, committee members, and research assistants to discuss and challenge established assumptions or biases.

Other techniques to enhance trustworthiness was a post-analysis review of interview data to look for any cases that did not fit the categories developed. Reflexive journals were also kept by the doctoral candidate to reflect on and make transparent any perceived assumptions or biases. In addition, changes to the codebook and discussion points were documented in memos and meeting notes, along with documentation of the additional codes that were inductively developed using descriptive language when
transcript data did not adequately fit within the theoretically-guided a priori codebook. Appendix Table 3.1 outlines not only how the diathesis-stress concepts related to the parent and child codes applied in the transcripts, but also a condensed example of changes made/documentedit during a team meeting in June 2021.
Table 3.1 Conceptual and operational definitions (quantitative measures & qualitative foci) used for this dissertation research

<table>
<thead>
<tr>
<th>Term</th>
<th>Conceptual Definition</th>
<th>Operational Definition(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adolescents</td>
<td>Individuals undergoing the period between puberty and adulthood of approximately ages 10-19 who experience considerable biological and psychosocial changes that continue to impact their immediate, short-term, and long-term health and behavior (Dick &amp; Ferguson, 2015; Patton &amp; Viner, 2007; Sacks, 2003).</td>
<td>To be eligible for either the quantitative or qualitative phases of this study, participants had to be between ages 15 to 17 years of age.</td>
</tr>
<tr>
<td>Dating</td>
<td>Synonymous with romantic relationships, which include “mutually acknowledged ongoing voluntary interactions… commonly marked by expressions of affection and current or anticipated sexual behavior,” (Collins, Welsh, &amp; Furman, 2009).</td>
<td>The quantitative data from myPlan THS baseline survey defined dating as “dating, going out with, seeing, talking to, something more than just friends,” and most often referred to as “partners.” Similar wording was used in qualitative recruitment and interviews, including “romantic partner, boyfriend, girlfriend,” among others as needed for clarity.</td>
</tr>
<tr>
<td>Digital Dating Abuse (DDA)</td>
<td>The repeated abuse, harm, or aggression by one person against a current or former partner through the use of digital technology (Al-Alosi, 2017).</td>
<td>In both the quantitative data, as well as eligibility criteria for the qualitative study, digital dating abuse was operationalized as experiences of dating/romantic partners using technology to: follow or spy, leave threatening messages, destroy property, leave unwanted texts/calls, post private information online without consent, hacking into accounts without knowledge/consent, using social media or devices to embarrass/threaten/harass, pressure or coerce into sharing information, or track location using GPS or other location services technology.</td>
</tr>
<tr>
<td>Adolescent Dating Violence (ADV)</td>
<td>A phenomenon synonymous with intimate partner violence (IPV), defined as “physical, sexual, psychological, or emotional aggression within a dating relationship, including stalking,” (“Teen Dating Violence,” 2018). More recently, digital or online dating abuse are also included in the definition of the ADV (J. P et al., 2016; Zweig et al., 2013).</td>
<td>In the quantitative dataset, adolescent dating violence was defined as any past-six-month experience of physical, sexual, verbal, or relational (e.g., spread rumors or turned friends against) violence by a dating partner. While not the focus of the qualitative phase of this dissertation, adolescent dating violence was similarly defined and coded where applicable.</td>
</tr>
<tr>
<td>Anxiety Symptoms</td>
<td>The presentation of nervousness, restlessness, hypervigilance, worry, or other autonomic nervous system responses in response to certain stimuli (National Institute of Mental Health, 2020).</td>
<td>Qualitatively reported presentation of the following symptoms: feeling nervous, scared, or worried; feeling worried when at home; getting scared easily; worrying about what could happen; or worrying when trying to go to bed.</td>
</tr>
<tr>
<td>Depressive Symptoms</td>
<td>Episode of depressed or irritable mood, anhedonia, weight or appetite changes, sleeping more/less than usual, feelings of guilt or worthlessness, psychomotor agitation or impairment, decreased ability to concentrate, suicidal ideation or thoughts of death, attempted suicide, or hallucinations/delusions, although these are rare (Sadock, Sadock, &amp; Ruiz, 2015; Swartz, 2019).</td>
<td>Depressive symptoms were quantitatively measured as, as well as qualitatively defined as, past-week presentation of one or more of the following depressive symptoms: could not stop feeling sad; feeling alone; feeling everything in life went wrong; feeling like they couldn’t do anything right; feeling lonely, sad, or unhappy; or facing difficulty having any fun.</td>
</tr>
<tr>
<td>Gender Identity</td>
<td>The “socially constructed roles, behaviors, activities, attributes, and opportunities that any society considers appropriate for men and women, boys and girls and people with non-binary identities,” (World Health, Organization, 2020). The many types of gender identities include man, woman, bigender, agender, genderqueer, or androgyne, among others, which may evolve over time, culture, or context (Polderman et al., 2018).</td>
<td>Participants were asked both in the quantitative myPlan baseline survey as well as in the recruitment script of the qualitative phase to select which of the following terms most closely aligns with their gender identity: male, female, or gender diverse (e.g., non-conforming, genderqueer, non-binary, two-spirited, etc.)</td>
</tr>
<tr>
<td>Sex assigned at birth</td>
<td>The binary (male or female) sex designation made by a medical professional, midwife, or birth attendant that is based on one’s genitalia, reproductive organs, or genetic testing (American Psychological, Association, 2015; Polderman et al., 2018).</td>
<td>Participants were quantitatively asked in the baseline survey of the myPlan THS about gender identity both in terms of how they identify and whether that identity is consistent or different from the sex/gender designation they were given at birth by a medical professional/parent/birth attendant.</td>
</tr>
<tr>
<td>Cisgender</td>
<td>Broad category of gender identity where one’s gender identity aligns with the sex assigned at birth (American Psychological, Association, 2015; Polderman et al., 2018).</td>
<td>The myPlan THS quantitatively measured if participants considered themselves to be cisgender, meaning whether they experience a gender identity consistent with the sex they were assigned at birth.</td>
</tr>
<tr>
<td>Vulnerability/ Diathesis</td>
<td>Stable, although not immutable, traits and behaviors that predispose individuals to specific mental health outcomes (Hankin &amp; Abela, 2005).</td>
<td>During the qualitative phase, participants were asked about psychobehavioral factors such as online preferences and behaviors, gender norms and expectations, and social connectedness.</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Stress</td>
<td>The body’s response to an event or exposure that challenges its natural processes (Franke, 2014; Hankin &amp; Abela, 2005).</td>
<td>While not directly measured in the quantitative phase, stress was used to clarify and expand on questions in the qualitative interviews that asked about experiences within their dating relationships that caused stress, meaning were challenging to their physical, mental, or emotional functioning or wellbeing.</td>
</tr>
<tr>
<td>Risk factor or Stressor</td>
<td>The event or exposure that triggers that physiologic response, but unlike vulnerability these factors do not necessarily give insight into the causal mechanism that led to the response (Hankin &amp; Abela, 2005).</td>
<td>While not measured in one specific question, in both the quantitative and qualitative phase risk factors or stressors were used to guide interpretation of data and included experiences such as DDA or ADV, as well as exposures to norms or online trends such as the expectation to send intimate photos by text or DM.</td>
</tr>
<tr>
<td>Resilience</td>
<td>“Factors that make a person resistant to the deleterious effects of stressors,” (Hankin &amp; Abela, 2005).</td>
<td>During the qualitative phase, participants were asked about their self-perceptions and expression (both digitally and offline), social connectedness, digital safety behaviors, self-care behaviors and priorities, and the availability and use of resources.</td>
</tr>
</tbody>
</table>
Table 3.2 Measures from the myPlan Teen Health Study to be used for the quantitative phase of the proposed dissertation research

<table>
<thead>
<tr>
<th>Variables</th>
<th>Measures</th>
<th>Items</th>
</tr>
</thead>
</table>
| Digital Dating Abuse               | Adapted Cyber Aggression in Relationships Scale (CARS) & Cyber Dating Abuse Questionnaire (CDAQ); 8 items 5-point Likert | Technology is important in relationships. Over the last six months, how often did the person (or people) you dated use technology in these ways? (Response options: Never, Seldom, Sometimes, Often, Always).  
1. Left posts or messages that threatened to destroy your property or physically harm you  
2. Sent or uploaded photos, images, videos with intimate or sexual content without your permission  
3. Checked your mobile phone or social media accounts without your permission  
4. Hacked into your social media accounts  
5. Posted, shared, or messaged you online to embarrass, shame, insult, or harass you  
6. Asked for or pressured you into messaging, posting, or sharing sexual information/images online when you didn’t want to  
7. Used technologies to control where you are and/or who you are with  
8. Pretended to be another person online to test you |
| Depressive Symptoms                | PROMIS tool: Depression Sub-scale; 8 items, 5-point Likert               | These questions are about what you’ve been feeling this past week. (Response options: Never, Almost Never, Seldom, Often, Almost Always)  
1. I could not stop feeling sad  
2. I felt alone  
3. I felt everything in my life went wrong  
4. I felt like I couldn’t do anything right  
5. I felt lonely  
6. I felt sad  
7. I felt unhappy  
8. It was hard for me to have fun |
| Gender Identity                    | 1 item, 7 response options                                               | What term most closely aligns with your gender identity?  
1. Male  
2. Female  
3. Gender-diverse (e.g. non-conforming, genderqueer, non-binary, two-spirited, etc.)  
4. Trans male  
5. Trans female  
6. Something else  
7. Not sure |
| Sex Assigned at Birth              | 1 item, 2 response options                                               | What sex were you assigned at birth (on your original birth certificate)?  
1. Male  
2. Female |
| Adolescent Dating Violence         | Conflict in Adolescent Dating Relationships Inventory- Short Form; 5 sub-scales, 5-point Likert | Some partners do things that are hurtful during arguments or disagreements. Over the last six months, how often did the person (or people) you were dating do these things during an argument or disagreement? (Response options: Never, Seldom, Sometimes, Often, Always)  
**Physical Sub-Scale**  
1. They kicked, hit, or punched me.  
2. They slapped or pulled my hair.  
**Sexual Sub-Scale**  
3. They touched me sexually when I didn’t want them to.  
4. They forced me to have sex when I didn’t want to.  
**Threats Sub-Scale**  
5. They threatened to hurt me.  
6. They threatened to hit or throw something at me.  
7. They threatened me with a weapon (i.e., gun, knife)  
**Verbal Sub-Scale**  
8. They spoke to me in a hostile or mean tone of voice.  
9. They insulted me with put-downs.  
**Relational Sub-Scale**  
10. They said things to my friends about me to turn them against me.  
11. They spread rumors about me. |
References


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Adolescent Digital Dating Abuse and Depressive Symptoms:
Differences in Experiences and Impact by Sex

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Conflicts of Interest: There are no conflicts of interest to report.
Abstract

Background

Roughly 20% of US adolescents are expected to have experienced some form of digital dating abuse (DDA) in the past year. Current evidence is mixed on gender differences in the types, severity, and frequency of online conflict in general; however, there is consistent evidence to suggest that these experiences lead to increases in depressive symptoms, with mixed evidence on differences between males and females. Understanding these online stressors that are contributing to the increasing and concerning current trends in adolescent depression in the US is critical.

Purpose

The purpose of this study was to understand the relationship between adolescent DDA and symptoms of depression. Using baseline data from a larger randomized trial, this study explored the association of experience of DDA with mental health symptoms among cisgender adolescents experiencing teen dating violence (TDV).

Methods

A secondary data analysis of the baseline survey with cisgender adolescents aged 15-17 was conducted. Both t-tests and linear regression were used to identify any differences between males (n=101) and females (n=391) in DDA frequency and depressive symptoms, as well as to explore sex assigned at birth as a moderator of the relationship.

Results

Depressive symptoms among this sample were half a standard deviation higher than the national average. Both controlling/monitoring and sexual DDA were associated with depressive symptoms, even after controlling for other forms of TDV. Females had a significantly (p = 0.022) higher mean frequency of depressive symptoms (M 2.37, SD 0.79) than males (M 2.17, SD 0.96), as well as experiencing more prevalent and frequent experiences of sexual DDA. The relationship between sexual DDA and depressive symptoms was significant among females in
both adjusted and unadjusted models. There was no relationship between males’ experiences of either form of DDA and depressive symptoms in either adjusted or unadjusted models.

Conclusion

Digital dating abuse is associated with depressive symptoms in adolescents, over and above other forms of teen dating violence. While we found no gender differences in the mean frequency of DDA overall, increases in sexual DDA were associated with higher levels of depressive symptoms for females but not for males.
Introduction

An estimated 14.4% of approximately 274,000 nationally representative US adolescents ages 12-17 years old were found to have had at least one past-year major depressive episode in 2018, with prevalence higher among adolescent females (21.5%) than males (7.7%) (Rice et al., 2019). In the 2017 Youth Risk Behavior Survey (YRBSS), 31.5% of students in the US reported persistent sadness or hopelessness almost every day for two or more weeks (Kann et al., 2018). Adolescent susceptibility to mental health disorders is well documented, as indicated by the high prevalence of depression, anxiety, and antisocial behaviors (Bosch et al., 2012; Sacks, 2003). The implications of mental health disorders in adolescence can be severe or life-threatening (Bosch et al., 2012; Hodgdon et al., 2018).

The etiology of adolescent mental health disorders is multifaceted, as both biological and social/environmental stressors are associated with the emergence and presentation of various health outcomes (Ballard et al., 2015; Karatekin, 2018; Roberts & Lopez-Duran, 2019; Schilling, Aseltine, & Gore, 2007). For example, digital dating abuse (DDA) is a stressor in unhealthy adolescent dating relationships where partners use technology to inflict harm or power over one another (Al-Alosi, 2017; Calvete, Gámez-Guadix, & Borrajo, 2019; Temple et al., 2016). Other terms that may be found in the literature regarding DDA include electronic aggression, electronic harassment, digital intimate partner abuse, online harassment, digital coercive control, technology-based coercive behavior, or technology-facilitated abuse (Al-Alosi, 2017; Mishna, McLuckie, & Saini, 2009; Smith-Darden, Kernsmith, Reidy, & Cortina, 2017; Watson, 2010). There are many forms of DDA such as: cyberstalking (i.e. using a device or internet to track a partner’s whereabouts); hacking (accessing, manipulating, or controlling someone’s device or account without permission); cyberbullying or online harassment (violently and repeatedly provoking, distressing, or belittling an individual) (Nasaescu et al., 2018); sexting coercion (manipulating or forcing someone to sext, or send intimate content via text message); or posting false or unwanted information or
photos about someone, controlling who, how, when, or on what platform one’s partner
digitally communicates or interacts with others, among other harmful behaviors (Reed, 2015).
Some of these are legally incriminating in nature, such as online fraud or identity theft
(Finkelhor et al., 2020; Lupton, 2017). Others, however, are largely unacknowledged legally
or can be achieved without creating the digital footprint needed to file a legal or corporate
case (Finkelhor et al., 2020).

The rapidly growing body of evidence around DDA suggests that at least 20% of US
adolescents are expected to have experienced some form of DDA in the past year (Hinduja
& Patchin, 2020; Temple et al., 2016; Lu, Van Ouytsel, & Temple, 2021; Zweig et al., 2013,
2014). For example, the seminal DDA study by Zweig et al. (2013) among 3745 male- and
female-identifying middle and high school participants and found that 23.3% of males and
28.8% of females reported past-year DDA (Zweig et al., 2013). Prevention of DDA and safe,
responsible digital citizenship on social media, phones, and other digital platforms are not
uniformly taught to adolescents, an oversight that may contribute to experiences or uses of
these harmful behaviors (Öztürk, 2021). Only a few studies have examined associations
between DDA and depressive symptoms separately from other forms of teen dating violence
(TDV) (Hinduja & Patchin, 2020; Lu, Van Ouytsel, & Temple, 2021; Reed et al., 2017). One
example of research estimating prevalence of DDA and its relationship with depressive
symptoms was in the nationally representative, cross-sectional study among 2,218 middle
and high school students ages 12-17, Hinduja & Patchin (2020), which found a high
prevalence of DDA (28.1%) and observed that the students who reported depressive
symptoms were four times as likely to have also reported DDA victimization (Hinduja &
Patchin, 2020). These findings were similar to findings on DDA prevalence and association
with depressive symptoms in the study by Lu, Van Ouytsel, & Temple (2021), in which a
significant relationship between DDA victimization and depressive symptoms was observed
when explored cross-sectionally (Lu, Van Ouytsel, & Temple et al., 2021). However, in their
longitudinal assessment of three annual surveys between 2013 – 2015 among 1042 ethnically diverse high school students from seven high schools in Southeast Texas, Lu and colleagues (2021) also found that DDA victimization reported one year was not significantly associated with depressive symptoms the following year (Lu, Van Ouystel & Temple (2021). Further adding both insight and complexity to the equation, Reed and colleagues (2017) in their cross-sectional self-report survey of n=703 high school students (382 females, 314 males) ages 14-17 at one large, suburban Midwestern high school campus found that females reported a significantly more distress (78.8%) than males (57.4%) after experiencing any type of DDA (measured as online sexual coercion, direct aggression, and controlling/monitoring) (Reed et al., 2017). Data for this analysis was from the baseline survey of the CDC-funded research project myPlan Teen Health Study (THS) (PI: Glass, 1R01CE002979-01), an ongoing randomized control trial among more than 600 adolescents nationwide to adapt a technology-based safety decision aid for teens in unhealthy dating relationships (Glass et al., 2021).

Methods

Purpose & Aims

As mentioned, the purpose of this secondary data analysis was to understand the relationship between experiences of adolescent digital dating abuse and symptoms of depression and if the relationship differed by sex of the victim. This quantitative analysis was part of a larger mixed methods dissertation research study that explored both testable associations with mental health symptoms presented in this paper as well as qualitative accounts of adolescents with lived experiences of DDA. The quantitative specific aims of this study were:

Aim 1. Assess the prevalence and frequency of digital dating abuse experienced by adolescents with recent dating violence experience and explore if these experiences differ by sex.
Hypothesis 1. The overall frequency of digital abuse will not differ significantly by sex.

Aim 2. Test the associations between digital dating abuse and adolescent symptoms of depression. Explore if these associations differ by sex.

Hypothesis 2. Experiences of digital dating abuse will be positively associated with depressive symptoms, such that as digital dating abuse frequency increases, controlling for other forms of dating violence, self-reported depressive symptoms will increase.

Hypothesis 3. The strength of associations between digital dating abuse and mental health outcomes will differ by sex, after controlling for sexual and physical dating violence.

Parent Study

The parent study for this analysis was the myPlan Teen Health Study (THS), a randomized control trial (PI: Glass, 1R01CE002979-01) which aims to adapt and test an evidence-based safety decision aid and planning tool for use among US adolescents in unsafe dating relationships. To be eligible for the myPlan THS, adolescents had to be between ages 15-17, speak English, report current or past 6-months dating or casual relationships, an experience of dating violence in one or more of those dating/romantic relationships, and access to a safe device (e.g., smartphone, tablet, or computer) to safely access the myPlan THS website. The aims of myPlan THS were separate from the aims of this analysis and related dissertation study. Between December 2020 and July 2021, the myPlan THS recruited a national sample of n=614 eligible 14 to 17-year-old adolescents of all gender identities for their baseline survey. A diverse, national sample of teens across race/ethnicities, states, and contexts (e.g., urban or rural) was recruited into the myPlan THS sample with the help of youth research assistants and community partners who collaborated with the research team to promote the study via social media by posting recruitment materials and videos, as well as snowball/word of mouth methods. Upon completion of the
baseline survey, teens in the myPlan THS were randomly assigned by the study website to either the intervention (myPlan app) or control arm. For this analysis, baseline data from both the control and intervention groups of the myPlan THS were included as the measures of interest for these two groups were the same and the baseline survey was administered prior to exposure to their respective treatment arms.

**Subsample for this Study**

The subsample for this study included those that identified as male or female to the question “What sex were you assigned at birth? (on your original birth certificate)” and identified as boy or girl on the question about gender identity. Participants were asked about gender identity with the question “What term most closely aligns with your gender identity?” Response options included male, female, trans male, trans female, gender non-conforming/non-binary/agender/genderqueer, something else, and not sure. We excluded those who did not respond “boy” or “girl” to the question on gender identity, In addition, we excluded two participants who reported that their sex assigned at birth was different from their self-reported gender identity.

**Measures**

*Demographics.* As noted above, gender identity was measured using the question “What term most closely aligns with your gender identity?” Response options included male, female, trans male, trans female, gender non-conforming/non-binary/agender/genderqueer, something else, and not sure. Sex assigned at birth was asked using the following question, “What sex were you assigned at birth (on your original birth certificate)?” with male or female as response options.

*Digital dating abuse (DDA).* DDA was measured over the past six months using myPlan Teen Health Study-specific questions, which were based on similar questions found in the Cyber Aggression in Relationships Scale (CARS) and Cyber Dating Abuse Questionnaire (CDAQ) (Borrojo, Gámez-Guadix, Pereda, & Calvete, 2015; Watkins, Maldonado, & DiLillo,
Participants were asked about the frequency of events with the response options of never, seldom, sometimes, often, and always. A factor analysis of the 8 items revealed that two domains were present: sexual DDA and controlling/monitoring DDA. Controlling or monitoring DDA included experiences of being hacked online, having devices or accounts checked without permission, having their activity or location tracked or monitored, being tested with a fake account, as well as receiving threats of harm/destruction and/or messages or posts to embarrass/shame/insult/harass. The Cronbach’s alpha for this subscale was 0.82. Sexual DDA included experiences of partners uploading/sending sexual photos or videos without permission, asking/pressuring into sharing sexual information or images, as well as receiving messages or posts to embarrass/shame/insult/harass. The Cronbach’s alpha for this subscale was 0.75.

Conflict in Adolescent Dating Relationship Inventory – Short Form (CADRI). CADRI is a well-validated tool used to measure the frequency of adolescent dating violence experiences using a 5-point response scale over the past six months (Never, Seldom, Sometimes, Often, Always) (Cascardi et al., 2018; Courtain & Glowacz, 2018; Fernández-González, Wekerle, & Goldstein, 2012). Included were five subscales, comprised of 11 items: physical abuse (they slapped me or pulled my hair; they hit, kicked, or punched me), sexual abuse (they touched me sexually when I didn’t want them to; they forced me to have sex when I didn’t want to), verbal abuse (they spoke to me in a hostile or mean tone of voice; they insulted me with put-downs), relational abuse (they said things to my friends about me to turn them against me; they spread rumors about me), and threats (they threatened to hurt me; they threatened to hit me or throw something; they threatened me with a weapon). Items were scored by taking the mean of the items for each subscale.

PROMIS Pediatric Depressive Symptoms – Short Form 8a. The PROMIS Pediatric Depressive Symptoms – Short Form 8a was used which contains 8 items asking about self-reported depressive symptoms in the past week in the form of feeling sad/unhappy, feeling
alone/lonely, and feeling as though everything is going wrong/nothing is right. Response options included never, almost never, sometimes, often, and almost always. This measure was originally developed as part of a National Institutes of Health (NIH) initiative for pediatric populations, which has since been revised and adapted to assess specific health outcomes among individuals 8 to 17 years of age (Varni et al., 2014).

**Analysis**

Of the n=493 females and males in this dataset, there was only one person with missing data (3 CADRI questions left unanswered out of 11 items, or 73% of responses). As the CADRI mean frequency score could not be calculated for this participant, they were dropped from the analysis, leading to a final analytic sample of n=492 (n=101 males, n=391 females).

T-tests were conducted to explore differences in DDA frequency between males and females. Bivariate regression was used to test the association between the continuous independent variable of overall DDA frequency and the continuous dependent variable of depressive symptoms. Multiple linear regression of both sexually aggressive and controlling/monitoring DDA on the mean frequency of depressive symptoms was conducted using both unadjusted models and adjusted models controlling for other forms of dating violence (including physical and sexual as measured by the CADRI). These regression models. Additional regression models were then conducted to determine if the association between DDA and depressive symptoms differed between males and females. Specifically, these models examined overall DDA and the two sub-scales of DDA, sex, and the interaction of sex and DDA. The physical and sexual abuse sub-scales of the Conflict in Adolescent Dating Relationships Inventory (CADRI) were included as covariates. The other sub-scales (verbal, threats, and relational abuse) were excluded due to the potential interpretation of these events as happening online, therefore limiting our ability to effectively compare digital vs. in-person forms of abuses’ association with adolescent depressive
symptoms. For example, the verbal abuse sub-scale includes two items, “they insulted me with put-downs” and “they spoke to me in a hostile or mean tone of voice,” both of which could be interpreted as happening online. The same is true for relational abuse (“they spread rumors about me,” and “they said things to my friends to turn them against me”) and threats (“they threatened to hurt me” and “the threatened to hit me or throw something at me”). Therefore, to avoid confusion in the interpretation of the adjusted regression models, these sub-scales were excluded from analysis.

**Statistical Power**

A power analysis performed to determine the detectable effect size, given there were 391 females and 101 males in this subsample of the myPlan THS. This study was able to determine significance if the difference in the frequency of DDA between males and females had an effect size of 0.28 or greater with power=0.81 and alpha=0.05. Another power analysis was performed to examine the difference by sex in the correlation between DDA and mental health detectable. We are able to detect a difference of 0.27 between the two correlations with power=0.83 and alpha=0.05.

**Results**

**Sample demographics**

Table 4.1.1 presents the sample characteristics of the 492 adolescents who identified as male or female in the myPlan Teen Health Study (THS) baseline survey (391 females, 101 males). Sample participants were predominantly non-Hispanic (77.9%) and either White/Caucasian (57.5%) or Black/African American (30.9%). The average age was 16 years old and ranged from 15 to 17 years old. Most participants (61.4% of males, 65% of females) were no longer in contact with the partner being referred to in their survey responses.

**DDA prevalence by sample characteristics**

Table 4.1.2 outlines the prevalence of DDA in the past 6 months by sample characteristics, and Table 4.1.3 outlines mean frequency of DDA in the past 6 months,
ranging from 0 (never) to 4 (always) experiencing DDA. Differences between males and females will be discussed in the next section. Prevalence of DDA did not differ significantly by other demographic characteristics. Looking at age differences, 15-year-old teens reported higher prevalence of both sexual DDA (n=77, 68.8%) and controlling/monitoring DDA (n=79, 78.2%) than those ages 16 or 17. DDA overall was equally prevalent across all age groups with no significant differences (n=96, 85.7% 15yo; n=139, 86.3% 16yo; n=184, 84% 17yo). Comparing DDA by racial identity, white participants self-reported the highest prevalence of DDA overall (n=247, 87.3%), although the prevalence of sexual DDA (n=180, 63.6%) and controlling/monitoring DDA (n=221, 78.1%) were lower than other racial groups. Black/African American participants reported the highest prevalence (n=120, 79%) of controlling/monitoring DDA but the lowest prevalence (n=87, 57.2%) of sexually aggressive DDA. The lowest prevalence of sexual DDA (n=48, 64.9%) was experienced by those belonging to the “other” race category. Regarding ethnicity, those who identified as Hispanic reported higher prevalence (n=74, 68.5%) of sexual DDA than non-Hispanic participants (n=234, 60.9%), however experiences of controlling/monitoring DDA did not vary by whether participants identified as Hispanic (n=83, 76.9%) or non-Hispanic (n=234, 60.9%).

At the relationship level, those in the boyfriend/girlfriend/partner phase experienced about the same prevalence (n=88, 77.2%) of controlling/monitoring DDA as those who were no longer in contact with the person they dated/talked to (n=246, 77.9%) or were in the talking phase (n=71.0%). But the same could not be said for sexual DDA, which was significantly (chi2=28.24, p=0.000) more prevalent among those no longer in contact (n=225, 71.2%) than those in committed boyfriend/girlfriend/partner relationships (n=52, 50.0%) or in the talking phase (n=31, 45.6%). Those in longer relationships over 1.5+ years in duration reported both the highest prevalence (n=42, 87.5%) of controlling/monitoring DDA than shorter relationships, although the lowest prevalence (n=29, 60.4%) of sexually aggressive DDA than any other relationship duration. Sexually aggressive DDA had the highest prevalence
(n=46, 76.7%) among those in 9 to 11 month-long relationships. Worth repeating given the high prevalence of DDA found, all participants in the myPlan THS had a recent (within 6 months) experience of dating violence in order to be eligible for the study.

**Sex differences in DDA, TDV, and depressive symptoms**

Overall, 85.2% reported any experience of DDA in the past six months, with fewer participants self-reporting experiences of sexually aggressive forms of DDA (n=308, 62.6%) than controlling/monitoring forms of DDA (n=375, 85.2%). Cisgender males and females reported similar prevalence (n=85, 84.2% males; n=334, 85.4% females) and mean frequency (M 0.85, SD 0.89 males; M 0.89, SD 0.79 females) of DDA overall.

As shown in Table 4.1.4, although males reported a higher mean frequency of overall TDV (M 1.06, SD 0.72) than females (M 1.02, SD 0.75), this difference was not significant (ES=0.06; p=0.611). By contrast, females reported a higher mean frequency of DDA overall (M 0.89, SD 0.79) than males (M 0.85, SD 0.89), although this difference was again not significant (ES=0.05; p=0.65). In other words, males in this sample experience digital dating abuse and other forms of dating violence as frequently as females.

When differentiated by sub-type, there were no significant differences between males and females in the mean frequency of online controlling and monitoring behaviors in their dating relationships (males M 0.97, SD 1.01; females M 0.92, SD 0.91; p=0.679). However, females reported more frequent sexual DDA victimization than males (Table 4; M 0.83, SD 0.93 for females, for males M 0.64, SD 0.89), and while this relationship was non-significant the effect size (ES) was considerable (ES=0.20, p=0.076). Similarly, females had higher means than males for sexual TDV (M 0.77, SD 1.02, females; M 0.56, SD 0.88 males); however, these differences were non-significant (p=0.062) but had an ES of 0.21.

This sample experienced higher than average depressive symptoms for this age group, with an overall T score of 56.8 (SD=3.0). Per the national PROMIS scores for pediatric populations, this is half a standard deviation higher than the national pediatric average of 50
(Rothrock, Amtmann, & Cook, 2020; www.healthmeasures.net). The mean frequency of depressive symptoms was high for both males and females, however females (M 2.37, SD 0.79) had a statistically significantly higher (ES=0.27, p=0.015) frequency of depression than males (M 2.15, SD 0.96).

**Relationship Between Sexual DDA and Depressive Symptoms**

Table 4.1.5 outlines the unadjusted & adjusted coefficients and p-values of the regression analyses of DDA on depressive symptoms, organized by type of DDA and controlling for physical and sexual TDV. Regression of the sexual DDA sub-scale on mean depressive symptoms shows that as frequency of sexual DDA increased, there was a statistically significant increase in depressive symptoms (p<0.001), which remaining significant after adjusting for physical and sexual TDV (p=0.037). The unadjusted interaction term between sex and sexually aggressive DDA was significantly associated with depressive symptoms (p=0.034) and remained significant when adjusting for physical and sexual TDV (p=0.027). This indicates that the relationship of sexual DDA and depression is moderated by sex, regardless of whether physical and in-person sexual TDV are experienced concurrently.

Table 4.1.6 stratifies these same regression models by sex to facilitate interpretation of the interaction. Females had a significant positive relationship between sexual DDA and depressive symptoms (unadjusted b=0.21, p<0.001) in the adjusted models. Male experiences of sexual DDA had no association with depressive symptoms, for both unadjusted (b=0.00, p=0.990) and adjusted models. In other words, as sexual DDA frequency increased, depression frequency increased for females; however, this was not true for male participants.

**Relationship Between Controlling/Monitoring DDA and Depression**

Looking at the controlling/monitoring DDA sub-scale, both the unadjusted (p<0.001) and adjusted models (p=0.030) were significant, with increased frequency of controlling/monitoring DDA associated with increased depressive symptoms. However, the
interaction between sex and controlling/monitoring DDA was not significant in both unadjusted (p=0.078) and adjusted models, showing that sex does not moderate the relationship between controlling/monitoring DDA and depressive symptoms.

When regression models were stratified by sex, females had a significant and stronger positive relationship between controlling/monitoring DDA and depressive symptoms (b=0.22, p<0.001) that was greater in magnitude than the coefficient among males (b=0.06, p=0.510). In other words, as controlling/monitoring DDA increased, depression increased for females; however, there are no association between controlling/monitoring DDA and depressive symptoms among males.

**Discussion**

There are many important takeaways from this study. For one, males experienced digital dating abuse and other forms of TDV as frequently as females in this sample. This aligns with evidence from the 2015 National Intimate Partner and Sexual Violence Survey (NISVS), which found that 1 in 3 men and women experienced contact sexual violence, physical violence, and/or stalking by an intimate partner in their lifetime (Smith et al., 2018).

The mean frequency (on a five-item scale (from 0- Never to 4- Always) of overall DDA was low despite its high prevalence, with a mean frequency of 0.85 (SD 0.89) for males and 0.89 (SD 0.04) for females among this sample of people who have experienced at least one form a relationship abuse in the last 6 months. There were no significant differences between males and females in the mean frequency of controlling/monitoring behaviors or sexual DDA (Table 4.1.4). This differs from the findings of other studies, although ability to compare is limited given no prior studies on DDA have used an online sample of teens with past six-months experience of dating violence. One comparison that can be drawn between this study and other national or large studies on TDV or intimate partner violence is in the sampling limitations. For this study, there were far more females (n=391) recruited than males (n=101), which is a common and persistent issue among studies on violence and abuse.
Unfortunately, although predictably, the small sample of males compared to females adversely impacted the effect sizes this study was powered to detect. Good examples of this are sex differences in the mean frequency of DDA, in which females reported more frequent sexual DDA victimization than males, a relationship that was non-significant but the effect size (ES) was considerable (ES=0.20, p=0.076). This study was only able to detect significance if the ES was 0.27 or greater. Similarly, females had higher means than males for sexual TDV (M 0.77, SD 1.02, females; M 0.56, SD 0.88 males), and while differences were non-significant (p=0.062), the ES was 0.21. Future research that is powered to detect smaller effect sizes is advised and would help to clarify sex differences in DDA frequency.

The baseline sample of the myPlan THS experienced higher than the national average depressive symptoms for this age group. This warrants attention given that the main outcome for this study was depressive symptoms, although causation cannot be determined given the cross-sectional nature of this study. What can be determined is that, among this online, national sample of n=491 teens with a history of TDV who experience higher than average depressive symptoms, 84.5% reported some form of DDA. More research is needed in this area to understand what leads to and/or perpetuates this dynamic, with particular attention to the sexual forms of online conflict, harassment, and abuse experienced by adolescents.

There were significant relationships in this sample between DDA and depressive symptoms. The unadjusted regression coefficients between both types of DDA and mean frequency of depressive symptoms were significant (Table 4.1.5) showing a positive association between depressive symptoms and DDA. Sex moderated the relationship between sexual DDA and depressive symptoms, but not between controlling/monitoring DDA and depressive symptoms (Table 4.1.5). When controlling for physical and sexual TDV, only sexual DDA maintained a significant relationship with depressive symptoms. In other words, controlling/monitoring DDA did not have an impact on adolescent depressive symptoms over
and above other forms of dating violence. Similarly, when other forms of TDV were in the models or controlled for among females, DDA was not significantly associated with depressive symptoms. When regressions were disaggregated by sex, the models showing the association between both sub-types of DDA and depressive symptoms were significant only among females, not males (Table 4). This aligns with the aforementioned study by Reed and colleagues (2017) which found in their cross-sectional self-report survey of n=703 high school students (382 females, 314 males, 2 gender non-conforming) ages 14-17 at one large, suburban Midwestern high school campus (Reed et al., 2017) which found that females reported a significantly higher degree of distress than males across all three DDA sub-scales (sexual coercion, direct aggression, & controlling/monitoring) (Reed et al., 2017).

These findings have important implications for research and practice. For instance, screening adolescents for their experiences of digital dating abuse if they are at-risk for depression is an important use of time and energy for clinicians and researchers who work with youth. In addition, more research is needed to understand the contributing factors and underlying mechanisms of sex or gender differences in DDA-related depressive symptoms.

**Strengths**

This study provides insight into the complex relationship between DDA and depressive symptoms, shedding light on areas for additional research, collaboration, and prevention. The myPlan THS sample was not only sizeable, but also provided the self-reports of national, online, racially/ethnically diverse sample population with limited missing data and previously validated, reliable outcome measures. Further, factoring DDA into two types, sexual vs. controlling/monitoring, allowed for a richer exploration into the relationship between DDA and depressive symptoms among male and female adolescents.

**Limitations**

While the myPlan DDA Scale provided an important foundation for understanding the mental health implications of digital dating abuse, further development and refinement of
these measures is needed to improve the depth of the DDA construct captured in the findings. An additional limitation included our exclusion of the data from the gender non-conforming youth in the myPlan THS baseline survey. This study was also under-powered for its analysis, which led to only being able to detect moderate to large effect sizes. Future research ought to not only work to overcome or mitigate these limitations, but also build on the most recent advances in social media-related research that incorporates the views of the many disciplines contributing to the evidence around online behavior and wellbeing (e.g. those who study information technology, communications, psychology, public health).

**Conclusion**

This study found that digital dating abuse is commonly experienced among adolescents with a recent history of dating violence. Controlling/monitoring DDA behaviors, while more prevalent, had a weaker association with depressive symptoms than sexual DDA. The relationship between sexual DDA and depressive symptoms was moderated by the sex of the participant, with females disproportionately experiencing DDA-related depressive symptoms compared to males.
<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Total (n=492)</th>
<th>Males (n=101)</th>
<th>Females (n=391)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age, n(%)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>112 (22.8)</td>
<td>29 (28.7)</td>
<td>83 (21.2)</td>
</tr>
<tr>
<td>16</td>
<td>161 (32.7)</td>
<td>29 (28.7)</td>
<td>134 (34.3)</td>
</tr>
<tr>
<td>17</td>
<td>222 (44.5)</td>
<td>45 (44.6)</td>
<td>174 (44.5)</td>
</tr>
<tr>
<td><strong>Racial Identity, n(%)</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>283 (57.5)</td>
<td>55 (54.5)</td>
<td>228 (58.3)</td>
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<tr>
<td>Black or African American</td>
<td>152 (30.9)</td>
<td>31 (30.7)</td>
<td>121 (31.0)</td>
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<tr>
<td>Other</td>
<td>106 (21.5)</td>
<td>19 (18.8)</td>
<td>87 (22.3)</td>
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<tr>
<td><strong>Ethnicity, n(%)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>109 (22.1)</td>
<td>25 (24.3)</td>
<td>84 (21.5)</td>
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<tr>
<td>Non-Hispanic</td>
<td>385 (77.9)</td>
<td>78 (75.6)</td>
<td>308 (78.5)</td>
</tr>
<tr>
<td><strong>Current Relationship Status, n(%)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Talking phase</td>
<td>62 (12.6)</td>
<td>13 (12.9)</td>
<td>49 (12.5)</td>
</tr>
<tr>
<td>Boyfriend/girlfriend/partner</td>
<td>114 (23.2)</td>
<td>26 (25.7)</td>
<td>88 (22.5)</td>
</tr>
<tr>
<td>No longer in contact</td>
<td>316 (64.2)</td>
<td>62 (61.4)</td>
<td>254 (65.0)</td>
</tr>
<tr>
<td><strong>Relationship Duration, n(%)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 3 months</td>
<td>79 (16.1)</td>
<td>20 (19.8)</td>
<td>59 (15.1)</td>
</tr>
<tr>
<td>3-5 months</td>
<td>96 (19.5)</td>
<td>20 (19.8)</td>
<td>76 (19.4)</td>
</tr>
<tr>
<td>6-8 months</td>
<td>96 (19.5)</td>
<td>21 (20.8)</td>
<td>75 (19.2)</td>
</tr>
<tr>
<td>9-11 months</td>
<td>60 (12.2)</td>
<td>10 (9.9)</td>
<td>50 (12.8)</td>
</tr>
<tr>
<td>1-1.5 years</td>
<td>77 (15.7)</td>
<td>17 (16.8)</td>
<td>60 (15.4)</td>
</tr>
<tr>
<td>1.5+ years</td>
<td>84 (17.1)</td>
<td>13 (12.9)</td>
<td>71 (18.2)</td>
</tr>
<tr>
<td><strong>Dating Violence, n(%)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any physical abuse</td>
<td>171 (35.0)</td>
<td>46 (44.7)</td>
<td>126 (32.2)</td>
</tr>
<tr>
<td>Any threats</td>
<td>257 (52.2)</td>
<td>59 (57.3)</td>
<td>199 (50.9)</td>
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<tr>
<td>Any sexual abuse</td>
<td>244 (49.6)</td>
<td>40 (38.8)</td>
<td>205 (52.4)</td>
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<tr>
<td>Any verbal abuse</td>
<td>460 (93.5)</td>
<td>94 (91.3)</td>
<td>368 (94.1)</td>
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<td>Any relational abuse</td>
<td>321 (65.2)</td>
<td>71 (68.9)</td>
<td>351 (84.6)</td>
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<tr>
<td><strong>Digital Dating Abuse, n(%)</strong></td>
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<td></td>
</tr>
<tr>
<td>Overall</td>
<td>419 (85.2)</td>
<td>85 (84.2)</td>
<td>334 (85.4)</td>
</tr>
<tr>
<td>Controlling/Monitoring DDA</td>
<td>375 (76.2)</td>
<td>79 (78.2)</td>
<td>296 (75.7)</td>
</tr>
<tr>
<td>Sexually Aggressive DDA</td>
<td>308 (62.6)</td>
<td>55 (54.5)</td>
<td>253 (64.7)</td>
</tr>
<tr>
<td><strong>Depressive Symptoms, T-score (SD)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>56.8 (3.0)</td>
<td>54.5 (3.1)</td>
<td>56.8 (3.0)</td>
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</table>
Table 4.1.2 DDA prevalence by sample characteristics, n(%) & Pearson chi-square results

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Any DDA n(%)</th>
<th>N (%)</th>
<th>Sexual DDA n(%)</th>
<th>N (%)</th>
<th>Controlling/ Monitoring DDA n(%)</th>
<th>N (%)</th>
<th>Gender Identity</th>
<th>N (%)</th>
<th>Age</th>
<th>N (%)</th>
<th>Racial Identity</th>
<th>N (%)</th>
<th>Ethnicity</th>
<th>N (%)</th>
<th>Current Relationship Status</th>
<th>N (%)</th>
<th>Relationship Duration</th>
<th>N (%)</th>
</tr>
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<tbody>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Males</td>
<td></td>
<td>15</td>
<td></td>
<td>White</td>
<td></td>
<td>Hispanic</td>
<td></td>
<td>Talking phase</td>
<td></td>
<td>Less than 3 months</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Females</td>
<td></td>
<td>16</td>
<td></td>
<td>Black or African American</td>
<td></td>
<td>Non-Hispanic</td>
<td></td>
<td>Boyfriend/girlfriend/partner</td>
<td></td>
<td>3-5 months</td>
<td></td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>17</td>
<td></td>
<td>Other</td>
<td></td>
<td></td>
<td></td>
<td>No longer in contact</td>
<td></td>
<td>6-8 months</td>
<td></td>
</tr>
<tr>
<td>Gender Identity</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Relationship Duration</td>
<td></td>
<td>9-11 months</td>
<td></td>
<td></td>
<td></td>
<td>1-1.5 years</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>1.5+ years</td>
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### Table 4.1.3 DDA mean frequency by sample characteristics, M(SD) & ANOVA results

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Any DDA</th>
<th>F (p-value)</th>
<th>Sexual DDA</th>
<th>F (p-value)</th>
<th>Controlling/ Monitoring DDA</th>
<th>F (p-value)</th>
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</thead>
<tbody>
<tr>
<td>Gender Identity</td>
<td></td>
<td>0.20 (0.6527)</td>
<td>3.17 (0.0758)</td>
<td>0.97 (1.01)</td>
<td>0.17 (0.6794)</td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>0.85 (0.89)</td>
<td></td>
<td>0.64 (0.89)</td>
<td></td>
<td>0.92 (0.91)</td>
<td></td>
</tr>
<tr>
<td>Females</td>
<td>0.89 (0.79)</td>
<td></td>
<td>0.83 (0.93)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>2.50 (0.0828)</td>
<td>4.67 (0.0097)</td>
<td></td>
<td></td>
<td>0.90 (0.44074)</td>
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</tr>
<tr>
<td>15</td>
<td>0.99 (0.85)</td>
<td></td>
<td>0.95 (0.98)</td>
<td></td>
<td>1.02 (0.95)</td>
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</tr>
<tr>
<td>16</td>
<td>0.92 (0.82)</td>
<td></td>
<td>0.86 (0.93)</td>
<td></td>
<td>0.95 (0.95)</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>0.79 (0.78)</td>
<td></td>
<td>0.65 (0.87)</td>
<td></td>
<td>0.88 (0.91)</td>
<td></td>
</tr>
<tr>
<td>Racial Identity</td>
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<td>0.16 (0.8537)</td>
<td>1.02 (0.3602)</td>
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<td>0.92 (0.3999)</td>
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<td>White</td>
<td>0.90 (0.80)</td>
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<td>0.83 (0.95)</td>
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<td>0.93 (0.91)</td>
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<tr>
<td>Black or African American</td>
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<td>0.73 (0.92)</td>
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<td>1.02 (0.99)</td>
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<tr>
<td>Other</td>
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<td>0.85 (0.89)</td>
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<td>0.84 (0.87)</td>
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<tr>
<td>Ethnicity</td>
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<td>0.19 (0.6671)</td>
<td>1.13 (0.2879)</td>
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<td>0.00 (0.9884)</td>
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<td>Hispanic</td>
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<td>0.87 (0.90)</td>
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<td>0.93 (0.90)</td>
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<tr>
<td>Non-Hispanic</td>
<td>0.87 (0.82)</td>
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<td>0.77 (0.93)</td>
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<td>0.93 (0.94)</td>
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<tr>
<td>Current Relationship Status</td>
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<td>3.10 (0.0459)</td>
<td>11.33 (0.000)</td>
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<td>0.36 (0.6971)</td>
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<tr>
<td>Talking phase</td>
<td>0.87 (0.90)</td>
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<td>0.69 (0.95)</td>
<td></td>
<td>0.97 (1.00)</td>
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</tr>
<tr>
<td>Boyfriend/girlfriend/partner</td>
<td>0.72 (0.76)</td>
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<td>0.46 (0.72)</td>
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<td>0.87 (0.92)</td>
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</tr>
<tr>
<td>No longer in contact</td>
<td>0.94 (0.81)</td>
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<td>0.93 (0.95)</td>
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<td>0.95 (0.92)</td>
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<tr>
<td>Relationship Duration</td>
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<td>1.00 (0.4003)</td>
<td>0.92 (0.5850)</td>
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<td>1.62 (0.1470)</td>
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<tr>
<td>Less than 3 months</td>
<td>0.77 (0.87)</td>
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<td>0.81 (0.98)</td>
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<td>0.74 (0.95)</td>
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<tr>
<td>3-5 months</td>
<td>0.90 (0.78)</td>
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<td>0.88 (0.95)</td>
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<td>0.91 (0.87)</td>
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<tr>
<td>6-8 months</td>
<td>0.80 (0.73)</td>
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<td>0.69 (0.83)</td>
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<td>0.87 (0.88)</td>
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<td>9-11 months</td>
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<td>0.91 (0.86)</td>
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<td>1.5+ years</td>
<td>0.99 (0.80)</td>
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<td>0.76 (0.86)</td>
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<td>1.13 (0.93)</td>
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<td>Dating Violence</td>
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<td>39.16 (0.000)</td>
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<td>Any physical abuse</td>
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<td>1.11 (1.02)</td>
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<td>1.43 (0.96)</td>
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<tr>
<td>Any threats</td>
<td>1.25 (0.86)</td>
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<td>1.09 (1.01)</td>
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<td>1.35 (0.97)</td>
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<tr>
<td>Any sexual abuse</td>
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<td>1.11 (1.02)</td>
<td></td>
<td>1.21 (1.01)</td>
<td></td>
</tr>
<tr>
<td>Any verbal abuse</td>
<td>0.93 (0.82)</td>
<td></td>
<td>0.84 (0.93)</td>
<td></td>
<td>0.98 (0.94)</td>
<td></td>
</tr>
<tr>
<td>Any relational abuse</td>
<td>1.13 (0.87)</td>
<td></td>
<td>1.06 (0.99)</td>
<td></td>
<td>1.17 (1.01)</td>
<td></td>
</tr>
</tbody>
</table>

*Total possible range of 0 – 4. Response options included: 0 (Never), 1 (Seldom), 2 (Sometimes), 3 (Often), & 4 (Always)
# Table 4.1.4 T-tests to compare gender differences in means across continuous variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Total (M, SD)</th>
<th>Males (n=101) (M, SD)</th>
<th>Females (n=391) (M, SD)</th>
<th>Cohen’s d</th>
<th>t</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Teen Dating Violence (TDV)</strong></td>
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</tr>
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<td>Physical abuse</td>
<td>0.53 (0.90)</td>
<td>0.74 (1.00)</td>
<td>0.47 (0.87)</td>
<td>0.31</td>
<td>2.75</td>
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<td>Sexual abuse</td>
<td>0.72 (1.00)</td>
<td>0.56 (0.88)</td>
<td>0.77 (1.02)</td>
<td>-0.21</td>
<td>-1.87</td>
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<td>Threats</td>
<td>0.86 (1.05)</td>
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<td>0.84 (1.06)</td>
<td>0.11</td>
<td>0.97</td>
<td>0.331</td>
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<td>Relational abuse</td>
<td>1.26 (1.25)</td>
<td>1.27 (1.19)</td>
<td>1.26 (1.27)</td>
<td>0.01</td>
<td>0.09</td>
<td>0.928</td>
</tr>
<tr>
<td>Verbal abuse</td>
<td>2.13 (1.06)</td>
<td>2.10 (1.04)</td>
<td>2.14 (1.07)</td>
<td>-0.03</td>
<td>-0.29</td>
<td>0.773</td>
</tr>
<tr>
<td>Overall</td>
<td>1.02 (0.75)</td>
<td>1.06 (0.72)</td>
<td>1.02 (0.75)</td>
<td>0.06</td>
<td>0.51</td>
<td>0.611</td>
</tr>
<tr>
<td><strong>Digital Dating Abuse (DDA)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Controlling/Monitoring DDA</td>
<td>0.93 (0.93)</td>
<td>0.97 (1.01)</td>
<td>0.92 (0.91)</td>
<td>0.05</td>
<td>0.41</td>
<td>0.679</td>
</tr>
<tr>
<td>Sexual DDA</td>
<td>0.79 (0.92)</td>
<td>0.64 (0.89)</td>
<td>0.83 (0.93)</td>
<td>-0.20</td>
<td>-1.78</td>
<td>0.076</td>
</tr>
<tr>
<td>DDA Overall</td>
<td>0.88 (0.81)</td>
<td>0.85 (0.89)</td>
<td>0.89 (0.79)</td>
<td>-0.05</td>
<td>-0.45</td>
<td>0.652</td>
</tr>
<tr>
<td>Depressive symptoms <strong>c</strong></td>
<td>2.33 (0.04)</td>
<td>2.15 (0.96)</td>
<td>2.37 (0.79)</td>
<td>-0.27</td>
<td>-2.44</td>
<td>0.015</td>
</tr>
</tbody>
</table>

---

**Notes:**

- a. Conflict in Adolescent Dating Relationships Inventory (CADRI)
- b. Adapted myPlan THS DDA measures
  1. Factor 1: Controlling/Monitoring Behaviors
  2. Factor 2: Sexual Aggression
- c. PROMIS sub-scale

---

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Table 4.1.5 Regression of DDA on Depressive Symptoms, Adjusting for Physical & Sexual Teen Dating Violence (TDV)

<table>
<thead>
<tr>
<th>Model 1</th>
<th>Unadjusted</th>
<th>Adjusted</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>b (p-value)</td>
<td>b (p-value)</td>
</tr>
<tr>
<td>Model 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sexual DDA</td>
<td>0.18 (0.000)</td>
<td>0.09 (0.037)</td>
</tr>
<tr>
<td>Physical TDV</td>
<td>.</td>
<td>0.13 (0.005)</td>
</tr>
<tr>
<td>Sexual TDV</td>
<td>.</td>
<td>0.08 (0.068)</td>
</tr>
<tr>
<td>Model 2</td>
<td>Controlling/Monitoring DDA</td>
<td>0.18 (0.000)</td>
</tr>
<tr>
<td></td>
<td>Physical TDV</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td>Sexual TDV</td>
<td>.</td>
</tr>
<tr>
<td>Model 3</td>
<td>Sexual DDA</td>
<td>-0.00 (0.988)</td>
</tr>
<tr>
<td></td>
<td>Sex</td>
<td>0.05 (0.672)</td>
</tr>
<tr>
<td></td>
<td>Sexual X Sex</td>
<td>0.21 (0.034)</td>
</tr>
<tr>
<td></td>
<td>Physical TDV</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td>Sexual TDV</td>
<td>.</td>
</tr>
<tr>
<td>Model 4</td>
<td>Controlling/Monitoring DDA</td>
<td>0.06 (0.429)</td>
</tr>
<tr>
<td></td>
<td>Sex</td>
<td>0.08 (0.535)</td>
</tr>
<tr>
<td></td>
<td>Controlling/Monitoring DDA X Sex</td>
<td>0.16 (0.078)</td>
</tr>
<tr>
<td></td>
<td>Physical TDV</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td>Sexual TDV</td>
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Table 4.1.6 Stratified Regression of Sexual & Controlling/Monitoring DDA on Depressive Symptoms by Gender ID, Adjusting for Physical & Sexual Teen Dating Violence (TDV)

<table>
<thead>
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<th>Gender ID</th>
<th>Unadjusted b (p-value)</th>
<th>Adjusted b (p-value)</th>
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</thead>
<tbody>
<tr>
<td>Females (n=391)</td>
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<td></td>
</tr>
<tr>
<td><strong>Model 1</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sexual DDA</td>
<td>0.21 (0.000)</td>
<td>0.14 (0.003)</td>
</tr>
<tr>
<td>Physical TDV</td>
<td>.</td>
<td>0.18 (0.000)</td>
</tr>
<tr>
<td>Sexual TDV</td>
<td>.</td>
<td>0.03 (0.495)</td>
</tr>
<tr>
<td><strong>Model 2</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Controlling/Monitoring DDA</td>
<td>0.22 (0.000)</td>
<td>0.14 (0.004)</td>
</tr>
<tr>
<td>Physical TDV</td>
<td>.</td>
<td>0.14 (0.007)</td>
</tr>
<tr>
<td>Sexual TDV</td>
<td>.</td>
<td>0.06 (0.134)</td>
</tr>
<tr>
<td>Males (n=101)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Model 3</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sexual DDA</td>
<td>0.00 (0.990)</td>
<td>- 0.12 (0.308)</td>
</tr>
<tr>
<td>Physical TDV</td>
<td>.</td>
<td>0.08 (0.491)</td>
</tr>
<tr>
<td>Sexual TDV</td>
<td>.</td>
<td>0.46 (0.011)</td>
</tr>
<tr>
<td><strong>Model 4</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Controlling/Monitoring DDA</td>
<td>0.06 (0.510)</td>
<td>- 0.05 (0.651)</td>
</tr>
<tr>
<td>Physical TDV</td>
<td>.</td>
<td>0.08 (0.523)</td>
</tr>
<tr>
<td>Sexual TDV</td>
<td>.</td>
<td>0.19 (0.158)</td>
</tr>
</tbody>
</table>
CHAPTER 4.1: QUANTITATIVE RESULTS

References


A Diathesis-Stress Perspective on Adolescent Experiences of Digital Dating Abuse:
Qualitative Findings of a Mixed Methods Study

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Target Journals: Journal of Interpersonal Violence, Journal of Adolescence, or Cyberpsychology, Behavior, & Social Networking

Conflicts of Interest: There are no conflicts of interest to report.
Abstract

Background
Current evidence suggests that approximately 20% of adolescents experienced digital dating abuse (DDA) in the past year. The emotional and mental health implications of these experiences are multifaceted and can be severe, warranting an investigation into not only their quantitative associations with DDA, but also the qualitative narratives of lived DDA experiences.

Purpose
The purpose of this study was to understand the relationships between adolescent digital dating abuse and symptoms of depression found a secondary data analysis of the 2021 myPlan Teen Health Study baseline survey among 492 adolescents ages 15-17. Using an explanatory mixed methods approach, this study explored both testable associations with mental health symptoms and qualitative accounts of adolescents with lived experiences of DDA. The diathesis-stress model was used to guide the study and interpretation of findings.

Methods
Primary data collection via in-depth, remote semi-structured interviews among a separate online convenience sample of 20 adolescents (n=6 boys, n=13 girls, n=1 gender non-conforming) ages 15-17 from the East Coast and Colorado. Interviews were transcribed verbatim and directed content analysis was used to code and organize findings. Those findings were then used to further explain the quantitative results and to identify any other forms of DDA that were not captured in the measures.

Results
Although there was not a difference in frequency of DDA between males and females, a secondary analysis in the quantitative phase found that the relationship between DDA and depressive symptoms was moderated by sex, controlling for physical or in-person teen dating violence. Qualitative interviews provided context to these results in terms of the complexity of DDA experiences and gender differences, as well as the socio-ecological factors that make teens differentially vulnerable or resilient to DDA-related depressive symptoms.

Conclusion
This study underscores the salience of online conflict and dating abuse to adolescent mental health and
wellbeing for both males and females as predicted by the diathesis stress model. It also provides insights as to how gender identity affects the relationship between DDA and depression. Evidence-based, multifaceted, and interdisciplinary responses and resources are needed to support adolescents who experience DDA.
Introduction

Digital abuse is one of many terms used to describe the repeated abuse, harm, or aggression by one person against another using digital technology (Lucero, Weiss, Smith-Darden, & Lucero, 2014). When these behaviors occur between dating partners, it is more often referred to as digital dating abuse (DDA) or cyber dating abuse (Reed et al., 2017). Current evidence suggests that approximately 20% of US adolescents are expected to have experienced some form of DDA in the past year (Hinduja & Patchin, 2020; Temple et al., 2016; Lu, Van Ouytsel, & Temple, 2021; Zweig et al., 2013). The studies that have explored gender differences in DDA found that boys are equally or more likely than girls to experience DDA, apart from sexual forms of online aggression that are disproportionately experienced by girls (Hinduja & Patchin, 2020; Temple et al., 2016; Reed et al., 2016, 2017). Early evidence suggests that experiences of DDA are associated with depressive symptoms, however neither the predisposing factors, coping mechanisms, nor the temporal relationship between DDA and depressive symptoms are well understood (Tran et al., 2021). For example, a recent meta-analysis of 17 studies by Tran et al. (2021), found gender identity did not moderate the relationship between cybervictimization and adolescent depression (Tran et al., 2021). By contrast, findings from a smaller, less generalizable study among a convenience sample of 703 9th-12th grade students at a large suburban Midwestern high school, Reed et al. (2017) found that experiences of DDA significantly predicted emotional distress among girls, but not boys (Reed et al., 2017). Similar results were found in the quantitative portion of this mixed methods study (Kennedy et al., 2022), in which gender identity was found to moderate the relationship between digital dating abuse and depressive symptoms among an online, national sample of n=491 adolescent boys and girls. To give better insight into these contrasting conclusions, which have important implications for violence prevention research, practice, and advocacy, the purpose of the qualitative phase of this mixed methods study was to explore the perceived context, associated vulnerabilities, and narratives around DDA and depressive symptoms.

Secondary Data Analysis

A secondary data analysis of the baseline survey among 492 teens who experienced dating violence from the CDC funded research project called the myPlan Teen Health Study (THS) (PI: Glass, 1R01CE002979-01) was performed. The myPlan THS was a randomized control trial that worked to
develop and test a safety decision aid among a national, online sample (total n=614) of teens ages 15-17 in unhealthy or abusive dating relationships (Glass et al., 2021). Sample participants were predominantly non-Hispanic (77.9%) and either White/Caucasian (57.5%) or Black/African American (30.9%). Measures for the quantitative analysis are described in detail in Kennedy et al, 2022, including the measure for DDA which used study-specific questions based on items found in the Cyber Aggression in Relationships Scale (CARS) and Cyber Dating Abuse Questionnaire (CDAQ) (Borrajo et al., 2015; Watkins, Maldonado, & DiLillo, 2018; Zweig et al., 2013). A factor analysis of the 8 items revealed that two domains were present: sexual DDA and controlling/monitoring DDA.

Multiple linear regression was used to understand the strength of association between digital dating abuse and depressive symptoms, examining sex assigned at birth as a moderator and controlling for physical and (in-person) sexual dating violence. While gender identity was the original variable of interest for the quantitative phase, the vast majority of the myPlan THS was cisgender, therefore limiting what this study was powered to detect and resulting in the decision to limit analysis to cisgender male and female participants. Thus, results demonstrated that the mean frequency of depressive symptoms was high for both males and females, however females (M 2.37, SD 0.79) had a statistically significantly higher (p = <0.022) frequency of depression than males (M 2.17, SD 0.96). Further, as sexual DDA increased in frequency, there was a statistically significant increase in mean depressive symptoms. This relationship remained significant when controlling for sexual and physical dating violence. The relationship between sexual DDA and depressive symptoms differed for males and females. Among females, the relationship was significant when controlling for other forms of TDV. However, there was no relationship between males’ experiences of DDA and depressive symptoms. The relationship between controlling/monitoring DDA and depressive symptoms was moderated by sex, and, although it affected more teens in this sample, controlling/monitoring DDA didn’t have an effect on depressive symptoms when controlling for other forms of TDV.

Current Study

The purpose of the qualitative phase of this explanatory mixed methods study was to use qualitative data to further understand and contextualize the relationships found between adolescent digital dating abuse and depressive symptoms, examining differences by sex (Kennedy et al., 2022). The qualitative
phase used a narrative research design (Creswell et al., 2007). More specifically, we focused on the narrative/what was said during the interviews, worked with the participant to collect their stories and put their experiences in chronological order, and then “restoried” the transcribed data during analysis into a more linear, organized framework (Creswell et al., 2007). The theoretical foundation for this study was the diathesis-stress model, or vulnerability-stress model, which was first developed in the 1960s to ground understanding in the physiological, psychosocial, and environmental risk factors that potentiate various vulnerabilities and lead predisposed individuals to develop mental health outcomes (Clark et al., 2017; Franke, 2014; Hankin & Abela, 2005; Schneiderman et al., 2008). As shown in Figure 1, the diathesis-stress model explores the relationship between the larger themes of stressors (such as digital dating abuse or teen dating violence), vulnerability/resilience (e.g. social connectedness), health outcomes (e.g. depressive symptoms). At the core of the adapted diathesis-stress model for this study are the intersecting identities that adolescents are actively developing and exploring during this life stage. The term intersecting identities draws from the theoretical framework of intersectionality, a term first coined by Kimberlé Crenshaw in the early 1990s to describe the critical analytical perspective that “intersecting power relations influence social relations across diverse societies as well as individual experiences in everyday life,” (Bowleg, 2012). For the qualitative phase, participants were asked about their preferred gender pronouns, which varied slightly from the myPlan THS’ measure for gender identity that asked participants to specify male, female, trans male, trans female, gender non-confirming, questioning, or other.

Methods

**Setting.** This study was conducted remotely among a convenience sample of 15–17-year-old adolescents who self-reported having had an experience of DDA in the past year. The original design was to conduct interviews in-person in Maryland, but pandemic-related adjustments required the study to become entirely remote. Interviews were thus conducted via Zoom and participants were asked to find a private, quiet space in their home, if possible, to ensure an uninterrupted and safe space for discussion. Most participants were able to find a room to themselves, although three or four of the participants had to care for/attend to either a sibling or grandparent at some point during the interview. Participants were
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requested to turn on their cameras to verify their identity and ensure their privacy/safety before consenting and enrolling them in the study.

Participants. Given this research was part of a mixed methods dissertation study in which the qualitative phase was designed to help explain or expand on the quantitative phase, the sampling strategy for the interviews was designed to mimic the myPlan THS sample. Inclusion criteria for the myPlan THS required participants to be between 15-17 years old, speak English, have safe access to the internet/a device, and have a past-6-month experience of dating violence. Likewise, the inclusion criteria for the qualitative phase included being 15-17 years old, speak English, have safe access to the internet/a device, and have a past-6-month experience of digital dating abuse. This was defined according to the items in the myPlan THS and included whether a partner had in the past year: left threatening posts or messages, sent unwanted sexual content, pressured or coerced them into sharing sexual info/images, checked phone or social media accounts without permission, hacked into online accounts, controlled/monitored whereabouts or activity online, used a fake account/info, or posted, shared, or messaged you online to embarrass, shame, insult, or harass.

Initially, the qualitative study focused on adolescents who reside in Maryland. This shifted to a national sampling strategy to better reflect changes in the myPlan THS sampling strategy from site-specific (Maryland & Missouri) to national. An additional shift was made to past-year experiences of DDA when participants repeatedly struggled to recall when the events occurred after the pandemic. Participants were recruited primarily from an online, social media-based snowball technique. More specifically, flyers and a study-specific Instagram page were circulated among youth advisory boards, colleagues, and weekly announcement newsletters circulated by Johns Hopkins University. Once the inclusion criteria was expanded to anywhere in the US, colleagues from the research team’s professional network in North Carolina, Alabama, and Colorado helped to disseminate recruitment flyers and messaging. Recruitment was capped at n=20 once all types of DDA in the myPlan THS were represented as well as when sample demographics were more evenly distributed.

Data collection. The semi-structured interviews were conducted between March – October 2021, lasted approximately 45-60 minutes each and were conducted remotely through a password-protected Zoom session. A semi-structured interview guide was used to elicit participant responses around
perceived psychobehavioral factors that impact experiences of digital dating abuse. Interviews consisted of two parts: first, participants were asked general questions about being a teenager online, the role of technology in teen relationships, and perceived mental/emotional impact of adolescent socialization online, particularly with dating partners. The second half consisted of an evidence-based, interactive biographical mapping, or timeline, activity (Andersson et al., 2019; Chen, 2018; Schubring et al., 2019).

During the first part, participants were asked about perceived trends in online dating, who they turn to for support, how to establish or maintain trust with dating partners/others online, and what factors were important to consider when thinking about DDA. Thus, using the timeline activity to elicit specific examples and discussion, the remaining questions and activity focused on self-perceptions of vulnerability (perceptions of norms, expectations, and influences around their gender identity, dating behavior, digital citizenship, and offline social interactions) and resiliency (self-perceived strengths or protections both in-person and digitally, social connectedness, digital safety norms and behaviors, self-care behaviors and priorities, and the availability and use of resources). Initially the sequence of interview components was the reverse, with the timeline activity coming before the general questions, but this was reorganized after feedback was sought from the first two participants. More specifically, one participant gave feedback immediately after their interview that reversing these may be helpful, and the other was given a choice after enrolling and voiced preference for answering general questions before doing the timeline activity. As recommended by Kallio, Pietila, Johnson, & Kangasniemi (2016) for development of a semi-structured interview guide, reflexive discussions and internal testing of the interview with the study team (two doctoral-level research assistants) were conducted, as well as expert assessment from the doctoral candidate’s committee members and various community stakeholders from Baltimore- and Denver-based youth-centered programs. This helped to ensure a balanced perspective and maintain accountability regarding the biases and assumptions introduced by the research team, particularly when deciding on wording and order of questions.

Audio recordings from the interviews and a partial screenshot of the timeline activity (face/name of participant were not captured, only what the participant drew) temporarily stored on the researcher’s local computer drive before being securely uploaded to the internal SharePoint server. This same server was used to draft and store the verbatim, de-identified transcripts created manually by the research team.
A preliminary codebook and coding protocol was established before data collection began, with directed content analysis identified as the best choice for this phase given the strong theoretical foundation of the diathesis-stress model and need for unified constructs across both quantitative and qualitative phases of the study overall. The codebook was developed utilizing input from the researcher’s advisor and faculty mentors, as well as a team of two doctoral-level research assistants (SF & EJ), who also assisted in the transcription and coding of interviews. The first two interviews were coded collectively as a team (during a working meeting) to confirm understanding and quality of the codebook, as well as to ensure consistency and quality of coding across and within interviews. Then transcripts were assigned a primary coder to do the initial coding, with a secondary coder to review for consistency, completeness, and interpretive discrepancies. Regular debriefs with the research assistants were conducted to assess theme development and saturation. To ensure confirmability and trustworthiness of these methods, all analytical decisions, discussions about discrepancies, and evaluations of bias were captured in memos and meeting notes, and the data collector kept a reflexive journal.

**Data Analysis.** As interviews were conducted remotely via Zoom, audio-recordings were captured using the Zoom record feature, temporarily downloaded to the local computer drive, and then uploaded to a secure online server. Audio recordings were manually transcribed and all identifiers removed. Dedoose software was then used to code interviews with the assistance of two research assistants (EJ & SF, both doctoral nursing students) (Dedoose, 2022). Further, research assistants listened to the audio recordings and reviewed transcripts for accuracy before/during coding.

The directed content analysis was carried out in three phases: preparation, organization, and reporting (Assarroudi et al., 2018). For the preparation phase, in addition to developing a sampling strategy and study materials, development of the codebook before the study began. Once the data was collected, transcripts were read once in their entirety, then read again looking for and highlighting according to pre-determined codes. Units of analysis were the transcripts, and coding rules were established on how to describe what Dedoose calls the parent codes (in this study, these were stress, vulnerabilities, resiliencies, and health outcomes) using diathesis-stress model derived definitions. A few child codes were then added based on the study’s focus. For example, under the parent code “stressors,”
the child code “digital dating abuse” was added. Coding rules and parent codes were established by all coders (RK, EJ, & SF) collectively when transcribing the first interview. Subsequent testing was done, this time with each person coding the second interview independently and blind to what others coded. Discrepancies in coding were then discussed and resolved in a team meeting to understand and improve inter-coder reliability, and the doctoral candidate reviewed all transcripts for consistency and thoroughness. (Assarroudi et al., 2018; Vaismoradi et al., 2013).

Coded transcripts were downloaded from Dedoose into Excel pivot tables and matrices in order to identify categories and themes more readily within each code group (stress, vulnerabilities, resiliencies, and health outcomes). Using these matrices to organize and guide discussion, abstraction of the main categories being represented in the transcripts was an iterative process. First, coded excerpts were organized according to four main constructs of adapted diathesis-stress model that guided codebook development: digital dating abuse experiences, vulnerabilities, resiliencies, and health outcomes. Intersecting identities was another category added to capture instances where age or gender-related distinctions were made in interviews regarding online or dating behavior. Next, categories were merged and re-named into the following main and sub-categories: DDA as a stressor, with sub-categories controlling/monitoring behaviors, false accounts/information, and sexual DDA; Perceived Diatheses/Vulnerabilities, with sub-categories individual factors, physical and online environment, and openness & loneliness; Perceived Resiliencies, with sub-categories friends, family, and perceived resources; Perceived Outcomes, with sub-categories depression, anxiety, and changes online; and Intersecting Identities, with sub-categories age/stage of development, gender identity, and LGBTQ+ identity. These formed the basis for how findings are reported below.

Techniques to enhance trustworthiness

There were several techniques used to enhance trustworthiness of the findings and interpretation, several of which have already been mentioned. For example, there was a comprehensive audit trail including memos, meeting notes, codebook changes and development, as well as the categorization and interpretation of key findings. A member check was performed per evidence-based recommendations to improve the representation, participation, and transformational validity (Thomas, 2017). More specifically, one member check was performed with a study participant who voiced enthusiasm for the study and
willingness to proofread the main themes and categories derived from the analysis. Other techniques to enhance trustworthiness included a post-analysis review of interview data to look for any cases that did not fit the categories developed. Reflexive journals were also kept throughout the study by the doctoral candidate to reflect on and make transparent any perceived assumptions or biases. In addition, changes to the codebook and discussion points were documented in memos and meeting notes, along with documentation of the additional codes that were inductively developed using descriptive language when transcript data did not adequately fit within the theoretically-guided a priori codebook.

Results

Digital Dating Abuse as a Stressor

Types of DDA. Participants reported a wide variety of DDA experiences, describing behaviors including coercion to send intimate info/photos, fake accounts or deceptive behavior, harassment, shaming/guilting someone to stay in the relationship, stalking/monitoring behaviors, threats of self-harm in order to manipulate, and demanding an unrealistic amount of online communication/texting/calling. Some qualitative narratives closely aligned with the questions asked in the myPlan THS baseline survey measure for digital dating abuse. For example, the myPlan THS asks whether participants have had their social media accounts hacked by their dating partner. In the qualitative interviews, descriptions of this type of experience were straightforward:

"And I was like pretty shocked because I never gave him that account or anything, and it's private. And it only had like ten followers which, of all people that I knew, but it was pretty shocking how he read the caption when it was like a private account." (P20, 15yo, she/her, CO)

Controlling & Monitoring Behaviors. Some forms of DDA were described as a broader umbrella of perceived behaviors and patterns. Consider one of the myPlan THS baseline measure questions on whether a dating partner had checked the participant’s phone/accounts without permission. When probed, some participants equated this to controlling behaviors in general. As one 16-year-old from Maryland noted, “Online he would get upset if I posted and he like didn't see the pictures first or didn't see what I was wearing first. So it was that kind of thing, but that would happen all throughout the relationship,” (P01, age 17, she/her, MD). These controlling behaviors eventually led her to end the
relationship, describing it as “really overwhelming for me because I’ve never dealt with that,” (P01, 17yo, she/her, MD). Pointing to the importance of placing DDA in context, when a participant in separate interview was asked whether a dating partner had checked her phone/accounts without permission, she discussed how sharing passwords was a sign of trust for her, not abuse:

“Um, I guess this could be seen as somewhat toxic, but like, with one of my exes we like gave each other our Snapchat passwords, because that was our main use of talking to people. So we could actually like go in and see who they’ve been talking to. So that could be viewed as some kind of a toxic thing, but in that case, for me it was like a loyalty, honesty type thing cause they didn’t have anything to hide. And they trusted me with it.” (P08, 17yo, she/her, MD)

False Accounts/Information. When asked about experiences of dating partners using fake accounts to test or manipulate them, several participants agreed with this Colorado teen, “a lot of people would put on a fake persona, and they would say a lot of things that they want to say it real life and say a lot of things that they don’t mean,” (P20, 15yo, she/her, CO). However, teens shared that online boldness and/or adopting a false online persona was a slippery slope that could often lead to more severe and potentially harmful deception, especially on anonymous platforms such as Reddit or Discord. For instance, two participants shared experiences of manipulation by adult predators. Both participants described being in these online relationships for weeks to months before discovering the other person’s identity:

“At first, I thought she was like my age or around my age. But I was 17 at the time, and she was 25. So, we started talking and she had like three kids and stuff like that, and she didn’t tell me about them until after like I seen it on her social media.” (P02, 17yo, she/her, MD)

Another participant discussed how someone used several fake accounts in order to stay in contact after he ended the relationship:

“She was like saying, uh, like just sexual stuff that I wasn't comfortable with. And then she would start sending like photos of herself, like out of nowhere, and I just didn't feel comfortable with that. So then I just decided to block her, but then she added me on like two different accounts... Yeah, she kept on reaching out. She was very weird. She would like pretend to be other girls and then she would like to eventually say that it was her.” (P19, 17yo, he/him, CO)

Sexual DDA. At least four qualitative interview participants (of diverse gender identities) shared that
they experienced coercion online to share sexual/intimate photos, although these experiences were often characterized as a normal part of online dating. For one participant who was uncomfortable sharing intimate information online, resisting this pressure led to serious depressive symptoms:

“And then, I don’t know like exactly like where it happened, but that in its own spiraled into um like I feel really depressed and alone. And like killing myself, basically, from him. And so then that like really was like guilting me into feeling like I had to send them photos of myself.” (P07, 16yo, she/her, MD)

**Suicidal Threats and Coercion.** Other severe DDA experiences described in the qualitative interviews by at least four participants of diverse gender identities included threats of suicide, substance abuse, and/or self-harm by a dating partner. These experiences were described as either a distressing form of manipulation or a misdirected cry for help. Although not mentioned in the myPlan THS baseline survey, the adverse mental and emotional impact of this experience was evident and should be included in future research on DDA:

“I couldn’t really break up with them... And it just like, kind of like, it kind of like make me feel like I’m in like in a prison or something, and it really sucked because she would be like, ‘I’m gonna kill myself,’ or like actually cut and send pictures to her cousins, and her cousin would send pictures to me.” (P17, 17yo, he/him, CO)

**Perceived Diatheses/Vulnerabilities**

**Individual Factors.** When asked about factors that make teens vulnerable to the severity, type, and/or health impact of DDA, explanations varied from individual attitudes/behaviors to macro-level factors such as the type or design of online platforms. At the individual level, participants discussed vulnerabilities such as gender identity, age, maturity, technology use/behaviors, online dating behavior, and online safety/communication practices. Several felt that individual attitude towards social media and attachment to technology could be problematic or instigate/exacerbate teen drama. Participants were split on whether they view social media as an essential part of their life. One participant noted, “I use technology more than I should, probably. I think I rely on it heavily to contact my friends... it’s kind of a bad habit at this point, but I really enjoy conversations and I like conversing with people,” (P5, age 15, she/her, MD). Conversely, some teens vehemently defended the positive aspects of connecting online:
“It's like, I feel like there’s a lot of negativity towards it [social media], and like how much teens focus on it. Which I guess is, like, kind of right, but at the same time, it's like, it serves a purpose, and it serves its purpose really well. Like there's a reason why everybody uses it, and they still use it because it does its job efficiently. Like people are still connected. You can talk, you can see what's going on people's lives, you can learn new things, do new things.” (P13, 17yo, she/her, MD)

Physical and Online Environment. Another consideration was the geographic location of participant. For instance, those living in downtown Baltimore were quick to point out the dangers of adult predators, pornographers, and/or traffickers. While not mentioned by participants living in suburban areas, participants in downtown Baltimore and Denver frequently discussed norms about display of weapons online: “Yeah, like, that's the common thing for boys now, just showing off weapons and showing ‘em with they gun... but they're not about that life really,” (P3, 16yo, she/her, MD). At the relationship level, vulnerability often centered on how well online dating partners knew each other (e.g. met online only vs. in “real life”) and the context of interactions (e.g. video calls vs. social media platforms). One participant, in response to a question about expectations for talking to a potential dating partner online typifies this distinction:

“I think if it's, if you have some sort of connection, whether it's from a mutual friend... or, you know, some sort of connection that vaguely connected you before, I think that means I'd give you a little bit of trust. But if it's someone who you don't know who's contacting you online? I think I would, there’s some sort of skepticism that you have to expect.” (P10, 17yo, he/she/they, PA)

Many reported that people act differently online than they do in person, and that this disconnect was intensified by the user-generated nature of social media content and data-driven algorithms that prioritize content congruent with the user’s worldview. Further, being aware of your online environment and influences were seen as a key consideration in maintaining a healthy relationship:

“Because you're behind this like screen like not having to like actually talk to these people... you know, you can just kind of like say... the worst things you have to say about some person, um, without really having to think about it too much. Um, and then that kind of feeds into like if, if you're hearing somebody talk about your partner that way all the time, it can be easy to kind of like let that seep into like the, the dynamic in your relationship.” (P15, age 17, he/him, AL)
Openness & Loneliness. The anonymous nature of some social media platforms was emphasized repeatedly as a key safety consideration and potential vulnerability in relationships. For instance, one participant flirted/talked to another user on an anonymous platform for months before discovering they had lied about their identity:

“But I guess he did lie a lot because of mutual [Discord] server. Our mutual like people and friends that I know, when I mentioned him and I said what he had told me to them like something about his ethnicity or his age and his state, like everything, I found out, was like a lie about him.” (P20, 15yo, she/her, CO)

Some participants shared that they or their friends would post on social media to cope with difficult emotions. When probed on the helpfulness of this method, most participants agreed with this sentiment:

“When you lose yourself to social media, you feel like you have to share everything with the world… and that's not necessarily what I think is healthy mentally. I know it's broken me down numerous times because I didn't control my uses of social media.” (P05, 15yo, she/her, MD)

Others viewed social media as a marketing and branding platform useful for building social capital:

“Um, I don't post as much anymore because social media can be very toxic. But I do definitely use it to keep in touch with old friends I have, current friends I have, and potential friends. And definitely opportunities like this, how we connected. And just, you know, getting my name out there. That's more so what I'm focused on now.” (P06, 15yo, he/him, MD)

Having social capital did not always equate to having a positive, supportive friend group or resources. Lack of social connectedness, both online and in person, was seen as a serious vulnerability. Some participants admitted that experiences of DDA likely would not have happened if they had not felt lonely or disengaged from their support system, “Honestly, I didn't think that we were super close or super compatible…. I was like, you know, I don't really like you as a person, but you know I was just kind of talking to him because I was like, what else am I going to do?” (P10, 17yo, he/she/they, PA). This often fed into discussions about the importance of having a strong support system, both online and in person.

One participant defined a good friend as someone who is “ultimately there for you, and they have your best interests in mind,” (P04, 15yo, she/her, MD). While the role of friends varied by participant, having a supportive friend network was seen as an important aspect of resiliency both online and offline.
Perceived Resiliencies.

Friends. Asked about what provides resilience to DDA or its outcomes, participants routinely cited social connectedness to a supportive friend group. Friends were particularly valued for their help when coping with experiences of DDA:

"My best friend actually stopped that. He came here and he opened my, my blinds. And he made me get up, he made me keep, keep, put clothes on and go outside and I thank, thank him for that because if it wasn't for him, I think I would have been still in a bed for, for months and months not eating." (P03, 16yo, she/her, MD)

Friends were seen as sentinels for online toxicity/abuse, and provided help by searching for information on dating partners, and communicating important information:

"Everything is like situational. So it's like, like I said, if your friends knew to get leaked online and you see it, you're supposed to immediately text them. You're supposed to make sure they're okay. You're supposed to make sure they know." (P12, 16yo, she/her, NC)

Family. Family was seen as a helpful or reliable resource for the minority of participants. When family connectedness and role models were positive and strong, family members were described as an important protective factor against DDA or its impact. As one participant who experienced belittlement and online harassment from her dating partner described, "I had told him that I come from a family of just a lot of dominant single females. So, you know, it's not much that I take, I take from a male, or anybody in general," (P11, 17yo, she/her, MD). This inspiration empowered her to stand up for herself during conflict and ultimately helped her end the relationship. Another participant shared how her mother was able to help her cope with the aftermath of her breakup by making jokes and lightening the mood: "Yeah, my mom, she would, she would try to make it like a joke and make me think it was funny because she, I don't know, she wanted me to not really care or not really think about it at all," (P9, 16yo, she/her, GA).

By contrast, for some participants, family cultural norms around gender identity and expression limited the support and resources available: "With family, especially if you have like a Mexican family, they just tell you to be a man, to deal with it." (P17, 17yo, he/him, CO). Others expressed that their parents could become a source of stress, requiring constant reassuring, checking in, explanations of social media terminology or functionality, and/or justification for actions: "My mom loves tracking me. She will track me
religiously.” (P16, 17yo, she/her, NC); “I was able to tell my mom about him, and my mom was just kind of, like, are you guys dating? Are you guys, what are you guys? And I was like, we're just talking, mom. She's like, what is that? Like what? [Laughs]” (P18, 17yo, she/her, CO).

Formal Resources. Additionally, access to therapy, the quality of school mental health/counseling resources, and/or the online resources made available or known to the participant were seen as community-level resources and/or areas of vulnerability/resiliency. Of the participants who disclosed having seen a therapist or school counselor for mental health support, all mentioned it as a salient, helpful resource. Accessibility was the primary issue, with one participant describing this struggle well:

“I know it's really hard for a lot of people to access it. I know like three people who are trying, and then one thinks, one's mom thinks all therapists are crazy and are going to commit suicide. Another one had therapy, but it got taken away by the pandemic... I was actually able to get in, even though there was like a waitlist, and it was still a long process. So a lot of people don't go because there's so many barriers.” (P10, 17yo, he/she/they, PA)

Significantly, participants with therapists and supportive family stressed that these resources did not replace the role of supportive friends: “I normally talk to my friends, but like I'll keep that for my IRL ["in real life"] friends... That's who, I don't know, that's just who I would prefer to talk to about things. But if not, I can always talk to like a therapist or someone like that, you know?” (P14, 16yo, he/him, MD). This underscores that one of the important tasks of caregivers, family, and mental health workers is to ensure that an adolescent has a good social support system.

Perceived Outcomes

Depression and Anxiety. The emotional and mental health impact of DDA was seen as significant and often disruptive to relationships, daily life, and/or social wellbeing. Teens reported that DDA resulted in depressive symptoms, anxiety, poor self-image, loneliness, poor school performance, difficulty focusing, and mistrust of others. The frequency of DDA was seen as less impactful than the type of DDA, which has important implications for this study’s quantitative findings. For example, one participant said of her experience of repeated insults and online harassment by a partner, “it made me feel pretty bad. Just, yeah, kind of just bad about myself,” (P04, 15yo, she/her, MD). This same participant reported more severe depressive symptoms after she found out that a dating partner had lied about their identity:
“Like for me crying and stuff like that, it was like a month, maybe a month or two. I wasn’t eating and stuff like that. I was losing a lot of weight and stuff. And my mom would have to force me to eat, and then I just throw it up when she left, because I didn’t wanna eat, I didn’t, I just wanted to be in my room in the dark.” (P03, 16yo, she/her, MD)

Changes Online. Some participants made notable changes as a result of DDA experiences, such as change of platforms used, communication preferences or personal boundaries, online dating behavior, and quality of their relationships with their dating partner or others. Some participants shared how friends and peers turned to social media as an outlet following a conflict, “some people, some people, whenever they’re hurt by social media, they go on social media to like just make themselves happy,” (P19, 17yo, he/him, CO). Another participant described a very different change in online behaviors:

“I just...I stayed away from it for a long, a long time. Like that six months I stayed away from it because I felt like social media was making it worse because they knew about the breakup or whatever, so I just stayed away from it.” (P03, 16yo, she/her, MD)

Intersecting Identities

Age and Stage of Development. There were several teens who felt that age was one the most important considerations regarding DDA, repeatedly emphasizing differences they’ve observed between the DDA experiences of their peers/grade compared to younger or older teens. Importantly, age was often compared or equated to maturity level. Further, while teens of all ages were seen as at-risk for DDA, younger teens were often described as being more likely to exhibit DDA-related depressive symptoms, rely on poor coping mechanisms, and/or escalate the conflict.

“Um, I don't think gender does, but I think age definitely plays a factor… I mean, I’m only 16, I'm barely 16, but I still don't know how the world works. I'm young. If you're even younger than that, you pretty much, you don't know that much. So if you get into an argument about something, I mean really anything, you're not going to know how to work that out.” (P14, 16yo, he/him, MD)

As mentioned, however, teens of all ages were seen as at-risk for DDA because of how normal and/or expected it was to date or flirt at an early age, “I dated real young. Like, in elementary school I was already having like girlfriends and stuff like that,” (P02, 17yo, she/her, MD). Older participants often had experienced DDA more than once in their lifetime. As 17-year-old participant from Colorado shared,
"[My partner told me] like, ‘I like I can't go back to doing meth, and like you're the only reason I stopped.' And like that, like that kind of tricked my like 15-year-old mind to be like, okay, I am responsible to take for, for his mental health, and like not, like that's, that's not okay.” (P18, 17yo, she/her, CO)

In line with this story, several teens felt that that not only can DDA occur at young ages, but also young teens are not immune to more severe and complex forms of online conflict. This was partially explained by the inexperience and naivety that accompanies young age, “Well, if you're younger, then its, it could be really rough because then you could be like naïve or you could just fall for a lot of like dumb tricks.” (P19, 17yo, he/him, CO). Participants underscored that one’s digital literacy, education, and support was not age-dependent, although resources were described as scarce or non-existent for digital citizenship/relationship support. For instance, when asked “are there any resources or anything that you think would be helpful for people who go through [DDA],” one 15-year-old girl from Maryland replied,

“Like online relationships, especially now, are like so new that they're only really picking up now, or they're only like starting to be talked about now that everyone's forced to have one. So, there's not really, at least, no one's really aware of any resources out there.” (P04, 15yo, she/her, MD)

This underscores the need for stronger resource development, support services, and digital citizenship education for adolescents in online dating relationships or talking to/flirting with their peers online.

**Gender Identity.** Some participants felt that gender identity played a role in how people responded to conflict online. Nearly all participants agreed that gender identity did not make a big difference in their risk for DDA but did acknowledge that DDA had a disproportionate impact on the health and social wellbeing of girls compared to boys. This was often attributed to gender norms that exacerbate the fallout of DDA and are commonly reinforced by movies, TV shows, and online games. For example, a girl participant who identified as a “gamer,” acknowledged how the gender stereotypes of the online gaming community impacted interpersonal communication between teens:

“I've been involved in the gaming community for like as long as I can remember… it's always just been like, ‘Oh, well if the girl isn't hot, then why would you play with her?’ and… it's a lot of just sort of like pushing onto like this like one idea you have, and if the girl doesn't fit that idea, then, then why would you communicate with her? Why would you put in the effort?” (P07, 16yo, she/her, MD)
However, toxic, or unhealthy online dating behavior was observed among both boys and girls. There was a general sense that girls use social media more often and/or take social media more seriously than boys: "I feel like girls tend to, or just from my experience, like tend to be more active in like checking in and wanting to talk than guys," (P16, 17yo, she/her, NC); and, “I think that maybe it's like the girls in my life, at least it's easier for them to read into things over text," (P15, 17yo, he/him, AL).

Boys’ problematic behavior was often attributed to their perceived tendency to flirt with multiple people at once, "people would expect for the girls to want a full-blown relationship, but people would expect the guys to just go around playing every girl," (P04, 15yo, she/her, MD). Many felt that boys had less emotional attachment to online relationships in general: “at least from what I've seen guys will talk to you or flirt with multiple people, without any feelings being involved,” (P01, age 17, she/her, Maryland). One participant defended boys his age: "guys who've like hurt other girls, they've got most likely have gotten hurt by another girl before they start hurting others," (P17, 17yo, he/him, CO). This was corroborated by the experiences of two boys who directly admitted to leading on or playing with someone’s feelings after a dating conflict to relieve frustration, suggesting that for some boys, this is a coping mechanism that requires additional research and intervention. This behavior was often described as distressing to their dating partners, as expressed by one 17-year-old teen from Maryland, “Before we're any kind of gender, we're people... a lot of people on social media platforms don't believe that, and they don't think like that,” (P11, 17yo, she/her, MD).

This was especially resonant when discussing sexual forms of DDA. As one participant explained, “I think like, when a girl's nudes get leaked, it gets sent everywhere, like everyone wants to see. Everyone wants to expose a girl. But then, when it's a guy, it's like not a big deal at all," (P12, 16yo, she/her, NC). When probed on reasons for these gender differences in sexual DDA experiences, explanations centered on perceived differences in online attitudes and behaviors, highlighting a critical need to improve messaging, education, and support around sexual consent online:

“I think the guys are more comfortable pressuring you online and probably girls too, and probably non-binary too, but... typically guys feel more comfortable pressuring you online than in real life. So like I would, wouldn't kiss my boyfriend because I had never had my first kiss before, but, and it was like, oh no, like that's fine. And then on, and then later, he would like Snap me, and, you know,
he'd be like [asking for sexual/nude photos].” (P12, 16yo, she/her, NC)

LGBTQ+ Identity. Lastly, two participants identified as LGBTQ+ and noted the protective nature of their gender non-conforming friends and support system: “Because we're all queer, we don't really care as much, or at all, about gender expectations because it's something that's outdated and ancient.” (P10, 17yo, he/she/they, PA). However, simply belonging to a gender or sexual minority did not exempt these participants from experiencing DDA, and gender identity was still equated with power or dominance in a relationship. As this 17-year-old gender non-conforming teen went on to explain:

“I would say there's not like expectations of each other, but I think there's kind of expectations of what people want in a partner, and I think those are still kind of there. But like, you know, like who asked who out, who pays, I think those are going to become a lot less of an issue.” (P10, 17yo, he/she/they, PA)

This was supported by the other queer-identifying 17-year-old participant, who expressed that gender identity was still relevant for those within the LGBTQ+ community and had a direct impact on their online dating relationships: “They ask, 'so are you the girl or the boy in a relationship?' And it just kind of throws me off because like, I'm the girl. You're the girl. We're girls. You know?” (P02, 17yo, she/her, MD). This paralleled responses given by participants in heteronormative dating/talking relationships, “So one thing is, who's going to be dominant, and that's not even just when it comes to the sexual aspect. That's just in general. Who's going to be dominant does play a huge part in a relationship.” (P11, 17yo, she/her, MD).

More research will help elucidate the role of gender norms and expectations on online experiences for gender non-conforming and sexual minority adolescents.

Discussion

There were also several key takeaways from the qualitative findings. For one, participant narratives on their experiences of DDA often mirrored the constructs measured in the myPlan THS, but not all. Given the complex and user-generated nature of the online environment, this heterogeneity of responses was expected. In order to understand who is at risk for online conflict and abuse and how to prevent/mitigate it, particularly among teens, there is the need for instruments and study designs that capture the variations in DDA typology with greater precision and clarity. In particular, several participants made the interviewer clarify and/or directly recommended including questions around the nature of the online
relationship being measured (e.g. “online only” or met “in real life”, etc.). This would help to clarify an important aspect of online relationships and each partner’s risk for adverse mental, emotional, or social outcomes. Perceptions of what made adolescents vulnerable to DDA ranged across all socio-ecological levels, including individual-level factors included demographic characteristics such as age or gender identity, community level factors such as the platforms used or negative peer influences, and broader macro-level factors such as the design of a given social media website. Previous studies have found similar variety in the socio-ecological factors that influence DDA victimization or perpetration (Valido et al., 2020). At the individual level, participants in this study discussed vulnerabilities such as age and maturity, gender identity, social and family connectedness, technology preferences or behaviors, and dating behavior and communication.

Participants were split on whether they viewed social media as an essential part of their life or something that they even enjoyed. There was agreement on the need for improvement in how social media is designed and meeting the needs of adolescents. Lack of social connectedness, both online and in person, was seen as a serious vulnerability, with a few participants admitting that their experiences of DDA likely wouldn’t have happened if they hadn’t felt lonely or disengaged from their support system. While the role of friends was dynamic and varied by participant, having a supportive, attentive friend network was seen as an important aspect of resiliency both online and offline. Friends were also seen as critical to mental health and wellbeing, especially when it came to addressing or coping with conflict. Teens were quick to identify if they had a supportive friend group at the time of their DDA experience, and often this was a deciding factor in how they responded to or recovered from events. Not all participants felt that they could rely on their family or parents for support or look to them as role models for resilience. When family connectedness and role models were positive and strong, family members were described as important protective factor against DDA or its impact on their wellbeing. When these relationships were not strong, imposed, or strained, family norms and expectations limited the support and resources available to participants. If neither friends nor family were seen as supportive or reliable resources, which was the case for at least three participants, then they reported dealing with things on their own/independently, sometimes not even disclosing to friends/family about the relationship. This underscores that one of the more helpful and important tasks of caregivers, family, and mental health
providers/counselors is to ensure that an adolescent has a good support system, whether they’re navigating relationships/conflict online or in person.

Therapists and, when not overburdened, school counselors were seen as helpful sources of support for several qualitative participants. Accessibility was the primary issue, intensified by what many described as over-burdened, frustrating, or inefficient school counseling systems. This reflects current qualitative and quantitative evidence on the quality of school-based mental health services, which are often found to be under-utilized, under-funded, and/or under-staffed (Arora, Alvarez, Huang, & Wang, 2021; Bernard, 2020; Brookover, Hermann, & Deitz, 2021; Duong et al., 2021; Guerra, Rajan, & Roberts, 2019). This is notable because the emotional and mental health symptoms described by participants were often significant and disruptive to relationships, daily life, and/or social wellbeing. Specifically, teens reported experiencing depressive symptoms, anxiety, poor self-image, loneliness, poor school performance/difficulty focusing, becoming cynical and/or distrustful of others as a result of their online experiences. Further, resources for mental health support were reported to be limited and strongly dependent on context, awareness, and support systems. This aligns with existing evidence and reiterates the importance of prioritizing the development and accessibility of formal mental health therapy and support services for adolescents (Berk, Starace, & Glasser, 2021).

Narratives warned against solely relying on mean frequency of DDA to predict depressive symptoms and suggests that other DDA characteristics, such as the type, context, directionality, and longevity of the conflict are important considerations. In other words, some forms of DDA appear to be more distressing than others, even if they occur less frequently. This is unsurprising given that DDA has been measured using a variety of measures that encompasses a broad umbrella of behaviors and experiences (Brown & Hegarty, 2018). The potential severity of responses to DDA victimization supports what other studies have found in that there is a need for more targeted research and interventions to better understand those forms of DDA that appear to have the most severe impact on teen mental health and how to prevent/address these experiences (Duerksen & Woodin, 2021; Miller, 2017; Noonan & Charles, 2009; Strasburger, Zimmerman, Temple, & Madigan, 2019).

Gender identity remains an important aspect of adolescent dating norms & expectations. Particularly for sexual forms of DDA, which the majority of girls in the qualitative interviews describing some form of
this experience. This aligns with findings of a study by Reed et al. (2020), who surveyed n=987 students from one Midwestern high school and found that, although not everyone perceived sexting to be coercive or negative in nature, girls were more likely to report having experienced at least one coercive sexting exchange (52.3% for girls, 23.3% for boys) where their partner repeatedly asked for a sexual/intimate photo until they gave in (Reed, Boyer, Meskunas, Tolman, & Ward, 2020). When probed on reasons for gender inequalities in sexual DDA experiences or outcomes, explanations centered on perceived differences and gender inequities in online attitudes and behaviors, highlighting a critical need to improve messaging, education, and support around sexual consent online. Recent studies have suggested not only measuring instances of sexting among adolescents, but also measures that capture the sexting-related “gratifications” or motivations for an adolescent sexting as well as the expected outcome (Maes & Vandenbosch, 2022; Reed et al., 2020). This may help to strengthen future research in this area, particularly when examining gender similarities and differences. Furthermore, a recent series of meta-analyses (n=23-39 studies each) found that not only are sexting rates thought to have plateaued in the past five years, but also sexting is more strongly associated with sexual behavior and mental health difficulties, with younger adolescents particularly vulnerable to these outcomes (Madigan, Ly, Rash, Van Ouytsel, & Temple, 2018; Mori, Park, Temple, & Madigan, 2021; Mori, Temple, Browne, & Madigan, 2019). This indicates that early education on digital citizenship and sexting are not only recommended but necessary to protect the mental health and wellbeing of young people, particularly given their risk for other forms of online sexual abuse/violation by adult predators (Strasburger et al., 2019).

**Strengths.** There were many strengths to both the quantitative and qualitative portions of this study, such as the age and racial/ethnic diversity for both the quantitative and qualitative phases despite nonrandom sampling. Further, the interactive timeline activity in qualitative phase yielded rich narratives that helped to explain and contextualize the quantitative findings. The theoretical foundation for this study can also be seen as a strength, as it provided a useful and adaptable constructs during coding and analysis as well as interpretation of findings.

**Limitations.** Secondary data analysis-related limitations during the quantitative phase included use of a non-random sample and study-specific DDA measures, which limited generalizability of findings, and possibly construct validity. Similarly, the small convenience sample recruited for the qualitative phase may
not be reflective of the views adolescents across the US as a whole. Further, challenges of remote interviewing post-pandemic limited qualitative recruitment and data collection possibilities, as well as the timeline of study milestones. This is an important consideration, as logistical challenges or access barriers may also have limited who was available and willing to participate at the time of data collection, as well as what was recalled or discussed during the interviews. For instance, during the timeline activity, several participants double-checked timestamps on their phones/messaging apps/social media accounts before drawing on their timeline, only to find that they had incorrectly remembered the month or year of the event. Future research on DDA could help to balance this perspective by not only repeating these efforts among a more representative sample of US adolescents who are online, but also those adolescents who face barriers to technology access or remote interviewing (e.g. those with limited/no internet or whose devices have been confiscated by caregivers). In addition, depending on the research question and need for precision in recall, future studies on digital abuse may benefit from using more rigorous screening techniques, such as having teens verify timestamps of events when being screened for eligibility.

Like many violence-related studies and studies that recruit online samples, there were more girls represented in this study than any other gender identity (n=13 girls, n=6 boys, n=1 non-binary). Oversampling boys and gender non-binary youth in future research is recommended in order to fully understand gender differences and similarities in DDA experiences and outcomes.

Conclusion

Quantitatively, digital dating abuse (DDA) was found to have statistically significant relationship with depressive symptoms among teens, although this relationship was moderated by gender identity. Qualitative narratives in this study not only provided insight on lived experiences of DDA, but also what leads to teens being vulnerable or resilient to its mental health impact, important areas for future research and prevention, as well as ways to strengthen measurement of DDA among adolescents.
Figure 4.2.1 Adapted Diathesis-Stress Model
Table 4.2.1 Qualitative Sample Demographics (Total n=20)

<table>
<thead>
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<th>Characteristic</th>
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</table>
References


The purpose of this explanatory mixed methods dissertation research was to understand adolescent experiences of digital dating abuse and the association of these experiences with adolescent depressive symptoms and if the relationship was moderated by sex. A secondary data analysis of the baseline survey from the CDC funded research project called the myPlan Teen Health Study (THS) was performed for the quantitative phase (PI: Glass, 1R01CE002979-01). This secondary analysis explored the relationship between digital dating abuse (DDA) and depressive symptoms among their national, online sample of n=492 cisgender adolescents (87 males; 334 females) with recent (past 6 months) experiences of dating violence. As only cisgender participants were able to be included in this study, sex assigned at birth was examined as a moderator, and these models controlled for physical and sexual (in-person) sexual teen dating violence (TDV). Expanding on these findings, the qualitative phase used in-depth interviews to better understand adolescent perceptions on factors of vulnerability and resiliency that contribute to DDA experiences and associated mental health outcomes. Remote, semi-structured interviews and virtual timeline activities were conducted among a sample separate of 20 youth (13 female; 6 male; 1 gender nonconforming) ages 15-17 years old representing six states in the East Coast and Midwest. Qualitative findings were organized according to the conceptual model for this dissertation, the adapted diathesis-stress model. To review key findings from both qualitative and quantitative phases in more depth and place them in context with the larger body of evidence around DDA, the following discussion is organized by study aim.

Aim One: Assess the prevalence and frequency of digital dating abuse experienced by adolescents with recent dating violence experience and explore if these experiences differ by sex.

One of the key findings was that DDA was a common experience for both males (n=87, 84.2%) and females (n=334, 85.4%) in the myPlan THS. Since all of the participants had to have experienced dating violence in the past six months in order to be eligible for the parent study, and offline and online forms of dating abuse have been found to be positively associated with one another for over ten years of scientific investigation (Hinduja & Patchin, 2020; Lu et al., 2021; Zweig, Dank, Yahner, & Lachman, 2013), these high proportions are not surprising. In other studies of DDA, past-year or past-semester prevalence was typically between 20% - 35% (Borrajo et al., 2015; Hinduja & Patchin, 2020; Lu, Van Ouytsel & Temple,
2021). While not a study among adolescents, one recent example is by Duerksen & Woodin (2021), who found in their cross-sectional study of n=278 (n=204 women, n=74 men) psychology undergraduate students at one mid-sized Canadian university that 62.5% of their participants self-reported both in-person IPV and DDA (Duerksen & Woodin, 2021). These findings, along with the findings of this dissertation research, support the growing scientific understanding that patterns of DDA and TDV are similar and related among adolescents, posing important considerations for prevention, intervention, and research into either form of conflict.

The results of aim one further showed that males experienced DDA and physical/sexual TDV as frequently as females in this sample. The mean frequency (on a five-item scale from 0- Never to 4-Always) of overall DDA was low, with a mean frequency of 0.85 (SD 0.89) for males and 0.89 (SD 0.79) for females. In other words, violence was a common life experience but did not happen very frequently in the average dating relationship. This is similar to trends seen in studies on dating and intimate partner violence where prevalence is often observed to be high but frequency relatively low in most relationships. An illustrative study is Bonomi et al. (2012), which surveyed a random sample of 271 male and female students at one university about their experiences of dating violence both in terms of prevalence (over 60% of both genders self-reported having experienced any type of dating abuse), and frequency (Bonomi et al., 2012). In that study, most instances of dating violence were only found to happen 2 to 5 times in a given relationship (Bonomi et al., 2012).

Consistent with existing evidence, controlling/monitoring behaviors such as frequently checking in or GPS tracking the location of dating partners were especially prevalent (n=375, 85.2%) compared to sexual DDA such as sexting coercion or threats online (n=308, 62.6%). This is consistent with the findings of other studies such as that by Reed et al. (2017), who used DDA subscales in their cross-sectional study of n=314 boys and n=382 girls in grades 9-12 at a large suburban midwestern high school found that digital controlling/monitoring behaviors were much more prevalent (52.6% boys, 54.9% girls) than either digital sexting coercion (29.6% boys, 34.3% girls) or digital direct aggression (44.2% boys, 48% girls) (Reed et al., 2017). While there were no sex differences between males and females in mean frequency of either form of DDA, regression of sexual DDA and depressive symptoms found that this
relationship was moderated by sex, with females disproportionately experiencing sexual DDA-related depressive symptoms compared to males.

There were no significant differences between males and females in the mean frequency of controlling/monitoring DDA or sexual DDA. This differs from the findings of some studies such as the cross-sectional survey by Leisring and Guimetti (2014) that measured psychological forms of dating/partner abuse online and found that, of the n=213 females and n=58 males in their sample of undergraduates at one university, females reported a significantly higher mean frequency of severe forms of cyber abuse (females’ M =0.64, SD = 3.13; males’ M 5 3.19, SD =10.31; t[268] =3.12, p =.002) (Leisring & Giumetti, 2014). Both this study and ours sampled far fewer males than females, which may have impacted findings. In addition, this study did not have a measure of severity of the forms of DDA. In a less directly comparable study since it measured prevalence rather than frequency, Drouin et al., (2015) sampled n=480 undergraduate students at one university (160 men; 320 women) and found that there was a significant difference in sex of the participants in terms of prevalence of having ever "sexted when s/he did not really want to" (n=210 or 22% for girls, n=89 or 19% for boys) (Drouin, Ross, & Tobin, 2015).

Aim Two: Test the associations between digital dating abuse and adolescent symptoms of depression. Explore if these associations differ by sex.

Regression of the sexual DDA sub-scale on depressive symptoms showed that as frequency of sexual DDA increased, there was a statistically significant increase in mean depressive symptoms (p<0.001), which remained significant after adjusting for physical and sexual TDV (p=0.037). Further, sexual DDA was moderated by sex, even when controlling for physical and sexual TDV. While not fully comparable as it sampled n=278 university psychology students at one Canadian university, this aligns with the study by Duerksen & Woodin (2021) who found that gender moderated the relationship between poor psychological functioning and DDA victimization. However, contrary to our findings, they found that DDA did not have an impact on the mental health over and above other forms of dating violence (Duerksen & Woodin, 2021).

In examination of the controlling/monitoring DDA sub-scale, increased frequency of controlling/monitoring DDA was positively associated with increased depressive symptoms in the
overall sample. However, the interaction between sex and controlling/monitoring DDA was not significant; sex did not moderate the relationship between controlling/monitoring DDA and depressive symptoms. This varies slightly from what Reed and colleagues (2017) found in their cross-sectional self-report survey of 703 high school students ages 14-17 at one large, suburban Midwestern high school campus (Reed et al., 2017). As has been discussed in previous chapters, the females in the Reed et al. (2017) study reported a significantly higher degree of distress than boys when asked about any of the three DDA sub-scales (sexual coercion, direct aggression, & controlling/monitoring) (Reed et al., 2017). However, other studies have supported the finding that DDA is not always connected to depressive symptoms (Baker et al., 2015; Lu et al., 2018). For instance, Lu et al. (2018) in their longitudinal analysis of mental health symptoms among a diverse sample of 641 adolescents from seven high schools across Texas found that DDA was not temporally linked to any mental health outcomes (Lu et al., 2018). However, Lu et al. (2018) did not disaggregate by type of DDA, and so more research is needed to understand the magnitude of association and temporal relationship between controlling/monitoring DDA specifically and depressive symptoms.

These findings have important implications for research and practice. For instance, screening adolescents for depressive symptoms if they disclose experiences of either DDA or other forms of dating abuse is an important and worthwhile use of time and energy for clinicians and researchers who work with youth. In addition, more research is needed to understand the contributing factors and underlying mechanisms of gender differences in DDA-related depressive symptoms. Further, the 491 teens in the baseline sample of the myPlan THS with a history of TDV experienced higher than the national average depressive symptoms for this age group, which makes sense given they all experienced TDV and 85.2% reported some form of DDA. While direct comparisons are not possible, this broadly supports current evidence. For instance, Hinduja and Patchin (2020) in their nationally representative sample of 2218 middle and high school students (12-17 years old) found that offline dating abuse was by far the strongest correlate with DDA even compared to associations with depressive symptoms, sexual intercourse, sexting, and being the victim of cyberbullying (Hinduja & Patchin, 2020). More research is needed in this area to understand what leads to and/or perpetuates
this dynamic, with particular attention to the sexual forms of online conflict, harassment, and abuse experienced by adolescents.

**Aim Three: Use qualitative data from in-depth interviews on adolescent perceptions on the psychobehavioral factors of vulnerability and resiliency that contribute to digital dating abuse and associated mental health outcomes.**

The qualitative phase expanded on these findings by collecting the narratives of 20 teens (13 female; 6 male, 1 gender nonconforming) ages 15-17 who have experienced DDA across the US (6 different states represented: PA, MD, NC, GA, AL, & CO). Participants were a separate sample from the myPlan THS sample and recruited using an online, social media-based snowball technique. Qualitative findings not only provided insight on lived experiences of DDA, but also what leads to teens being vulnerable or resilient to its mental health impact, important areas for future research and prevention, as well as ways to strengthen measurement of DDA among adolescents.

In agreement with this study’s quantitative findings, nearly all participants in the qualitative phase agreed that neither gender identity nor sex assigned at birth made a big difference in whether DDA occurred or not; however, several argued that it did matter in terms of the health impact and social implications. Narratives argued against solely relying on mean frequency of DDA to predict depressive symptoms and suggested that other DDA characteristics, such as the type, context, and trajectory of the conflict are equally important considerations. Perceptions of what made adolescents vulnerable to DDA ranged across all socio-ecological levels, including individual-level factors including demographic characteristics such as age or sex, community level factors such as the platforms used or negative peer influences, and broader macro-level factors such as the design of a given social media website. Interviews further showed it might be necessary to capture DDA context, typology, and severity with greater precision and clarity in order to mitigate the extent and impact of this issue.

Interviews were conducted remotely and consisted of two parts: first, participants were asked general questions about being a teenager online, the role of technology in teen relationships, and perceived mental/emotional impact of adolescent socialization online, particularly with dating partners. The second half of the interview consisted of an interactive biographical mapping, or timeline, activity. The primary
focus of these interviews was on the narratives to elicit narratives around perceived psychobehavioral factors that impact experiences of digital dating abuse. Participants in the qualitative phase of this study reported a wide variety of DDA experiences, with sub-themes including coercion to send intimate info/photos, fake accounts or deceptive behavior, harassment, shaming/guilting someone to stay in the relationship, stalking/monitoring behaviors, threats of self-harm in order to manipulate, and demanding unrealistic communication expectations.

Some qualitative narratives closely aligned with the questions asked in the myPlan THS baseline survey measure for digital dating abuse, supporting the reliability and construct validity of the DDA measures used in the parent study. Other forms of DDA, however, had a broader interpretation. One example was the myPlan THS baseline survey question on whether a dating partner had checked the participant’s phone/accounts without permission, which was equated to toxic, deal-breaking controlling behaviors for some, whereas others shrugged off the question by saying it was normal or no big deal for their partners to have full access to their online accounts, track their location, and/or check their messages without permission. A similar contrast in interpretation was observed when qualitative interview participants discussed experiences of dating partner using fake accounts to test or manipulate them.

At least four participants (of both sexes) in the qualitative interviews shared times when they had been coerced or pressured into sending sexual or intimate photos online, with this common experience sometimes described a normal part of the online dating process. In alignment with the quantitative relationship found between sexual DDA and depressive symptoms in the quantitative phase, participants who discussed being uncomfortable with sharing intimate photos/information online found the experience to be very upsetting and lead to serious depressive symptoms. Other severe DDA experiences included threats of suicide, substance abuse, or self-harm by a dating partner were experienced by at least four participants, both males and females, in the qualitative interviews, described as either a distressing form of manipulation or misdirected cry for help. Although not mentioned in the myPlan THS baseline survey, the adverse mental and emotional impact of this experience was evident and should be included in future research on DDA.

When probed on the factors that make teens vulnerable/resilient to the severity, type, and/or health impact of DDA, qualitative explanations varied from individual attitudes/behaviors to more macro-level
factors such as the type or design of online platforms. At the individual level, participants discussed vulnerabilities such as gender identity, age, maturity level, social connectedness, family connectedness, technology use/behaviors, online dating behavior, or online safety/communication practices. Another important factor was the geographic location of the participant. For instance, those living in downtown Baltimore were quick to point out the dangers of adult predators, child pornographers, and/or traffickers. At the relationship level, vulnerability often centered on how well the online dating partners knew each other (e.g. met online only vs. in “real life”) and the context of interactions (e.g. video calls vs. social media platforms). The deceiving/anonymous nature of certain platforms and social media websites was repeatedly emphasized as an important safety consideration and potential vulnerability in the relationship.

Social support and connectedness were described as critical aspects of whether someone was vulnerable or more resilient to certain mental health outcomes. While the role of friends was dynamic and varied by participant, having a supportive, attentive friend network was seen as an important aspect of resiliency both online and offline. Friends were particularly valued for helping them effectively cope with experiences of DDA and acting as sentinels for toxic or abusive things online, searching for information on dating partners, and communicating important information. Family was seen as a helpful or reliable resource for approximately four or five participants in the qualitative interviews, but not the others. Access to therapy, the quality of school mental health/counseling resources, and/or the online resources made available or known to the participant were all seen as community-level resources and/or areas of vulnerability/resiliency.

In the quantitative phase, sex was found to be a moderator of the relationship between DDA and depressive symptoms. To understand this phenomenon further, participants in the qualitative interviews were also asked about whether they felt gender identity (discussed instead of sex to expand on the male/female differences and allow some precursory insight into non-binary youth experiences) was pertinent to DDA in their own experience and/or from what they’ve observed online. In agreement with quantitative findings, nearly all participants in the qualitative phase agreed that gender identity did not make a big difference in whether DDA occurred or not, however several argued that it did matter in terms of the health impact and social implications. This was most often attributed to broader gender norms and stigmas that exacerbate the consequences of DDA, particularly sexual DDA. A few participants attributed
these trends in what teens are exposed to, particularly movies, social media, TV shows, and online games that misrepresent or promote unhealthy gender norms and expressions. For some, gender identity was disregarded as an issue in their lived experiences online. In addition, at least two participants argued that age, not gender identity, was equally or even more salient to the discussion around DDA. For others, gender identity was associated with the power dynamics in their online dating relationships.

Online habits and behaviors, particularly around communication and self-image/self-representation online, were seen as heavily influenced by gender norms and expectations. However, how gender identity influenced online behavior was highly subjective. This points to a need not only for more research in this area, but also more refined measures that can capture these trends in online habits or behavior as well as clarify the distinctive factors related to sex and gender identity.

In the quantitative phase, the only mental health outcome measured was the mean frequency of depressive symptoms. In the qualitative interviews, however, the emotional and mental health impacts of DDA were numerous and often disruptive to their relationships, daily life, and/or social wellbeing.

Specifically, teens reported experiencing depressive symptoms, anxiety, poor self-image, loneliness, poor school performance/difficulty focusing, becoming cynical and/or distrustful of others as a result of experiencing DDA. There were also notable changes that participants made as a result of DDA experiences, such as changes in platforms used, communication preferences or personal boundaries, online dating behavior, and, often, the quality of their relationships with their dating partner or others. This is an important consideration as a future area of research as well as what to look for among those who work with teens.

Implications

There are many lessons learned from this dissertation study. For one, efforts to understand and address digital dating abuse would benefit from a multi-sectoral, interdisciplinary response. For example, educators are clear stakeholders in adolescent mental health and should also be considered in terms of implications and opportunities for collaboration. Youth educators and communications scholars have played a large role in the development and implementation of adolescent resources for digital citizenship, and their input and collaboration is important to promoting important public health and nursing efforts to
mitigate and prevent digital dating abuse among adolescents (Finkelhor, Walsh, Jones, Mitchell, & Collier, 2020; Hollandsworth, Donovan, & Welch, 2017; Jones & Mitchell, 2016). Ensuring effective dissemination and uptake of digital citizenship messaging/resources to prevent or mitigate DDA needs to include public or private school teachers with expertise in educating or counseling adolescents.

Another critical example is that of the collaboration between parents/guardians and their adolescents. Parents and guardians commonly monitor and track their child’s behavior online, primarily to ensure their safety both physically (e.g. tracking their location) and online (e.g. monitoring social media activity). While some attentiveness is expected and often appreciated, establishing boundaries between adolescents and their parents/guardians (or other family members) was perceived among teens in the qualitative interviews to be challenging, particularly if the parents/guardians had low digital literacy. As also demonstrated in the qualitative results, having strong family role models and connectedness can have a considerable impact on how a teen protects themselves online and/or responds to experiences of DDA. Further, improving personal digital literacy and being sensitive to the very real implications of online adolescent conflict were expressed as ways that parents/caregivers can support teen survivors of DDA. Public health or school nurses and educators are in a prime position to work together to ensure these messages are received and understood by the parents/guardians of young people. Further, research among caregivers’ perceptions on DDA may help to clarify their role in addressing and preventing DDA.

Implications for Theory

The diathesis-stress model that was the foundation for this dissertation research and helped to organize not only conceptualization of the nature and consequences of DDA, but also the vulnerabilities and resiliencies that contribute to this type of conflict. More specifically, this framework allowed the two study phases, which were distinct in method and analysis, to be conceptually grounded in and integrated using the same underlying constructs, with the quantitative phase centered on the stressors (DDA & dating violence) and health outcomes (depressive symptoms) and the qualitative phase centered on related vulnerabilities and resiliencies. Future research should work to understand not only the quantitative relationship between DDA experiences (stressors) and depressive symptoms (health outcomes), which was found to be a positive association moderated by sex in this study, but also the
relationship between vulnerability/resiliency (only qualitatively measured in this study), DDA, and depressive symptoms. More broadly, this adaptable model may be useful in research and practice around the mental health implications of violence and abuse.

The qualitative findings of this study suggest that the online environment plays a distinctive role in individual health and wellbeing. Therefore, the online environment should be a standard part of the ecological frameworks used in nursing science to understand individual health, wellbeing, and behavior, particularly among those at risk for violence or abuse in their relationships. Inclusion and/or placement of the online environment in socio-ecological frameworks, such as Dr. Jacquelyn White’s “Person-centered model for Gendered Adolescent Interpersonal Aggression” (White, 2009), would not only strengthen understanding of how the online environment impacts individual health and wellbeing, but also how the online environment could be better structured to mitigate the negative and reinforce the positive public health implications of social media use.

**Implications for Nursing**

Both clinical nurses and nursing scientists are key stakeholders in violence prevention and mental health promotion. The findings of this study indicate that there are many ways for nursing scientists to only advocate for those who experience DDA, but also be a part of the solution to mitigate DDA and its effects. For instance, it is clear from this study that future research efforts should focus on the role of sexual DDA on depressive symptoms, which was experienced disproportionately by females in this sample.

In the qualitative interviews, online habits, communication, self-image, and related behaviors were seen as heavily influenced by gender norms and expectations. As noted, developing measures further to account for individual differences in online behavior/attachment might be helpful for capturing gender differences in DDA or other forms of online conflict. Some of this work is already being done by other disciplines, such as the information technology (IT), education, or communications sectors, and nursing scientists would do well to incorporate these insights and collaborate with stakeholders in social media who are not traditionally health-focused. For instance, in a recent literature review by communications and psychology scientists Bayer, Anderson, & Tokunaga concluded that online habits and behaviors
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moderate the relationship between social media and wellbeing, and more attention needs to be given to
the habit-forming and/or habit-driven nature of these websites (Bayer, Anderson, & Tokunaga, 2022).
Nursing science can learn from this perspective and is well suited to address, challenge, and advocate for
an online environment that is be better structured to mitigate the negative and reinforce the positive public
health implications of social media use.

Another important takeaway from this study is the importance of the school setting for connecting
teens to mental health support and resources. Several teens in the qualitative interviews perceived their
access to therapy was aided by referrals made by school-based counselors, nurses, and teachers,
although these resources were perceived to be limited and understaffed given the magnitude of
adolescent mental health needs. Further investment in resource development, training, and support for
school nurses and counselors who are equipped and trained to provide quality, timely, and effective
mental health resources, but also strengthen the trauma-informed, gender-sensitive direction that DDA
research, practice, and policy needs to move in.

Limitations

One clear limitation of this study is that it draws from secondary data that was collected to inform the
development of a safety decision aid for adolescents. While the myPlan DDA measure provided an
important foundation for understanding the mental health implications of digital dating abuse, further
development and refinement of these measures is needed to improve the depth of the DDA construct
captured in the findings. Additional limitations include the inability to incorporate the self-report data of the
gender non-conforming youth in the myPlan THS baseline survey, the low power for the regression
analyses for the second aim of this study, and the sole focus on DDA victimization instead of both
victimization and perpetration of these behaviors. Future research ought to not only work to eliminate
these limitations, but also build on the most recent advances in social media-related research that
incorporates the views of the many disciplines contributing to the evidence around online behavior and
wellbeing (e.g. those who study information technology, communications, psychology, public health).
Likewise, perspective and insight gained from the small convenience sample recruited for the qualitative
phase may not be reflective of how all teens in the US feel about or would describe their experience of
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The challenges of remote interviewing post-pandemic limited qualitative recruitment and data collection possibilities, as well as the timeline of study milestones. This is an important consideration, as logistical challenges or access barriers may have limited who was available and willing to participate at the time of data collection. Future research on DDA could help to balance this perspective by including adolescents who face barriers to technology access or remote interviewing (i.e. poor/no internet connection) or by using longitudinal methods to ensure engagement of those teens who have lost access for a period of time (i.e. if their phone/computer was punitively confiscated by a caregiver).

Like many violence-related studies and studies that recruit online samples, there were more females represented in both the quantitative and qualitative phases of this study. The inability to include gender non-conforming youth in this analysis or design was also an important limitation of who is represented in these findings and narratives. Oversampling males and inclusion of gender non-binary youth in future research is recommended in order to fully understand gender differences and similarities in DDA experiences and outcomes. In the qualitative phase, while every effort was made to ensure the privacy/confidentiality, safety, and comfort of teens in each interview, teens may not have felt comfortable disclosing aspects of their experiences given the data collector (the doctoral candidate) was a Registered Nurse, twice the age of most participants, white/Caucasian, and someone they had only met online for a brief period/interaction. Further, all interviews were held remotely limiting the scope and nature of observations that could be made by the interviewer. In other words, interviewer bias was likely introduced and is an important consideration when reading or applying the results of this study.

Conclusion

Nursing research and practice, advocacy, community engagement, and even technological development centered on adolescent relationships and/or mental health comes to an important intersection when thinking about online conflict. This dissertation research demonstrates that online abuse is commonly experienced among teens in unhealthy dating relationships and disproportionately impacts the health and wellbeing of female-identifying youth at least in part due to their vulnerability to sexual DDA. Asking teens about their thoughts and needs about these situations further highlighted the need for more robust, interdisciplinary, community-based research and resource development. In other words, adolescent
disclosure of digital dating abuse should not be dismissed or ignored, especially due to the relationship with depressive symptoms identified in this study. Efforts to understand or prevent this issue need to carefully consider the intersecting identities (such as gender, sex, age, or racial identity) that teens are actively exploring and developing during this life stage.
References


## APPENDIX 1. Adapted Diathesis-Stress Model Concepts, Parent Codes, and Child Codes with 6/8/21 Changes as Documentation and Organization Example

<table>
<thead>
<tr>
<th>D-S Concept</th>
<th>Parent Code</th>
<th>Child Code</th>
<th>Changes made on 6/8/21 Team Discussion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intersecting Identities</td>
<td>A. Participant Identity/Description</td>
<td>A.1 Current status</td>
<td>Leave as-is</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A.2 Self-description</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>A.3 Age</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>A.4 Gender/sexual identity</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>A.5 Race/ethnicity</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>A.6 MD Location</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>A.7 Gender norms</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>A.8 Current dating status</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>A.9 General/offline dating norms</td>
<td></td>
</tr>
<tr>
<td>Stressors/ Safeguards</td>
<td>B. Digital Environment</td>
<td>B.1 Technology likes</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>B.2 Technology dislikes</td>
<td>Appearance to be reaching saturation in this area – recommended to spend less time on this section in future interviews</td>
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<tr>
<td></td>
<td></td>
<td>B.3 Relationship quality</td>
<td></td>
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<td></td>
<td></td>
<td>B.4 Online dating norms</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>B.5 Online image</td>
<td></td>
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<td></td>
<td></td>
<td>B.6 Consistency offline</td>
<td></td>
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<td></td>
<td></td>
<td>B.7 Changes since COVID</td>
<td></td>
</tr>
<tr>
<td></td>
<td>C. Stressors</td>
<td>C.1 Positive online relationship</td>
<td>Keep coding C1 and C2 as it applies to all relationships online – including friends</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C.2 Negative online relationship</td>
<td>Change C1 &amp; C2 to “positive/negative online behavior”</td>
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<tr>
<td></td>
<td></td>
<td>C.3 Digital abuse</td>
<td>Change C3 &amp; C4 to be specific to online dating relationships</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C.4 Warning signs</td>
<td>Change C3 to “toxic online relationships”</td>
</tr>
<tr>
<td>Vulnerability/ Resiliency</td>
<td>D. Social Connectedness</td>
<td>D.1 Personal technology use</td>
<td>Merge D3 &amp; D4 into one “support system” code</td>
</tr>
<tr>
<td></td>
<td></td>
<td>D.2 Online dating communication</td>
<td></td>
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<td></td>
<td></td>
<td>D.3 In-person support system</td>
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<td></td>
<td></td>
<td>D.4 Online support system</td>
<td></td>
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<tr>
<td></td>
<td>E. Digital Safety</td>
<td>E.1 Personal protection online</td>
<td>Remove E3 code – recode any with this code as C1</td>
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<tr>
<td></td>
<td></td>
<td>E.2 Online trust</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>E.3 Digital self-care</td>
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<tr>
<td></td>
<td>F. Timeline event</td>
<td>F.1 Experience overview</td>
<td>Leave as-is</td>
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<tr>
<td></td>
<td></td>
<td>F.2 Dating partner involved</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>F.3 Others involved</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>F.4 Event time</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>F.5 Events leading up</td>
<td></td>
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<tr>
<td></td>
<td>G. Response to events</td>
<td>G.1 Initial reaction</td>
<td>Changes to the response codes to better reflect findings to date:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>G.2 Response</td>
<td>o Change G2 to “emotional response/impact”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>G.3 Helpful response</td>
<td>o Change G3 to “confrontation with dating partner”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>G.4 Unhelpful response</td>
<td>o Change G4 to “changes in relationship”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>G.5 Changes to online behavior</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>G.6 Resources</td>
<td></td>
</tr>
<tr>
<td>Health Outcomes</td>
<td>H. Emotional wellbeing</td>
<td>H.1 Personal happiness</td>
<td>Change H2 to “relationship quality following events”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>H.2 Relationship quality’</td>
<td>Change H3 to “impact on future relationships/lessons learned”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>H.3 Lasting effects</td>
<td>H5 added specific to depressive symptoms (crying, feeling sad, etc.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>H.4 Coping mechanisms</td>
<td>H6 added to account for anxiety symptoms (worry, sense of dread)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>H.5 Depressive symptoms</td>
<td>May need to add another code for other MH symptoms not captured, to follow-up next meeting</td>
</tr>
<tr>
<td></td>
<td></td>
<td>H.6 Anxiety symptoms</td>
<td></td>
</tr>
</tbody>
</table>
## APPENDIX 2. Categories and Themes Observed During Analysis Organized by Diathesis-Stress Concepts and Parent Codes

<table>
<thead>
<tr>
<th>D-S Concept</th>
<th>Parent Codes</th>
<th>Themes</th>
<th>Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stressors</td>
<td>B. Digital Environment C. Stressors F. Timeline event</td>
<td>Contributing factors to DDA experiences</td>
<td>Jealousy</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Burnout</td>
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<td></td>
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<td></td>
<td>Expectations/norms</td>
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<td></td>
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<td></td>
<td>Inability to completely block someone out</td>
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<td></td>
<td></td>
<td></td>
<td>Lack of personal accountability</td>
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<td></td>
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<td></td>
<td>Guiltiness/Naivety/ Immaturity</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Recognizing patterns takes time</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Platform used</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Family stressors</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Loneliness/Wanting attention</td>
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<tr>
<td>Norms and expectations regarding teen dating/communication online</td>
<td>It is a time commitment</td>
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<td></td>
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<td></td>
<td>Texting habits/expectations vary</td>
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<td></td>
<td>Defining the stage of the relationship is difficult</td>
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<td></td>
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<td></td>
<td>Expressing deep attachment early on/in talking phase common</td>
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<td></td>
<td>Certain platforms or online relationships require additional self-protection</td>
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<td>Talking online can be more comfortable than in-person</td>
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<td></td>
<td></td>
<td></td>
<td>Peer content on social media can be a negative influence</td>
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<tr>
<td>Forms of DDA measured in the THS</td>
<td>Checked your phone or social media accounts without your permission</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Hacked into your social media accounts</td>
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<td>Posted, shared, or messaged you online to embarrass, shame, insult, or harass you</td>
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<td></td>
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<td></td>
<td>Asked for or pressured you into messaging, posting, or sharing sexual information/images when you didn’t want to</td>
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<td>Used technology to monitor where you are or who you are with</td>
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<td>Pretended to be another person online to test you</td>
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<td>Used a fake account to lure into a relationship or get information</td>
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<td>Harassed with messages until responded or got something they wanted</td>
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<tr>
<td>Forms of DDA not measured in the THS but repeatedly discussed</td>
<td>Kept or received nudes of other people while still in a dating relationship</td>
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<td>Blocked or ghosted to temporarily to hurt their partner or make a point</td>
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<td>Required/demanded approval of any social media posts or messages before they could be sent/posted</td>
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<td>Used unmet mental health needs, suicidal ideation, and/or self-harm behaviors to guilt, shame, or otherwise manipulate partners</td>
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<td></td>
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<td></td>
<td>Long recovery times</td>
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<td></td>
<td>Turn of location tracking or take other digital safety/protection measures</td>
</tr>
<tr>
<td>Resiliencies</td>
<td>D. Social Connectedness</td>
<td>Perceived resources, sources of resilience, and/or coping mechanisms</td>
<td>Turn to your friends for support, advice, or understanding</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Blocking them on social media, phone, or both</td>
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<td>Talk it out with someone you trust</td>
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<td></td>
<td>Tough love or accountability from trusted support people</td>
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<td></td>
<td>Therapists</td>
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<td></td>
<td>Get a new partner/talk to someone else</td>
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<td>Spiritual outlets or support</td>
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<td></td>
<td></td>
<td>Change your attitude or perspective</td>
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<td></td>
<td>Family</td>
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<td></td>
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<td></td>
<td>Taking a break from phone/social media</td>
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<td>Venting on social media</td>
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<td>Escapism</td>
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<td>Strong role models</td>
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<td></td>
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<td></td>
<td>Online security practices</td>
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<tr>
<td></td>
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<td></td>
<td>Turn your location off (on Snapchat, phone, or both) Role models</td>
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<td></td>
<td>Drugs/alcohol</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Establishing trust</td>
</tr>
<tr>
<td>Vulnerabilities</td>
<td>E. Digital Safety</td>
<td>Perceived vulnerabilities &amp; challenges to effective coping</td>
<td>Communicating tone, meaning, or intention is difficult online</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>Online-only relationships (no in-person contact) are not healthy</td>
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<td>Not being able to verify identity</td>
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<td>Becoming emotionally dependent on your partner/the person you’re talking to</td>
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<td></td>
<td>Unsafe phone settings</td>
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<td></td>
<td>Establishing a support system/accessing therapy or other resources</td>
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<td>Setting boundaries is challenging</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Finding good/reliable friends can be a challenge</td>
</tr>
</tbody>
</table>
### Health outcomes
- **G. Response to events**
- **H. Emotional wellbeing**

### Outcomes or impact on wellbeing & behavior
- Keeping busy/distraction techniques
- Changes to social media or communication styles
- Social isolation
- Self-realization or introspection

### Intersecting Identities
- **A. Participant identity/description**

<table>
<thead>
<tr>
<th>Gender norms &amp; differences</th>
<th>Outcomes or impact on wellbeing &amp; behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender communication differences</td>
<td>Keeping busy/distraction techniques</td>
</tr>
<tr>
<td>Standards for girls different than that for boys</td>
<td>Changes to social media or communication styles</td>
</tr>
<tr>
<td>Gender differences in responses to being hurt by someone</td>
<td>Social isolation</td>
</tr>
<tr>
<td>Difficult for boys to show/cope with their feelings in a healthy way</td>
<td>Self-realization or introspection</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age-related norms</th>
<th>Outcomes or impact on wellbeing &amp; behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age &amp; maturity influences relationship/online behavior</td>
<td>Keeping busy/distraction techniques</td>
</tr>
<tr>
<td>Younger ages seen as more gullible</td>
<td>Changes to social media or communication styles</td>
</tr>
</tbody>
</table>