

THE ASSOCIATION BETWEEN TEEN DATING VIOLENCE AND SUICIDAL
BEHAVIOR: RISK FACTORS, THEORETICAL FRAMEWORKS & CLINICAL
IMPLICATIONS

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ABSTRACT

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Teenage dating violence (TDV) and suicidal behaviors are prevalent and serious issues that impact adolescents in the United States. Despite the gravity of these issues, data regarding the relationship between teenage violence victimization and subsequent suicidal behavior within adolescent populations is limited as most studies tend to focus solely on adult relationships. This study evaluates the association between different types of TDV and suicidal behaviors using data from the 2017 Youth Risk Behavior Survey (YRBS). This research also is attempting to replicate previous research that adolescents who experience relationship violence are more than twice as likely to consider and attempt suicide than peers who have not been previously victimized (Belshaw et al., 2012). Our findings indicated that adolescent victims of both physical and sexual TDV have a higher risk of developing suicidal ideation, planning a suicide attempt, attempting suicide and having an injurious attempt. Implications for physicians on how to address TDV are discussed.

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Introduction

Dating violence, particularly in the period of adolescence, can result in serious long-term negative health outcomes and can have lasting impacts due to the heightened vulnerability of this time. The purpose of this thesis is to evaluate the prevalence of suicidal behavior and physical, sexual and emotional dating violence victimization within adolescent populations as well as isolate risk factors and outcomes of such behavior and potential intervention and prevention mechanisms that can address these issues. There is a lack of research within the field on factors that may underlie violence within romantic dating relationships particularly in adolescence which prompts critical evaluation of this topic.

According to data collected by the Centers for Disease Control, nearly 26% of female teens and 16% of male teens have experienced intimate partner violence before the age of 18 (Centers for Disease Control, 2020). Additionally, suicide is the second leading cause of death among individuals ages 10 to 24. TDV has serious long-lasting implications and consequences such as resultant suicidal behavior and other negative health outcomes. This thesis will first evaluate the different subtypes of teen dating violence that exist and clarify confounding terminology as well as assess the prevalence of victimization. After establishing language, this paper will explore the contextual factors that differentiate adolescent and adult romantic relationships which implicate the current frameworks that exist when assessing teen dating violence. It will then enumerate the risk factors that may predispose an individual for engaging in violent relationships. This paper will then shift to focus on the epidemiology of adolescent suicidal behavior as well as risk factors and the proposed developmental-transactional model of youth suicidal behavior that attempts to explain the interaction of neurobiological vulnerabilities and socio-environmental influences in

adolescence (Bridge, Goldstein & Brent, 2006). We will then discuss the ideation-to-action framework for suicide that may explain the interaction between these behaviors in adolescence.

The second part of this thesis will attempt to replicate previous findings from the 2007 Youth Risk Behavior Survey (YRBS) to evaluate correlations between incidences of teen dating violence and suicidal behaviors using data from the 2017 survey. Another exploratory analysis will assess the relationship of specific types of violence, either physical or sexual violence, and suicidal behaviors in adolescents. The last part of this paper will briefly touch on implications in clinical settings for the recognition and prevention of both suicide and teen dating violence.

Defining Dating Violence

The purpose of this section is to provide further clarification on the terminology that will be used throughout this paper. Studies within this field have operationalized numerous different terms to refer to the incidence of intimate partner violence in the context of adolescents. These terms can include, interpersonal violence (IPV), teen dating violence (TDV), adolescent dating violence (ADV), and dating violence victimization (DVV). For the sake of consistency, this paper will use the term teen dating violence (TDV), a type of intimate partner violence, mirroring the terminology employed by the CDC. The term teen dating violence can encompass a variety of behaviors between romantic partners between the ages of 10 and 24 in which the perpetrator attempts to exert control over a former or current partner through aggression, manipulation, and abuse. Dating violence can occur in same-sex relationships and these behaviors can be isolated incidences which “might or might not have lasting impact” to more chronic episodes that exist over several years (Centers for Disease Control and Prevention, 2016). Traditionally, TDV is

categorized into four realms of behavior including physical violence, sexual violence, psychological aggression, and stalking. Each of these domains includes patterns of behaviors that range in severity and can occur both in-person and online. The occurrence of specific types of violence rarely occurs in isolation (Bosarte, Simon & Swahn, 2008). Thus, an individual may experience multiple forms of violence and/or aggression within the same relationship.

Examples of physical dating violence include “scratching, slapping, pushing, slamming or holding someone against a wall, biting, choking, burning, beating someone up, and assault with a weapon” (Foshee, 2008). Such violence manifests itself with degrees of seriousness and thus this category can be further divided into mild, moderate and severe subtypes that depend on the likelihood of resultant bodily harm.

Sexual violence can encompass behaviors such a rape within the relationship between adolescent partners, attempted rape or sexual coercion such as birth control sabotage (Miller et al., 2007).

The pressure to have sex earlier than desired by a partner can also fall under this category, which holds particular weight within the adolescent context. Sexual violence can include intercourse but “every act leading up to sexual intercourse can be classified as sexual abuse if it is without consent, painful, unprotected or performed in a demeaning way” (Smith et al., 2005).

Psychological/emotional or verbal aggression in relationships also encompasses a broad range of behaviors similar to physical dating violence. Examples of these behaviors include excessive insulting, criticizing, berating or humiliating in front of friends. Threatening behaviors are also included in this category. Examples of such behaviors include threats to hurt a partner, damage a

partner's possessions, or throwing objects at a partner but missing (Offenhauer & Buchalter, 2011). Emotional manipulation is another category within the realm of psychological abuse. Behaviors in this category include threatening suicide, ignoring one's partner, threatening to break up, or gaslighting. Gaslighting is defined as a form of abuse that is meant to undermine the partner's self-esteem and "make the victim feel 'crazy' by continually questioning the person's judgement" (Offenhauer & Buchalter, 2011). Although psychological and emotional aggression are associated with negative outcomes, these behaviors must exist within a close partner relationship and be paired with sexual or physical violence or threats of violence to also be classified as violence (Glass et al., 2003).

Stalking refers to a pattern of unwanted behavior which may include harassment or threats that causes the victim to feel fear or concern for their safety, the central component of this category. Examples of stalking can include repeated unwanted text messages as well as excessive monitoring of activities such as insisting on knowing where a partner is at all times or tracking a partner's phone or interactions with others. A growing trend within the literature is the emergence of the influence of technology such as cell phones and social media to facilitate the perpetration of psychological aggression and stalking (Draucker et al., 2010). This phenomenon is relatively new and will be discussed further on how contemporary dating landscapes are changing and possible causes for the increase of teen dating violence over the years.

The Development and Changing Landscape of Adolescent Romantic Relationships

Adolescence is a period of profound change and transition filled with uncertainty and vulnerability with the emergence of sexual identity and the capacity to formulate intimate

relationships (Lerner & Galambos, 1998). The lack of recognition of teen dating violence rests partly on the fact that practitioners and adults in general lack understanding of contemporary adolescent relationships and how adolescents may define their own relationships such as the ambiguity of terms such as “dating” or “boyfriend/girlfriend.” The acknowledgment of adolescent dating violence as a public health problem is a recent phenomenon and thus the complexity and nuances of this issue are not fully understood.

Adolescent romantic relationships have consistently been viewed as transitory and volatile and thus have often been dismissed as critical influences within a teenager’s developmental course. Additionally, despite the problem of abuse within adolescent relationships, there has been sparse recognition of this issue within public health and social policy spheres. Only in the past decade has there been an increased effort to address the growing prevalence of teen dating violence.

In the past, few studies evaluated the developmental weight of romantic relationships within adolescence when compared to the perceived significance of peer friendships and parental relationships (Meier & Allen, 2009). Romantic relationships in adolescence provide influential frameworks for future dating and sexual behavior (Collins & Sroufe, 1999). Romantic relationships, as defined by Andrew Collins with the Institute of Child Development, are mutual voluntary interactions, similar to friendships (2003). These relationships have a certain intensity and are often marked by physical and later sexual expressions of affection (Brown, Furman, & Feiring, 1999).

Participation in romantic relationships escalates rapidly in adolescence (Collins, Furman, & Welch, 2009) with half of all adolescents within the U.S. being involved in some type of romantic relationship by age 15 (Carver, Joyner, and Udry 2003). Additionally, a large proportion of adolescents in a romantic relationship report their relationship lasting at least 11 months, demonstrating how these relationships are not as ephemeral as traditionally perceived. Adolescents also may view relationships in ways more similar to adults than formerly believed. There are distinct developmental differences in adolescent and early adulthood relationships, however, including age, quality, and the significance of breakups (Leadbeater, Connolly & Temple, 2018) that must be considered when evaluating the frequency and gravity of violence within these relationships. Developmental milestones that are concurring within adolescent relationships also are involved with periods of shifting norms and acceptability for different sexual behaviors such as more casual sexual relationships within “hookup culture” (Kuperberg & Padgett, 2015), pornography and sexting (Harden, 2014), or the emergence of dating apps and social media as a way to engage in sexual behavior (Underwood & Ehrenreich, 2017).

Relationship Development and Pathways

The introduction to romantic relationships often begins with depictions in media and consequent idealization of future real-life partners. High school relationships often involve intense positive and negative emotions such as love and jealousy (Feiring & Furman, 2000). Consequently, romantic relationships begin with a strong idealization of one’s partner and then a gradual understanding of personal faults and flaws and inevitable breakups (Leadbeater, Connolly & Temple, 2018). There is evidence that suggests that young adolescents choose their romantic partners based on anticipated reactions from their peers, demonstrating the profound influence of

peers in adolescent relationships (Collins, 2003). The underlying causes of breakups shift throughout adolescence evolving from feelings of boredom or getting too attached to failures of communication or instances of infidelity and jealousy (Bravo, Connolly, & McIsaac, 2017). Breakups, particularly during this time, can be sources of embarrassment or alienation from peer groups. Breakups can also be complicated when the relationship involves partners losing their virginity to one another or if one partner still heavily romanticizes the other. Additionally, if breakups occur over text message it becomes increasingly difficult to determine the finality of the relationship which muddles the possibility of reconciliation.

Involvement in a romantic relationship in adolescence has also been found to be associated with higher levels of self-esteem, (Feiring & Furman, 2000) which may be related to the drive to improve one's prestige and superiority over others in early adolescence. However, early initiation in dating and sexual behaviors has also been associated with negative consequences such as alcohol use or poor school performance (Leadbeater, Connolly & Temple, 2018). The ability to resolve conflicts and the quality of romantic relationships begins to evolve in the middle adolescence, coinciding with a heightened ability to perspective take. Early adolescence relationships are centered more on shared activities, peer expectations within social groups and the status of being involved in a relationship rather than compatibility or shared intimacy that is a feature of older adolescent relationships (Connolly et al., 2013). Relationships in early adulthood are accompanied by economic dependence, cohabitation and the intermingling of social groups that may impact responses to dating violence within these relationships (Leadbeater, Connolly & Temple, 2018).

Developmental Framework of Relationship Violence

The ecological systems framework as outlined by Bronfenbrenner and Morris helped provide the theoretical backing for the developmental perspective for relationship violence which establishes that dating violence is the outcome resulting from the aggregation of different contextual risk factors (1998). These risk factors intersect and promote the propensity for violence and aggression within the relationship with sources stemming from family, individual or the outside environment and broader contexts such as the media. Consequently, understanding teen dating violence necessitates assessing various factors such as the different types of violence that may exist within the relationship, which stage of development the partners are in, and the length of the relationship (Leadbeater, Connolly & Temple, 2018)

As discussed earlier, these relationships are progressing in an ever-evolving set of norms when it comes to defining relationships and sexual behavior. The manifestation of how dating presents itself or what constitutes contemporary dating is complicated by the presence of sexting, experimentation and “hooking up.” In a study conducted on the language young adults use to describe four types of partnerships, romantic, sexual, combination and not yet romantic or sexual, participants widely varied on their shared vocabulary (Banker, Kaestle & Allen, 2010). This finding demonstrates how communication and language within a societal context and the emerging acceptance of sex positivity and normative sexual behaviors can influence how adolescents conceptualize romantic relationships.

Technological Influences on Dating Behaviors and Dating Violence

The dating landscape has changed significantly in recent years as teenagers now have the constant ability to communicate with one another which shifts how they may interact with their romantic or sexual partner. Additionally, the wide-scale proliferation of cell phones and social media accounts allows for the formation of online relationships and facilitates novel sexual behaviors as well as violence. These behaviors can include sending intimate photographs (sexting) or distributing or threatening to distribute one's intimate photographs without their consent (revenge pornography) or obsessive monitoring of one's partner's whereabouts. Increased availability and access to digital pornography can also serve to indoctrinate violent forms of sexual behaviors and dangerous attitudes (Greenfield, 2004). A study of adolescents in Italy revealed that 45% of male students were exposed to violent depictions of sexual acts compared to 19% of females. This finding reveals distinct gender differences and how different and potentially problematic sexual attitudes may be normalized. This has profound implications when negotiating consent within a relationship and how different genders may view their sense of agency that may lead to sexual violence. It is not yet fully understood whether the presence of technology heightens the prevalence or risk of perpetrating dating violence.

Salient Differences in Adolescent Dating Violence

An evaluation of the role of violence within romantic adolescent relationships is needed to assess how teen dating violence may have a differing presentation than violence present in adult romantic relationships. Adult frameworks for intimate partner violence are often utilized when evaluating the presence of violence in adolescent relationships. This is problematic because adolescent relationships differ from adult romantic relationships in certain areas. A majority of studies looking at teen dating violence have used scales that measure the incidence of certain

behaviors. For example, these studies may look at the number of times a person has perpetrated specific acts of violence such as hitting or pushing another person. These scales, however, fail to address or accurately account for the complexity of intimate partner violence as they do not take into account “the degree of injury inflicted, coercive and controlling behaviors, the fear induced, or the context in which the acts occurred” (Mulford & Giordan, 2008). Simply looking at the number of times an act of violence has been perpetrated neglects the influence of power and control and conflates more minimal acts of aggression with severe violence.

There are often mutual acts of aggression amongst males and females in adolescent relationships (Mulford & Giordano, 2008). However, motivations for using violence as well as outcomes of victimization vary by sex. Both males and females report anger as their primary motivating factor for using violence. Females also cite self-defense as a reason for engaging in violent behavior while males report the need to exert control.

Adolescent relationships have a more even distribution of power due to the absence of financial dependency that may be present in adult romantic relationships. Adolescent relationships also do not have additional children or dependents to provide for or protect. In a study interviewing 9th and 11th graders, a majority of male and female students interviewed said there was “equal say” within their romantic relationship. Females were more likely to have more power in cases where there was an imbalance. When one or both partners reported physical aggression, males indicated feeling like they had less power in the relationship when compared to males in relationships without aggression. This effect was not observed in females, who reported no perceived power differences regardless of the presence of aggression. Adults who engage in domestic violence

often may see themselves as being powerless. This finding has yet to be properly examined in adolescent relationships.

A lack of prior relationships in adolescence may also contribute to unhealthy communication or coping mechanisms such as the use of violence or verbal aggression. An inability to communicate may transform into aggressive practices to express feelings of jealousy, love or frustration. In a focus group study with both male and female participants, physical aggression can emerge from difficulties articulating feelings or dealing with frustration (Fredland et al., 2005). Additionally, from a developmental perspective, if using violence and aggression is found to be an effective means of resolving conflict, this may lead to reliance on violent and aggressive tactics with intimate partners in the future when problems arise. Adolescents, who have a limited romantic history when compared to adults, may also hold idealistic beliefs about romantic relationships which can “lead to disillusionment and ineffective coping mechanisms when conflict emerges” (Mulford & Giordan, 2008).

Peer influence is also a critical factor that plays a part in adolescent relationships. Peer attitudes have been shown to have a significant influence on teenager’s attitudes toward dating violence (Adelman & Kil, 2007). Relationships in adolescence have a greater outward focus since teenagers spend a large proportion of their time in schools or with friend groups in social settings. Peer perception of relationships and gender norms could influence the incidence of dating violence in adolescence. Additionally, disputes over too much time spent with friends or jealousy over friendships with the opposite sex or potentially romantic relationships are recognizable patterns in juvenile relationships and a part of this critical timepoint.

Prevalence of Teen Dating Violence

The prevalence of different types of physical and sexual teen dating violence varies greatly across different studies. The lack of consistent terminology and language that is used to identify adolescent dating violence, insufficient longitudinal data, differences in ages being studied as well as the timeframe for perpetration all contribute to the difficulty in defining the overall prevalence of teen dating violence. Often, studies will only evaluate certain subtypes of violence such as solely physical violence or sexual violence while others will conflate subtypes to include any instance of dating violence in their estimates. Additionally, these surveys rely on self-reported measures which may present a problem. Teenagers may normalize certain problematic behaviors within a relationship such as teasing which may escalate to more dangerous patterns of violence and can implicate reported prevalence rates. Additionally, hitting or over-monitoring may be misinterpreted as signs of love and a healthy relationship (Glass et al., 2003).

In a literature review of recent publications addressing the prevalence of teen dating violence the range of incidence varied from 9 - 46% (Glass et al., 2003). Surveys with lower ranges that utilize more limited measures to operationalize violence while larger estimates tend to reflect broader, more comprehensive definitions of behaviors (Offenhauer & Buchalter, 2011). Teen dating violence is not a gender-specific issue, as both males and females can be both victims and perpetrators of violence. Over 1 in 3 women (36.4% or 43.6 million) have experienced sexual violence, physical violence and/or stalking by a partner sometime during their lifetime. Similarly, 1 in 3 men (33.6% or 37.3 million) in the U.S. have experienced intimate partner violence sometime in their lifetime. Unfortunately, teen dating violence impacts a large number

of adolescents each year, demonstrating how this is a growing public health concern. According to the CDC's YRBS and the National Intimate Partner and Sexual Violence Survey, 26% of women and 15% of men have experienced intimate partner violence before the age of 18.

Prevalence of Different Subtypes of Violence

Nationally representative samples of adolescents in high school have found that approximately 1 in 11 female teens and 1 in 15 male teens have experienced physical dating violence in the past year. Nearly 1 in 9 female teens and 1 in 36 male teens have experienced sexual dating violence in the past year (Centers for Disease Control, 2020).

Different genders may vary in the tactics they use to intimidate or force their partner into unwanted sexual activity. In a study of Canadian high school students between 13-18 years old (N = 165), 26.1% of male and female respondents reported having been forced to participate in unwanted sexual activity. Females reported higher instances of unwanted sexual touching or groping and sexual intercourse while males reported higher rates of forced removal of clothing, kissing and physical force (Rhynard, Krebs, and Glover, 1997).

A 2007 study evaluating psychological aggression perpetrated through technology revealed high levels of intrusive monitoring by a partner as well as excessive harassment by a romantic partner (Offenhauer & Buchalter, 2011). Approximately, 25% of respondents experienced harassment or name-calling from a former or current dating partner. Additionally, 30% of respondents reported that their partner had checked in on them by texting or emailing either 10, 20 or 30 times per hour. Other forms of psychological aggression reported in the study included spreading through

technology rumors intended to damage a partner's reputation or other friendships. Technology was also utilized to demand sex, threaten harm as well as solicit intimate photographs of a partner.

The rates of teen dating violence are not equal between groups with sexual and ethnic minorities being disproportionately affected. In a 2001 study with an ethnically and economically diverse urban sample (N = 476), 45% of both males and females reported being affected by teen dating violence. However, 9% reported exclusively being victimized reflecting how the majority of respondents were both perpetrators and victims of relationship violence. Looking at the breakdown by ethnicity, African American males and females reported the highest rates of victimization. Latina females reported significantly higher rates of physical victimization than Latino males. Cultural differences or socioeconomic factors may play a role in the higher rates of dating violence among ethnic minority groups (Howard & Wang, 2003).

According to the 2017 YRBS data (N=14,956), out of 68.3% who had dated or went out with someone in the past year, 6.9% had been forced to do “sexual things” such as kissing, touching or being coerced into having intercourse one or more times in the past year by someone they were dating or going out with. More female (10.7%) students experienced sexual dating violence than male (2.8%) students. White female (11.1%), Hispanic female (11.4%), and black female (6.8%) students had higher prevalence than white male (2.6%), black male (2.7%) and Hispanic male (2.5%) students for sexual dating violence in the past year. Gay, lesbian, and bisexual (15.8%) students, and not sure (14.1%) students had a higher prevalence of having experienced sexual dating violence compared to heterosexual (5.5%) students. Male gay and bisexual

(13.5%) students had a higher prevalence than male heterosexual (2.1%) students. Within the students who had dated or went out with someone in the past year, 8.0% had been physically injured on purpose such as being hit, slammed into something or injured with an object or weapon one or more times in the past year by someone they were dating or going out with. Female (9.1%) students had a higher prevalence of physical dating violence than male (6.5%) students. Black (10.2%) students had a higher prevalence than both white (7.0%) and Hispanic (7.6%) students. Black female (13.1%) students and Hispanic female (9.2%) students had higher prevalence rates than black male (7.1%) and Hispanic male (5.9%) students. Gay, lesbian and bisexual (17.2%) students and not sure (14.1%) students had a high prevalence of experiencing physical dating violence than heterosexual (6.4%) students. Lesbian and bisexual (16.9%) female students had a higher prevalence than heterosexual (7.1%) students. Similarly, gay and bisexual (16.8%) male students and not sure (14.1%) male students had higher prevalence rates than heterosexual (5.8%) male students.

Etiology & Risk Factors for Teen Dating Violence

As one would expect, there is no singular casual drive or explanation for why one engages in teen dating violence. There have been few attempts to classify specific typologies of teen dating violence perpetrators. After interviewing 116 self-identifying female perpetrators, researchers identified four subtypes for the underlying causes of initiating violence against their partner: intimate terrorism, anger problems, enforcing an ethic and responding in self-defense to aggression. Among males, the only notable subgroup was those who utilized violence as a way to de-escalate their female partner's violence directed at them (Foshee, 2008).

Theories for the Causes of Violence

Only a few theories on the causation of intimate partner violence, originally conceived to explain adult dating violence, have been applied to adolescent populations. This section will briefly touch on relevant theories that attempt to elucidate the causes of violence or why individuals are violent towards their romantic partners. Psychoanalytic theory originally pioneered by Freud proposes that there is an innate tendency for violence in all individuals (Freud, 1964) and some individuals are incapable of abating these impulses which causes them to be violent towards their romantic partners. Bandura's social learning theory describes how children imitate behaviors they observe and are driven to perform certain behaviors through the desire to gain rewards and avoid punishments. Family systems theory proposes that childhood abuse within the family setting and witnessing interpersonal violence can prompt future violence, leading to a circle of aggression. Distal and proximal theories are also influenced by social learning theory and propose that intimate partner violence is shaped through both background or distal factors such as childhood exposure to violence or experiences with abuse and situational or proximal factors that drive current behaviors including feelings of jealousy or relationship conflict (Rothman, 2018). Similarly, the socio-ecological model proposes multiple factors such as individual, family, community, institutional and societal spheres that may influence an individual's propensity for engaging in relationship violence. The determinants of aggression in this model are all interrelated and integrate to determine the likelihood of an individual becoming violent to their partner. Evolutionary psychological perspectives propose that male aggression serves as a way to dominate female partners and promote reproductive advantages. Another intergenerational transmission of violence theory is rooted in hereditary and epigenetic claims that individuals inherit genes that may cause aggression towards their partners or that certain

stressors in childhood may alter gene expression and dispose the child to have poorer levels of emotional self-regulation which may prompt interpersonal violence in relationships. Another theory derived from biology is the idea that damage to the frontal lobe may cause aggression. Traumatic brain injury or brain abnormalities may also cause trouble with emotional regulations which can increase the risk of engaging in intimate partner violence. There is substantial evidence that hostile attribution biases as well as inability to gauge facial cues are risk factors for dating violence perpetration.

Risk Factors for Dating Violence

There are many proposed risk factors for both perpetuating and being victimized by teen dating violence, many of which lack empirical evidence. Due to a lack of longitudinal studies on the precursors of teen dating violence, it is difficult to ascertain causal relationships between these factors. The current research allows us to evaluate certain determinants at the individual, family and peer and the community and broader societal levels that all interact to determine one's predisposition for becoming involved in teen dating violence. Risk factors include living in rural communities, early exposure to family violence in the home, violence forms of discipline, being expelled from school, having multiple dating partners and early sexual initiation, alcohol usage, and having access to weapons (Glass et al., 2003)

Individual Risk Factors

Some salient individual-level risk factors for dating violence perpetration that have been identified are depression, aggression, prior dating violence history and race (Vagi, Rothman, & Latzman, 2013). Having previously experienced dating violence is a risk factor for future

victimization as well as perpetration. In a longitudinal study of Canadian teenagers, 13% of respondents indicated that they had persistently engaged in dating violence in two different relationships. These findings reveal that adolescence sets the foundation for how teenagers view and behave in relationships that put them at risk of being perpetrators and/or victims of violence throughout their romantic relationships. Risk factors pertinent to sexual violence include early initiation of dating relationships and sexual intercourse (before 8th grade), starting menstruation sooner as well as low self-esteem (Glass et al., 2003).

Biases in social-emotional processing and stimuli interpretation may predispose an individual to aggression. Children with hostile attribution biases may encode certain social cues as being erroneously aggressive as well as generate more aggressive reactions to solving problems.

Additionally, research has shown that being exposed to violence may predispose adolescents to interpret ambiguous relationship cues with aggression.

Parental & Familial Risk Factors

Attachment theory proposes that a secure relationship between a caregiver and child is related to healthy romantic relationships while insecure caregiver and child relationships are associated with problems with intimacy in later romantic relationships. Exposure to family violence, particularly to multiple forms of maltreatment such as child abuse and parental fighting, is strongly related to both victimization and perpetration of future violence (Glass et al., 2003).

Even nonviolent forms of conflict like verbal aggression or patterns of problematic behavior between parents can predict engagement in violent relationships as either a perpetrator or aggressor (Ellis & Dumas, 2018). As discussed earlier, social-cognitive theories propose that children internalize behaviors that they witness early on which explains why early exposure to

violence may shape children's belief systems and allow them to accept the normalcy of violence. Research also reveals that males justify dating violence more than females. They may justify using violence in their own lives and rely on aggression for resolving conflicts or in moments of frustration although familial attitudes of acceptance may fluctuate over time.

The family setting is also where beliefs and attitudes surrounding traditional gender roles may be ingrained in early childhood, despite a lack of empirical support for this association. Traditional gender roles may be particularly salient during adolescence. Exposure to family violence may serve to reinforce negative gender stereotypes such as men being dominant and controlling while women are submissive and timid which children may attempt to replicate in their lives as they are older. In one study, persistently observing unidirectional parental violence did not directly relate to traditional gender norms but did translate to dating norms such as how boyfriends and girlfriends should act in the context of a relationship. Gender roles and attitudes about the acceptability of violence work to enforce expectations of normal behaviors of what constitutes a romantic relationship.

Peer Risk Factors

Peer groups possess a lot of influence on social behavior and are a context in which peers learn social norms. Peers can negatively influence or encourage aggression and antisocial and deviant behavior. Behaviors learned during adolescence may then be practiced as adolescents enter romantic partnerships. Some research indicates that associating with friends who have experienced dating violence will increase the risk of perpetrating dating violence. Female adolescents who were psychologically victimized in a relationship have been shown to affiliate

with aggressive peers who were previously victimized. Associations between the perpetration and victimization of peer violence and dating violence have also been shown revealing overlaps between multiple contexts of violence (Swahn et al., 2008).

Environmental Risk Factors

There is limited evidence on community factors and their influence on teenage dating violence specifically, although these associations within adult relationship violence are well studied. Exposure to community or neighborhood violence has been shown to play a significant role in shaping the attitudes of adolescents (Glass et al., 2003). In one study evaluating high schoolers' perpetration and victimization involvement in both community and dating violence (N = 719), researchers found that being exposed to weapons and community violence was a consistent predictor of future dating violence perpetration and victimization (Malik, Sorenson, & Aneshensel, 1997). This finding was also consistent across genders. Exposure to community violence can also cause children to develop hostile attribution biases (Parker, 2018) and can desensitize children and perpetuate attitudes of acceptability towards violence.

According to the Broken Windows Theory, proposed by Wilson and Kelling, the physical environment of a community reflects the permissible behaviors of a community and thus signs of disorder within a neighborhood can serve to reinforce the acceptability of behavior such as teen dating violence (Wilson & Kelling, 1982). Disorder can include examples such as gang activity, abandoned buildings, or public drug or alcohol usage, etc. In one study of urban adolescent males, researchers found that males engaging in community violence were also likely to engage

in teen dating violence, reflecting a pattern of violence across multiple contexts (Reed, Silverman, Raj, Decker, & Miller, 2011).

Media also is an important socialization agent where children learn norms about social interactions and are introduced to images of romantic relationships. Television shows, songs, movies, and websites can promote stereotypical gender norms as well as objectify or sexualize women which play into expectations of relationship dynamics. Media can consequently influence adolescents' views on dating violence acceptability. In one study, adolescents exposed to multiple forms of aggressive media depicting tolerance of dating violence showed higher levels of teen dating violence over three years which was mediated by their attitudes (Friedlander, Connolly, Pepler & Craig, 2013).

Health Outcomes of Dating Violence

There have been several cross-sectional studies that have enumerated the association between teen dating violence and adverse health outcomes in both genders, although most research has focused on female victims. An analysis of high school females in 1997 and 1999 revealed that experiencing physical and sexual dating violence was strongly associated with an increased risk for substance use, unhealthy weight maintenance behaviors, such as laxative and diet pill usage, earlier initiation of sexual intercourse and attempted suicide (Silverman et al., 2001). Teen dating violence was strongly associated with cigarette smoking and suicide attempts for both males and females in a study of older adolescents. Male students had an increased risk for suicidal ideation and binge eating while female students had a risk for marijuana use and depressive symptoms after dating violence victimization (Ackard, Eisenberg, & Neumark-Sztainer, 2007). The severity

and frequency of teen dating violence have been associated with higher levels of post-traumatic stress disorder in females while severity and frequency of dating violence victimization were strongly found to correlate with anxiety, depression, and PTSD in males (Callahan, Tolman, & Saunders, 2003). In a nationally representative study of adolescents, female dating violence victimization increased the risk for heavy episodic drinking, depressive symptoms, suicidal ideation, and smoking while suicidal ideation, marijuana use, and antisocial behaviors increased in victimized males (Cleveland, Herrera & Stuewig & 2003). Females who were involved in violent dating relationships were 3 times more likely to have a sexually transmitted disease (STD), twice as likely to have a teenage pregnancy, half as likely to use condoms consistently compared to females with no previous history according to one study (Wingood et al., 2001).

Defining Suicidal Behaviors

It is important to clarify language and define terms to promote sensitivity for the populations being discussed and prevent the stigmatization and prevention of help-seeking for suicidal behaviors. Throughout this paper, the term “died by suicide” or “death by suicide” will be utilized to describe fatal suicidal behavior in substitution for longstanding phrases such as “committed suicide,” “successful suicide” or “completed suicide.” The term “attempted suicide” in substitute of “failed attempt” or “nonfatal suicide” will be used to describe non-fatal suicidal behavior. The terminology used throughout this paper has been shown to have the highest ratings of acceptability by adults who have been affected by suicide (Padmanathan et al., 2019) as well as support from the CDC.

Suicidal behaviors and the terminology used throughout this paper will be consistent with those laid out by the CDC, which separates self-directed violence with the intent to end one's life from self-injurious behavior with unknown or non-suicidal intent. Suicide is defined as “death caused by injuring oneself with the intent to die.” A suicide attempt is a non-fatal, self-directed, behavior with the intent to die. Behaviors that do not result in injury but still have suicidal intents are classified as suicide attempts. Suicidal ideation is defined by “thinking about, considering, or planning suicide” (Konsky, May & Saffer, 2016).

Proposed Etiology of Suicidal Behaviors

Bridge and colleagues (2006) have proposed a developmental-transactional model to explain suicidal behavior in youth which can serve to identify risk factors for suicidal behaviors and target intervention strategies to these predispositions. This model hypothesizes that suicidal behaviors involve the overlap of a psychiatric predisposition such as an underlying mood disorder and the personality factor of impulsive aggression. Impulsive aggression may have a neurobiological basis such as impairments in executive functions and shifts in serotonergic hypoactivity in the prefrontal cortex. Low inhibitory control, which includes irritability, impulsivity and reactionary aggression and difficulties with emotional regulation, is a characteristic found in individuals with substance use disorders and conduct disorders (Tarter, Kirisci, Reynolds & Mezzich, 2004). The developmental-transactional model proposes intergenerational transmission of risk factors from parents to their offspring. Impulsive aggression, anxiety and other personality factors such as neuroticism and cognitive beliefs such as pessimism emerge before puberty while the onset of mood disorders occurs after puberty. The interaction between mood disorders and impulsive aggression fosters one's predisposition for

suicidal behavior. Researchers also hypothesize that impulsive aggression is a mechanism of transition from suicidal ideation to attempted suicide. This transition from thought patterns to attempts is also exacerbated by acute life stressors such as interpersonal conflict. The availability of lethal means such as the presence of a gun, previous exposure to suicide and subsequent imitation, can serve as facilitators can increase the risk of a fatal suicide attempt. There are also protective factors in this model that impede the progression from suicidal ideation to attempted suicide that can work to by slowing the progression of these suicidal cognitions or lowering the risk of onset.

Ideation-to-Action Framework for Suicide

Traditional frameworks for suicide treat precursors to suicidal behaviors as a unitary measure as opposed to the ideation-to-action framework that identifies precursors of suicidal ideation that are distinct from precursors that allow for the progression from suicidal ideation to suicidal action such as attempted suicide (Klonsky, May, & Saffer, 2016). Risk factors specifically for ideation include depression, impulsivity, and non-suicidal self-injurious behavior while risk factors for the transition to attempted suicide include access to lethal agents, certain mental illnesses such as PTSD and a lack of pre-meditation/impulsivity. The three-step theory of suicide proposed by Slonsky and May delineates three steps for the progression from suicidal ideation to attempted suicide: development of suicidal ideation, the escalation of moderate to strong ideation and the progression of ideation to attempted suicide (2015). This theory postulates that suicidal ideation is the result of feelings of pain and hopelessness. Social connectedness then serves as a protective factor that prevents ideation from escalating. The transition from ideation to attempted suicide then is facilitated by factors that can increase one's capacity to make a suicide attempt

such as habituation to violence, death or pain as well as access to lethal means. The Interpersonal-Psychological theory of suicide (IPTS) pioneered by Joiner proposes that two factors, the perception of being a burden on others and social isolation integrate to prompt a desire to die (2005). This theory, in accordance with the 3-Step-Theory, also hypothesizes that individuals will not progress from ideation to action unless they develop the capacity for suicide through exposure and habituation to pain and death.

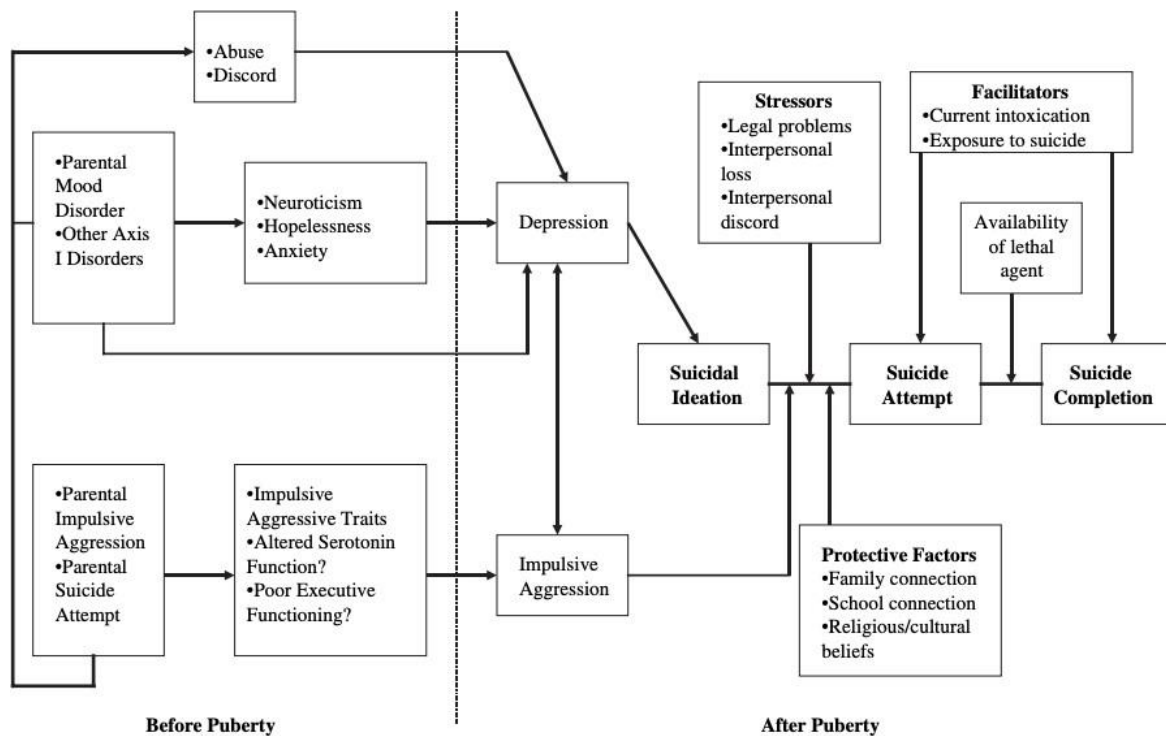


Figure 1: Developmental-Transactional Model of Suicidal Behavior in Youth

Adapted from: Bridge, J., Goldstein, T., & Brent, D. (2006). Adolescent suicide and suicidal behavior. *Journal of Child Psychology and Psychiatry*, 47(3-4), 372-394.

Prevalence of Suicidal Behaviors in Adolescent Populations

There was a total of 47,000 deaths by suicide in 2017, meaning approximately one individual died by suicide every 11 minutes in the United States. Suicide is the tenth leading cause of death within the U.S., and the second leading cause of death among individuals ages 10 to 24

according to data from the Centers for Disease Control (Heron, 2019), only after unintentional injury. Suicide rates within this age group have also increased by 56% between 2007-2017, signifying that suicide in child and adolescent populations is a public health crisis that is on the rise. Additional research confirms this finding as there has been a 92% increase in visits to the emergency department for youth under 18 years of age for both suicidal ideation and attempts from 2007 to 2015 (Rufino & Patriquin, 2019), despite a nonsignificant increase in the total amount of emergency department visits.

Age

As age increases, suicide rates increase. Proposed explanations of this finding are the higher rates of mental illness in adolescents compared to children, specifically combinations of mood disorders and substance abuse in older age that may contribute to suicidality. Older adolescents also possess a higher cognitive capacity to both plan and execute more lethal means of death by suicide and evidence shows higher degrees of planning and stronger intent in older adolescents (Bridge, Goldstein & Brent, 2006).

Gender Identity

Adolescent males have higher rates of death by suicide than female adolescents despite females having higher prevalence rates for both suicidal ideation and attempted suicides, particularly after puberty. A proposed explanation for the gender differences in suicide rates is higher levels of aggression in males compared to females, higher levels of comorbid mood and alcohol use disorders as well as more lethal attempted suicide methods (Bridge, Goldstein & Brent, 2006).

Race & Ethnicity

In the United States, the prevalence of suicide has historically been higher for non-Hispanic white youth compared to minority groups, except for non-Hispanic American Indian/Alaska Native. However, there has been an increase in African American male youth suicide that impacts this trend. Additionally, Hispanic youth have a higher prevalence of both suicidal ideation and attempted suicide but not for death by suicide.

Suicidal Ideation Prevalence Rates

Suicidal ideation can have a range of severity from more passive thoughts of death to specific plans and intents to hurt oneself (Bridge, Goldstein & Brent, 2006). The prevalence of suicidal ideation in adolescent populations is around 15-25%. The prevalence of more serious ideation, such as a specific plan, is around 6.0% for females and 2.3% for males. According to the 2017 YRBS, 17.2% of students indicated they had seriously considered attempting suicide within a year before taking the survey. In a gender breakdown, 22.1% of female students indicated having seriously considered attempting suicide compared to 11.9% of male students. Black female (22.4%), Hispanic female (22.2%) and white female (21.2%) students had similar prevalence rates which were all lower than black male (6.6%), Hispanic male (10.8%) and white male (13%) students. Female students indicated higher levels of seriously considering suicide across all grade levels compared to male students. Overall, white (17.3%) students had a higher percentage of seriously considering attempting suicide compared to black (14.7%) students, a trend also observed in male-identifying students. Among students who identified as gay, lesbian or bisexual (47.7%) and students who indicated they were not sure of their sexuality (31.8%) the prevalence of having seriously considered suicide was higher than heterosexual (13.3%) of students. Female

students identifying as lesbian or bisexual (51.0%) or not sure (35.9%) had a higher prevalence than heterosexual female students (16.9%). Male students identifying as gay and bisexual (37.0%) and not sure (23.9%) also had higher prevalence rates than heterosexual males (10.2%). From 2007-2017, according to YRBS data, there has been an overall increase in the prevalence rates of seriously considering suicide (14.5%–17.2%).

According to the 2017 YRBS dataset, 13.6% of students indicated having made a plan on how they would attempt suicide in the 12 months before taking the survey, measured separately from seriously considering suicide in the past year. Female (17.1%) students reported higher levels of having made a suicide plan than male (9.7%) students, consistent with the higher rates of thoughts of suicide in females. In a breakdown by ethnicity, black female (18.9%), Hispanic female (17.2%), and white female (15.3%) students had higher prevalence rates than black male (6.5%), Hispanic male (9.9%), and white male students (9.6%). Prevalence rates for gay, lesbian and bisexual (38.0%) students and students who indicated they were not sure of their sexuality (25.6%) were higher than for heterosexual (10.4%) students for having a plan about attempting suicide. Lesbian and bisexual female (40.8%) students and not sure female (26.6%) students had higher prevalence rates than heterosexual (12.8%) female students. Similarly, the prevalence rate for gay and bisexual male (28.7%) students and not sure male (21.9%) was higher than heterosexual male (8.2%) students. When evaluating overall trends in having made a suicide plan, prevalence rates increased from 2009-2017 (10.9% - 13.6%) but there was no significant change from 2015-2017 (14.6%-13.6%).

Attempted Suicide Prevalence Rates

Estimates for the prevalence rate for lifetime suicide attempts for adolescents range from 1.5-10.1% for females and 1.3-3.8% for males (Bridge, Goldstein & Brent, 2006). The rate of suicide attempts that have required medical attention within a year is around 1-3%. It is important to note however that these rates may be higher in actuality due to many adolescents not seeking treatment for a suicide attempt as well as issues with reporting or acknowledgement of death by suicide (Bilson, 2018). In the nationwide YRBS data, 7.4% of students indicated having attempted suicide one or more times in the past year before the survey. Female (9.3%) students had a higher prevalence of having attempted suicide compared to male (5.1%) students. Black female (12.5%), Hispanic female (10.5%) and white female (7.3%) students had a higher prevalence than black male (6.7%), Hispanic male (5.8%) and white male (4.6%) students. Gay, lesbian and bisexual students (23.0%) and not sure (14.3%) students had a higher prevalence of attempted suicide than heterosexual (5.4%) students. For female students, the prevalence of attempted suicide was higher for lesbian and bisexual (23.7%) and not sure (12.9%) students compared to heterosexual (7.0%) students. For male students, prevalence was also higher for gay and bisexual (18.3%) and not sure (13.8%) students compared to heterosexual (4.1%) students. There were no significant changes in the prevalence rate of attempted suicide from 2015-2017 (8.6%-7.4%).

According to the 2017 YRBS data, 2.4% of students made a suicide attempt resulting in an “injury, poisoning, or overdose that had to be treated by a doctor or nurse” 12 months before the survey. Female (3.1%) students had a higher prevalence of having made a suicide attempt resulting in an injury, poisoning, or overdose that had to be treated by a doctor or nurse than male (1.5%) students. Black (3.4%) students had a higher prevalence rate than white (1.9%)

students of having made a suicide attempt that had an injury, poisoning, or overdose that had to be treated by a doctor or nurse. Hispanic female (3.8%) and white female (2.3%) students had higher rates than Hispanic male (1.7%) and white male (1.3%) students. In a breakdown by sexual orientation, gay, lesbian and bisexual (7.5%) students and not sure (5.6%) students had higher rates of having made a suicide attempt resulting in an injury, poisoning, or overdose that had to be treated by a doctor or nurse compared to heterosexual (1.7%) students. For female students, lesbian and bisexual (8.2%) and not sure (4.4%) students had higher rates than heterosexual (2.2%) students. No significant changes in this measure were found between 2015-2017 (2.8% - 2.4%).

Repeated Attempted Suicide Prevalence Rates

There is a high incidence of repeated suicide behaviors with a median recurrence of 5-15% within a year. Among individuals who have previously attempted suicide, 0.5-1.0% die by suicide each year, a rate that is significantly higher than those who have never previously attempted suicide.

Risk Factors for Suicidal Behavior in Adolescents

The integration of risk factors, stemming from biological, genetic, societal and psychological domains contributes to one's risk for death by suicide rather than a singular underlying cause. This section outlines key risk factors that have been identified by the literature that increase youth's risk for suicidal behavior. While these risk factors are not an exhaustive list, an assessment of these specific risk factors can provide a further understanding of the interplay

between teenage dating violence and suicidal behavior by evaluating any overlaps or reciprocal relationships that will be discussed later in this paper.

Psychiatric Disorders

About 90% of adolescent deaths by suicide have a history of psychiatric mental illness. The severity and chronicity of mental disorders contribute to the risk of suicide, which is found to be between 47% and 74% (Bilsen, 2018).

Mood Disorders

Mood disorders have a strong relationship with suicide risk in both males and females. Adolescents with a diagnosed mood disorders are 17 times more likely to attempt suicide than adolescents without a mood disorder (Esposito & Clum, 2002). In one study of high-risk adolescents (n = 73), researchers found that adolescents who have major depressive disorder (MDD) are 5.3 times more at risk for attempting suicide than adolescents who have no psychiatric history. Additionally, prospective studies have found that individuals with childhood-onset MDD are 4.4 times more likely to attempt suicide at some point in their lives than children with no history of mental illness. In a case-controlled study of adolescent bipolar disorder has also been found to be a risk factor for suicide (Kelly, Cornelius & Lynch, 2002).

Anxiety Disorders

Anxiety disorders have high rates of comorbidity with depression and other mood disorders, which may explain its association with adolescent suicide (Bridge, Goldstein & Brent, 2006). Children and adolescents diagnosed with social anxiety disorder have a higher risk of engaging

in suicidal behaviors than those who do not have this disorder (Rufino & Patriquin, 2019). Additionally, panic disorder has been shown to contribute to an increased risk for suicide in adolescent populations (Bridge, Goldstein & Brent, 2006). There is also some research on how sleep problems, a relevant problem in children with anxiety disorders, are highly related to suicidal ideation, attempted suicide and death by suicide (Rufino & Patriquin, 2019).

Substance Use Disorders

Substance use (alcohol/drug) disorders are strongly implicated in youth suicide rates, particularly in males with comorbid mood disorders (Bridge, Goldstein & Brent, 2006). Research has also shown that attempted suicide is more strongly correlated to substance use disorders than suicidal ideation. This finding may implicate the role of substance use in the progression from suicidal ideation to attempted suicide. For males, early initiation of hard drug use was highly correlated to an endorsement of depressive symptoms, suicidal ideation, endorsement of suicide as a personal option and attempted suicide (Cho, Hallfors & Iritani, 2007). In one national study of children and adolescents, individuals who attempted suicide were more likely to have a history of marijuana and tobacco usage (King et al., 2001). In the same study, even low rates of alcohol tobacco, marijuana use were strong risk factors for both suicidal ideation or attempted suicide in youth. In a national survey, 25% of adolescents who used illicit drugs in the past 12 months either had suicidal ideation or attempted suicide compared to 9% of adolescents with no previous illicit drug history in the past year (National Household Survey on Drug Abuse, 2002).

Conduct & Oppositional Defiant Disorder

According to both case-controlled and longitudinal studies, conduct and oppositional defiant disorders are associated with higher rates of attempted suicide (Rohde, Mace & Seeley, 1997), this effect is also heightened with the presence of an underlying substance use disorder (Bridge, Goldstein & Brent, 2006).

Individual Personality Factors

Impulsivity

Psychological autopsy studies have revealed that one-third of youth who have died by suicide met the criteria for a personality disorder (Bridge, Goldstein & Brent, 2006). Impulsive aggression, the inclination to react with hostility to provocation, is a psychological trait and a further risk factor for suicidal behavior. Additionally, multiple studies have demonstrated the relationship between impulsivity and suicide in adolescent samples. Along these lines, adolescent suicide attempts often do not involve extensive planning.

Family & Contextual Factors

Familial Dysfunction

Family dysfunction has been shown to have a statistically significant relationship to both suicidal ideation and attempted suicide in adolescents (King et al., 2001) after controlling for socioeconomic factors. Family dysfunction can include low levels of parental monitoring and a poor family environment, such as parental satisfaction with familial communication and support. In one study evaluating the nature of parent-child relationships, a negative relationship between the father and child was found to be a risk factor for suicide in older youth. A lack of parental support can also be a risk factor for suicide in adolescents (Bridge, Goldstein & Brent, 2006).

Child Maltreatment

There is strong evidence demonstrating the relationship between both physical and sexual child abuse and suicide attempts and death by suicide. Childhood sexual abuse, in particular, has a strong association with suicide attempts. Children with a history of sexual abuse are 8 times more likely to be at risk for repeated suicide attempts than children with no past victimization (Brown, Cohen, Johnson & Smailes, 1999). Intergenerational transmission of abuse plays a cyclic role in perpetuating the risk of being abused as well as increasing the risk for a future suicide attempt.

Access to Lethal Means

There has been an established association between the presence of firearms in the house and death by suicide through various case-controlled studies (Bridge, Goldstein & Brent, 2006). The presence of a gun in the household increases the likelihood of it being used as the means of attempting suicide. Additionally, guns have a high degree of lethality which contributes to a high fatality rate through these means. Higher firearm availability and less stringent gun control legislation have also been shown to contribute to the increased risk for death by suicide, factors that have been shown to be notable in youth suicide (Bridge, Goldstein & Brent, 2006).

Media

While some studies have found that participation in online forums can be a protective factor against suicide, forums can also foster the promotion of self-injurious behavior, provide support for suicide plans as well as provide methods to conceal self-inflicted injuries (Marchant et al.,

2017). Several adolescent suicide attempts and deaths by suicide have also been found to occur in clusters (Bridge, Goldstein & Brent, 2006). The amount of publicity of a suicide and the reputation of the victim can also facilitate rates of imitation and ripple effects within the community.

Integration of Dating Violence & Suicidality

Very few studies have evaluated the relationship between dating violence and suicidal behavior specifically within the context of an adolescent relationship. The acknowledgment of adolescent dating violence as a public health problem is a recent phenomenon and thus the complexity and nuances of this issue are not fully understood. Dating violence victimization within adolescent relationships highlights an important intersection with the initiation of violent behaviors coinciding with the beginning of experimentation of romantic and sexual relationships. The incidence of teen dating violence sets the groundwork for subsequent problematic patterns within relationships such as the perpetuation of intimate partner violence and/or revictimization later in life and is associated with adverse health outcomes, including suicide (Silverman et al., 2001). While casual relationships between suicidality and dating violence are difficult to determine this section will evaluate the existing literature to determine potential intersections.

An earlier analysis of 2001 YRBS data revealed that male and female students who had attempted suicide in the past year were 5 times more likely to have been involved in a physical fight in the past year, (Swahn, Lubell, & Simon, 2004) although the physical conflict did not necessarily involve a romantic partner. This finding provides support for the underlying association between interpersonal violence and attempted suicide, which can then potentially be extrapolated to

violence in dating relationships. In one study of high-risk adolescents, the prevalence of suicidal behavior was lowest in clusters of adolescents that indicated low levels of violence overall or had high levels of same-sex peer psychological aggression perpetration and victimization as well as average levels of physical violence with peers but low levels of dating violence specifically (Bossarte, Simon & Swahn, 2008). Adolescents who had the highest levels of physical dating violence and psychological aggression by someone the respondent had dated as well as high levels of perpetration and victimization of same-sex peer physical violence and psychological aggression had the highest prevalence of suicidal behavior. The cluster of adolescents who indicated markedly higher levels of both perpetration and victimization of physical dating violence and psychological aggression with a dating partner, but lower levels of peer-directed violence and psychological aggression had the second-highest prevalence rate for suicidal behavior.

In an analysis of urban minority youth, a history of dating violence in the past year was strongly related to an attempted suicide in the past year in females after controlling for persistent sadness and other risk factors (Olshen, McVeigh, Wunsch-Hitzig & Rickert, 2007). Dating violence in this study was operationalized through a single-item measure solely assessing physical violence victimization specifically by a boyfriend or girlfriend. Thus, this study does not provide insight into the relationship between other subtypes of teen dating violence and suicidal behaviors including ideation. Additionally, the restrictive language of boyfriend and girlfriend may have limitations due to the variability of interpretations of these terms and the nature of adolescent relationships as discussed earlier in this paper. In a cross-sectional study of high school females, lifetime prevalence of physical dating violence only, sexual dating violence only as well as

experiencing both physical and sexual dating violence were both correlated with considering and attempting suicide and were 6 to 9 times more likely to have had suicidal ideation or attempted suicide than females with no previous victimization (Silverman et al., 2001). Dating violence was assessed by a single-item measurement that specified the perpetrator as “a date or someone [they] were going out with” and looked at lifetime prevalence as opposed to victimization isolated to the past year. In an article published looking at associations between physical teen dating violence and suicidal behaviors using the 2015 YRBS data, researchers found that adolescents who had experienced physical dating violence in the past year were 1.92 times more likely to have had suicidal ideation in the past year, 1.67 times more likely to have made a suicide plan in the past year, and 2.42 times more likely to have attempted suicide in the past year compared to students with no history of physical dating violence (Baiden, Mengo, & Small, 2019). An analysis from the International Dating Violence study that looked at physical assault and sexual coercion among college-aged individuals, revealed that both perpetrators and victims of physical assault by a dating partner had higher rates of suicidal ideation, which was mediated by depression (Chan et al., 2010). In another study of female adolescents who had received an abortion, the severity of dating violence was correlated with the severity of suicidal ideation and was moderated by aggression (Ely et al., 2011). In a study of female Asian-American and Pacific Islander high school students, perpetration and victimization of several different dimensions of controlling behavior ranging from physical violence, sexual coercion as well as psychological aggression were all associated with suicidal ideation and attempted suicide (Else et al., 2009), with the association being significantly stronger for victims of dating violence.

Potential Mechanisms for Suicidality & Dating Violence

Although some studies have demonstrated the association between specific types of teen dating violence and suicidal behaviors, few have proposed theoretical mechanisms for why suicidality increases in both perpetrators and victims of dating violence. There are no studies that assess whether continual participation in violent relationships leads to suicidal ideation and attempted suicide or if having a predisposition toward suicidal thought patterns means one is more likely to engage in violent romantic relationships in adolescence either as a victim or perpetrator (Ely et al., 2011). Dating violence may directly influence the risk for suicidal behaviors or may lead to other outcomes that can facilitate the development of suicidal behaviors.

Ideation-to-Action Framework Revisited

As discussed above the ideation-to-action framework and theories of suicide rooted within this model, such as the Three-Step and Interpersonal Psychological theories of suicide, all hypothesize that the progression from suicidal ideation to suicidal action involves an increased capacity for suicide such as habituation to fears of dying and increased tolerance for pain.

Rooney and colleagues have proposed that exposure to violence either as a victim or perpetrator can increase the capability for suicide and thus facilitate the progression from ideation to action (2019). In their study, violent victimization such as witnessing a shooting/stabbing, being held at knife/gunpoint, or being in a physical fight that resulted in a serious injury was associated with suicide attempts even when controlling for depressive symptoms, substance use, externalizing behaviors other risk factors in adolescents who indicated they had serious thoughts of suicide in the past year. Violence perpetration was also found to be more strongly associated with suicide attempts for adolescents who had experienced more victimization. The Interpersonal Psychological theory of suicide explains how traumatic and painful experiences can enhance the

capability for suicide by increasing pain tolerance or lowering the innate fear of dying. It is hypothesized that violence victimization and perpetration can contribute separate elements that increase one's capacity for suicide such as increased pain tolerance and decreased fear of death respectively.

The basis of these theories can be applied to teen dating violence to understand its association with suicidal behaviors as well. Exposure to teenage dating violence as both a victim and a perpetrator may independently contribute to the capacity for suicide in adolescents similar to how exposure to violence, in general, has this effect. Additionally, evidence shows that being a victim of interpersonal violence is the strongest predictor of future perpetration of intimate partner violence (O'Keefe, 1997). Numerous studies have also shown that among middle school and high school-age children, about 50% reported mutual violence between both partners. Mutual aggression has also been reported to be as high as 70% in some studies (Malik et al., 1997). The overlap in perpetration and victimization of teen dating violence can theoretically increase one's capacity for suicidal behavior and facilitate the transition from suicidal ideation to action. Being the victim of teen dating violence could increase pain tolerance especially after repeated victimization while perpetration may lower fear of death, especially if the adolescent has previously been a victim. Perpetrators of psychological aggression in a relationship can also socially isolate victims from support networks and closely monitor their partner's location. Social isolation is a key proximal factor in the development of suicidal ideation as proposed by the IPTS. Thus, multiple subtypes of violence within a relationship may integrate to predispose a victim or perpetrator to both develop suicidal ideation and the capacity to act on those cognitions as proposed by the ideation-to-action framework for suicide.

Other Potential Mechanisms

Participation in teen dating violence has been linked to several negative health outcomes such as the development of mood disorders as well as substance use disorders. The presence of these psychopathologies may then increase the risk of developing suicidal thoughts or attempting suicide. The mediating effect of negative mental health trajectories after participation in teen dating violence is substantiated in studies that did not find significant correlations between suicidality and teen dating violence when controlling for the presence of mental illness.

Conversely, the presence of certain psychiatric illnesses may predispose individuals to engage in teen dating violence which also serves to justify why these populations have increased suicidality due to the shared risk factor of having a mental health disorder.

A possible genetic mechanism can also explain the relationship between teen dating violence and suicidality, as both have been implicated in the intergenerational transmission of impulsivity and aggression that potentially underlies both behaviors. Another proposed mechanism focuses on other physical health outcomes of severe dating violence such as traumatic brain injury (TBI) and neuroinflammation. There is evidence that individuals who have a history of TBI have a higher risk of death by suicide (Wadhawan et al., 2019).

Evaluation of 2017 Youth Risk Behavior Survey

The purpose of this section is to replicate a previous 2007 study of YRBS data that looked at the relationship between dating violence and suicidal behavior to evaluate if the findings are

consistent in a 10 year follow up. The second analysis will evaluate the relationship between specific subtypes of teen dating violence, particularly physical and sexual dating violence victimization, and different suicidal behaviors including suicidal ideation and attempted suicide using 2017 data.

Follow Up to 2007 YRBS Findings

In a previous study, Belshaw and colleagues evaluated the relationship between teen dating violence and suicidal behaviors using the 2007 YRBS dataset (2012). Results of their study indicated that adolescent dating violence victims had a higher risk for planning and/or attempting suicide than students who had not previously victimized. Relationship violence was found to be a significant predictor of all four suicide outcome variables studied: suicidal ideation, having made a suicide plan, attempted suicide and sustaining an injury from an attempted suicide. Adolescents who had experienced dating violence from a boyfriend or girlfriend were found to be twice as likely to have suicidal ideation and attempt suicide compared to non-victimized adolescents after controlling for drug use and sexual abuse history.

Measures

For their outcome variables, Belshaw and colleagues had two measures of suicidal behavior, suicidal ideation, and suicidal action. Suicidal ideation was measured through the questions “During the past 12 months, did you ever seriously consider attempting suicide?” and “During the past 12 months, did you make a plan about how you would attempt suicide?” Adolescents who indicated having considered suicide or having made a suicide plan were coded as 1 while adolescents who endorsed neither item were coded as 0. Suicidal action was measured with the

following questions “During the past 12 months, how many times did you actually attempt suicide?” and “If you attempted suicide during the past 12 months, did any attempt result in an injury, poisoning, or overdose that had to be treated by a doctor or nurse?” Adolescents who had one or more suicide attempts and any attempts that resulted in injury were coded as 1 while those who indicated no past attempted suicides were coded as 0.

In this study, teen dating violence was assessed through the question “In the last 12 months, have you ever been hit, slapped, or physically hurt on purpose by a boyfriend or girlfriend?” This measure restricts the instance of victimization within the physical subtype while the language of “boyfriend/girlfriend” also may restrict the prevalence compared to the most recent questionnaire which asks about violence incited by someone the respondent has “dated” or “gone out with.” In order to facilitate comparison with 2017 data, our analyses will only include the physical data violence item.

Evaluation of Physical and Sexual Teen Dating Violence and Suicidal Behaviors

The purpose of this second analysis is to determine the association between suicidal behaviors and different subtypes of dating violence victimization in adolescents and whether there are notable variations by sex. Previous studies have operationalized the instance of dating violence to only include physical violence measures, which fails to address the presence of other forms of abuse such as sexual violence. This study will include physical violence, sexual violence and a combined violence profile as measured by the national cross-sectional 2017 YRBS.

Methods

Participants

The data for the analysis is from the CDC's 2017 YRBS study conducted from September 2016 through December 2017. The YRBS is a national school-based survey that monitors the prevalence of high school students' engagement in health-risk behaviors. The YRBS sample consisted of students in grades 9-12 from public, charter, Catholic and non-public schools from all 50 states and the District of Columbia. The public dataset has been de-identified and thus no IRB approval was needed for these analyses. Students completed the self-reported questionnaires during a class period. For the 2017 YRBS, a total of 14,765 completed questionnaires were deemed usable by the CDC with an overall response rate of 60%.

Measures

The outcome variables that were tested in these analyses were suicidal ideation, having made a suicide plan and attempted suicide which were coded as binary variables during the data analysis. These three variables were measured through the survey questions "During the past 12 months, did you ever seriously consider attempting suicide?" and "During the past 12 months, did you make a plan about how you would attempt suicide?" and "During the past 12 months, how many times did you actually attempt suicide?" Respondents who indicated one or more suicide attempts in the past 12 months were coded as 1 while no suicide attempts in the past 12 months was coded as 0.

The independent variables looked at in these analyses were physical teen dating violence and sexual teen dating violence victimization. Physical dating violence victimization was assessed

with the question “During the past 12 months, how many times did someone you were dating or going out with physically hurt you on purpose? (Count such things as being hit, slammed into something, or injured with an object or weapon).” Sexual dating violence victimization was assessed with the question “During the past 12 months, how many times did someone you were dating or going out with force you to do sexual things that you did not want to do? (Count such things as kissing, touching, or being physically forced to have sexual intercourse.)” Students were given the following options for both questions: “I did not date or go out with anyone during the past 12 months, 0 times, 1 time, 2 or 3 times, 4 or 5 times, or 6 or more times.” To simplify data analysis, students who had been on a date in the previous 12 months were coded as 0, students who were physically hurt one or more times were coded as 1, students who had not been on a date in the previous 12 months were coded as 2. This coding scheme was also used for sexual dating violence.

Data Analysis

Individuals who were missing a third or more of their data were excluded from analyses. All analyses were performed using R Statistical Software (Foundation for Statistical Computing, Vienna, Austria). Logistic regression models were used to evaluate the association between physical and sexual TDV and suicidal behaviors while controlling for other known predictors of suicidal behaviors such as past drug use, sexual assault history, race, and age.

Results

Sample Characteristics

Table 1 displays a breakdown of the demographic data of the adolescents who completed the 2017 YRBS. A majority of students (68.3%) had dated or gone out with someone in the 12 months before the survey. There were slightly more females (51.5%) than males (47.9%) in the sample. For physical dating violence, 5.5% of adolescent students had experienced physical dating violence in the past year, 31.1% had not gone on a date in the past year and 59.7% had gone on a date but did not experience physical violence. For sexual dating violence, 4.13% of adolescent students had experienced sexual dating violence, 31.1% had not gone on a date in the past year and 59.0% had gone on a date but did not experience sexual violence in the past year. In terms of sexual orientation, 14.1% identified as gay, lesbian, bisexual, or were unsure of their sexual orientation. Within the sample, 17.4% of adolescents experienced suicidal ideation, 13.6% of students made a suicide plan, and 5.7% had attempted suicide in the past 12 months. In terms of control variables, 7.2% of adolescent students were physically forced to have intercourse, 31.5% felt sad or hopeless almost every day for at least 2 weeks so that they stopped doing their usual activities, 18% had been bullied in school while 14.2% were cyberbullied. A small percentage of students (0.96%) used heroin, meth, or marijuana in the past year.

Physical Dating Violence & Suicidal Behaviors: Ten-Year Follow Up

The first aim of these analyses was to conduct a follow up to Belshaw et al's study examining the relationship between physical dating violence and suicidal behaviors (2012). The authors conducted two logistic regression models to examine the association between TDV and suicidal ideation and action while controlling for a history of sexual assault and past drug use. The logistic regression results for our replication of the 2012 study are shown in Table 2. Model 1 displays the association between suicidal action comprised of suicide attempts and injurious attempts with physical dating violence. Model 2 displays the association between

Table 1		Sample Characteristics	
Variables		N	%
Demographic Variables			
Sex			
Male		6870	47.9
Female		7392	51.5
Race and/or Ethnicity			
White (Non-Hispanic)		6200	43.2
African American (Non-Hispanic)		2655	18.5
Hispanic		1510	10.5
Asian		635	4.4
Other		3089	21.5
Grade			
9		3786	26.4
10		3630	25.3
11		3527	24.6
12		3302	23.0
Sexual Identity			
Heterosexual		11888	82.8
Gay, Lesbian, Bisexual, Unsure		2019	14.1
Explanatory Variables			
Experienced TDV in the past year			
Physical TDV		783	5.5
Sexual TDV		593	4.1
Outcome Variables			
Suicidal Behavior in the past year			
Suicidal Ideation		2492	17.4
Suicide Plan		1957	13.6
Suicide Attempt		824	5.7
Injurious Suicide Attempt		828	5.8

suicidal ideation comprised of seriously considering suicide and having had a suicide plan with physical dating violence. The major results of our study are qualitatively consistent with those

found in using 2007 data. Belshaw et al. had found that physical TDV was a statistically significant predictor ($p < 0.001$) of all four measures of suicidal behavior. This finding was paralleled in our analysis using 2017 YRBS data, reflecting the persistence of how experiencing relationship violence increases the risk for engaging in different forms of suicidal behavior including ideation and action.

In our study, marijuana usage was significantly related to all four suicidal behaviors. Current heroin increased the propensity of suicidal action only. Lifetime cocaine usage was strongly associated with increased risk for seriously considering suicide, having made a suicide plan, and an injurious attempt but not for attempting suicide. Belshaw et al found that usage of all three substances, marijuana, cocaine, and heroin, increased the likelihood of experiencing all suicidal behaviors.

The previous study found that females were more likely than males to have both suicidal ideation and suicidal action. Our experiment showed results consistent with this finding. Females were significantly more likely to experience all four measures of suicidal behaviors than males. For the race variable, the previous study only found a significant relationship between attempting suicide and race. This study also found that younger adolescents were more likely to experience both suicidal ideation and action but only significantly increased seriously considering suicide and suicide attempts. In our study, age was not binarized into older and younger adolescents as we had a wider breadth of ages in the sample.

TABLE 2. Logistic Regression Estimates and Standard Errors for Suicide Ideation and Action (N = 14,356)

Predictor Variable	Model 1 Suicidal Action		Model 2 Suicidal Ideation	
	Suicide Attempt	Injurious Attempt	Seriously Considered Suicide	Suicide Plan
Outcome Variable				
Physical Dating Violence	0.964***	0.979***	0.732***	0.785***
	0.116	0.116	0.091	0.094
Control Variables				
Sex	-0.523***	-0.553***	-0.676***	-0.541***
	0.089	0.089	0.051	0.057
Sexual Assault History	1.412***	1.385***	1.289***	1.260***
	0.101	0.101	0.076	0.079
Heroin Use	0.866***	0.814**	0.146	0.208
	0.247	0.248	0.216	0.219
Marijuana Use	0.819***	0.796***	0.560***	0.561***
	0.089	0.089	0.052	0.058
Cocaine Use	0.312	0.333*	0.358**	0.425***
	0.166	0.165	0.118	0.124
Race	0.210*	0.18207*	-0.152**	-0.011
	0.083	0.083	0.049	0.054

Model 1: Suicidal Actions (Suicide attempt or Injurious suicide attempt)

SA (suicide action) = $\beta_0 + \beta_1(\text{heroin}) + \beta_2(\text{marijuana}) + \beta_3(\text{cocaine}) + \beta_4(\text{sex}) + \beta_5(\text{age}) + \beta_6(\text{forced intercourse}) + \beta_7(\text{race})$

Model 2: Suicidal Actions (Seriously considered suicide or Suicide plan Attempt)

SA (suicide ideation) = $\beta_0 + \beta_1(\text{heroin}) + \beta_2(\text{marijuana}) + \beta_3(\text{cocaine}) + \beta_4(\text{sex}) + \beta_5(\text{age}) + \beta_6(\text{forced intercourse}) + \beta_7(\text{race})$

* $p < 0.01$, ** $p < 0.001$

Adolescent students with a previous history of sexual assault were almost four times more likely to have suicidal ideation and suicidal action than adolescents who had not previously experienced sexual violence. This variable was one of the strongest predictors of suicidal behavior. Adolescents who experienced physical assault from a boyfriend or girlfriend in the past year were more likely to attempt and seriously consider suicide (2.62 and 2.08, $p < 0.001$,

respectively) than adolescents who did not experience relationship violence. These findings agree with the authors of the study we replicated as victims of physical TDV were almost twice as likely to attempt and seriously consider suicide according to their data (1.86 and 1.85, $p < 0.001$, respectively). Even after controlling for sexual assault history and drug usage, physical assault by a boyfriend or girlfriend significantly predicted seriously considering suicide, having a suicide plan, attempting suicide, and injurious suicide attempts in the past year. Physical TDV was only a significant predictor of making a suicide plan and attempted suicide according to the 2007 data. This finding may reflect the increasing severity in the past 10 years of the issue of relationship violence victimization in adolescence and its influence on self-harming behaviors.

Association Between Physical and Sexual TDV and Suicidal Behaviors

The second aim of this analysis was to examine the association between different types of teen dating violence, specifically physical and sexual dating violence, and suicidal behaviors. Most studies have solely focused on the physical domain of relationship violence as their main explanatory variable, simultaneously neglecting other potentially informative patterns of abuse that may relate to negative health outcomes. As shown in Table 1, both physical and sexual TDV affected over a thousand adolescent students in the past year ($n = 1,051$). We hypothesized that experiencing physical violence and sexual violence will increase the likelihood of experiencing suicidal ideation and action, after controlling for various risk factors. Additionally, an interaction term was used in our analysis to account for the influence of experiencing both types of violence. According to the ideation-to-action frameworks for suicide, experiencing multiple forms of violence may increase the likelihood of engaging in suicidal behaviors. Thus, adolescents who have been physically and sexually abused by a romantic partner in the last year may have a

higher risk of experiencing suicidal behaviors than adolescents who have experienced either physical or sexual dating violence in isolation and adolescents who have never experienced TDV.

Table 3 displays the results of the logistic regression to explore the association between physical and sexual TDV and suicidal behaviors after controlling for known predictors of suicidal behaviors. Experiencing both physical and sexual dating violence in the past year was positively associated with all four suicide measures. Experiencing sexual TDV was significantly associated with having suicidal ideation, having made a suicide plan, attempting suicide, and having an injurious suicide attempt in the past year after controlling for physical TDV. Physical TDV significantly increased the risk of having made a suicide plan, having a suicide attempt and having an injurious attempt but not suicidal ideation in the past year after controlling for sexual TDV. Table 4 displays the results of the interaction between physical and sexual TDV and the suicidal outcomes. There was a significant interaction for sexual TDV for all four suicidal outcomes. This reveals that the effect of past sexual TDV victimization on experiencing suicidal behaviors depends on experiencing physical TDV. Additionally, the effect of past physical TDV victimization on having made a suicide plan, having a suicide attempt and an injurious attempt also depends on having experienced sexual TDV. Adolescent students who were previously physically and sexually abused by a dating partner in the past year were almost twice as likely to attempt suicide and have an injurious suicide attempt that needed to be treated with a healthcare professional than students who did not have a history of abuse (1.95 and 2.01, $p < 0.001$, respectively). Adolescents who experienced both subtypes of violence were also 1.52 times more likely to have experienced suicidal ideation and 1.67 times more likely to have made a suicide

Table 3. Logistic Regression Estimates DVV Associated with Suicidal Behavior (N = 14356)

Variables	<u>Suicide Ideation</u>		<u>Suicide Plan</u>		<u>Suicide Attempt</u>		<u>Injurious Attempt</u>	
	Coefficient	<i>p</i> value	Coefficient	<i>p</i> value	Coefficient	<i>p</i> value	Coefficient	<i>p</i> value
	sd error		sd error		sd error		sd error	
Experiencing TDV in past 12 months								
Physical TDV	0.199	0.088	0.244*	0.0355	0.613***	6.8E-06	0.614***	6.2E-06
	0.116		0.116		0.136		0.136	
Sexual TDV	0.274*	0.022	0.269*	0.0249	0.292*	0.044	0.302*	0.037
	0.120		0.120		0.145		0.144	

*Model adjusted for race and/or ethnicity, grade, sex, feeling sad/hopeless, bullying victimization, cyberbullying victimization, sexual identity, and binge drinking.

* $p < 0.01$, ** $p < 0.001$

Table 4. Logistic Regression Estimates DVV Interaction Terms Associated with Suicidal Behavior (N = 14356)

Variables	Suicide Ideation		Suicide Plan		Suicide Attempt		Injurious Attempt	
	Coefficient sd error	<i>p</i> value	Coefficient sd error	<i>p</i> value	Coefficient sd error	<i>p</i> value	Coefficient sd error	<i>p</i> value
Experiencing TDV in past 12 months								
Physical TDV	0.230 0.116	0.134	0.244* 0.116	0.0355	0.720*** 0.160	7.13E-06	0.706*** 0.160	1.04E-05
Sexual TDV	0.3064* 0.139	0.027	0.284* 0.140	0.0431	0.416* 0.175	0.017	0.408* 0.174	0.019

*Model adjusted for race and/or ethnicity, grade, sex, feeling sad/hopeless, bullying victimization, cyberbullying victimization, sexual identity, and binge drinking.

p* < 0.01, *p* < 0.001

plan in the past 12 months (0.417, $p < 0.05$ & 0.515, $p < 0.01$, respectively). Those who experienced physical TDV were 1.9 times more likely to have attempted suicide and to have had an injurious suicide attempt in the past 12 months compared to adolescents who had not experienced physical TDV (0.613, 0.614 $p < 0.001$, respectively). Experiencing physical TDV increased the risk of having a suicide plan by 1.3 times (0.244, $p < 0.05$). A history of sexual assault, feeling sad or hopeless, experiencing online or school bullying, binge drinking, and being gay, lesbian, bisexual, or unsure of your sexual orientation all significantly increased the risk of all four suicide behaviors. Even after controlling for the presence of these factors, physical and sexual TDV significantly increased the risk of having made a suicide plan, attempting suicide and having an injurious attempt. Sexual TDV also significantly increased the risk for suicidal ideation after controlling of other determinants of suicidal behaviors. The significance of the interaction terms demonstrates that the effect of physical or sexual violence on suicidal behaviors depends on experiencing the other form of violence.

Discussion

The findings of our replication of Belshaw et al's evaluation of the association between physical TDV and suicidal behaviors similarly demonstrate how these issues continue to be significant public health concerns even after 10 years. As discussed earlier in this thesis, suicide is the second leading cause of death for adolescents and young adults in the United States (CDC, 2002). Despite the prevalence of suicide in this population, there is a lack of research on the causes of these behaviors (Rutter & Behrendt, 2004). Our study is consistent with previous research on the influence of violence victimization and suicidal behaviors in adolescence. We were able to replicate the results of a previous study, reinforcing the conclusion that adolescents

who are victims of dating violence are more likely to experience suicidal ideation and action than non-victimized peers.

There are a few points of divergence between our analyses and those of Belshaw et al.

Particularly, the wording of the physical violence item in our study was less restrictive due to the use of “dating” and “going out with” rather than “boyfriend/girlfriend.” Additionally, the age range within our sample was broader and included individuals ages 12-18 that were not binarized in our analyses. Our reference study binarized age into younger adolescents, 14 and 15-year-olds, and older adolescents, 16 and 17-year-olds. A large limitation in both studies is the exclusion of a depression control. Depression is a prominent risk factor for suicidal behaviors and may account for some of the association between TDV and suicide found in our studies. Although the 2017 YRBS did include a measure of persistent hopelessness and sadness, the 2007 survey did not. For reproducibility, we did not include depression as a control in our analysis.

Previous studies have concluded that adolescents’ limited exposure to romantic relationships prevents them from confronting challenges within these relationships in a healthy way (Belshaw et al, 2012). As a consequence, many adolescents may resort to violent means of problem-solving, inflicting violence on their partner. These victims may then resort to self-injurious behavior and thoughts of suicide as a way to cope with violence in intimate relationships. Furthermore, the high rates of overlap between victims and perpetrators of TDV reflect the cyclic nature of this issue. Previous studies have found perpetrators and victims of physical and sexual relationship violence had higher rates of suicidal ideation (Chan et al., 2010).

The second part of our analysis was able to provide insight into how experiencing both physical and sexual relationship violence influence suicidal behaviors in high school students. The results of our analyses on the different subtypes of relationship violence demonstrate that these two types of violence correlate to increases in suicidal behavior and significantly increase this risk when experienced together. Physical violence is strongly associated with increased risk for creating a suicide plan, attempting suicide, and having an injurious attempt and this relationship is strengthened when experienced in conjunction with sexual violence. Baiden et al. found similar results in their evaluation of physical TDV and suicidal behaviors (2019). Their analysis of 2015 YRBS indicated that adolescents who experienced physical TDV were more likely to experience suicidal ideation, having made a suicide plan, and having a suicide attempt in the past year. In our study, we were able to evaluate the impact of experiencing both subtypes of violence and the interaction between physical and sexual TDV. This methodology is unique and adds to our understanding of the relationship between how only experiencing a certain type of violence in a relationship may influence the risk of developing suicidal behaviors. Our analyses found that the effect of sexual TDV on all suicidal behaviors depends on physical TDV, highlighting how overlapping forms of violence can increase the risk of negative outcomes. Additionally, the impact of physical TDV on having made a suicide plan, attempting suicide and having an injurious attempt also depends on experiencing sexual violence. Individuals who had experienced one form of violence were more likely to experience suicidal behaviors than individuals who experienced no victimization in the past year. Experiencing both physical and sexual violence had a stronger association with suicidal behaviors than experiencing one form.

Our study did not find a significant association between sex and any of the suicidal behaviors. The lack of a significant association between sex and suicide is consistent with one previous study (Baiden et al, 2019) but contradicts some previous findings that adolescent females are more likely to experience ideation (Exner-Cortens et al., 2013) while adolescent males are more likely to attempt suicide (Bozzay, Liu, & Kleiman, 2014). For other demographic factors, Latino students were significantly more likely to experience suicidal ideation. The family is highly emphasized in Hispanic youth and strain on the familial unit may increase the risk for negative outcomes in Latino youth (Baiden et al, 2019). Studies on immigrant youth have found that stresses associated with acculturation can increase the risk for negative mental health outcomes and aggression (Forster, Grigsby, Soto, Schwartz, & Unger, 2015). Additionally, adolescents in grade 12 were significantly less likely to have attempted suicide and to have had a suicide attempt that needed medical attention.

Adolescents who identified as gay, lesbian, bisexual, or were unsure of their sexual orientation were significantly more likely to have experienced all four suicide outcomes. This finding is consistent with previous studies that have evaluated sexuality and suicide (Baiden et al, 2019; Bouris, Everett, Heath, Elsaesser, & Neilands, 2016). Experiencing TDV may further marginalize these individuals who already face discrimination due to their sexual orientation compared to their peers who are heterosexual. Microaggressions and discrimination can significantly impact mental health for marginalized individuals (Calabrese, Meyer, Overstreet, Haile, & Hansen, 2015). The success of prevention programs is contingent on early intervention and preventing future violence and unhealthy patterns in later adulthood. One issue with contemporary prevention programs rests on heteronormative gender norms that fail to address

issues of dating violence that occur in same-sex relationships. These findings demonstrate the need to create interdisciplinary intervention strategies that target multiple identities such as sexual orientation and race to address how the overlap of these identities may influence the impact of TDV on suicide.

Limitations

Although growing attention is being given to violence in teenage relationships, some limitations exist in nationally representative surveys. Due to the large scope and intention of the CDC's Youth Risk Behavior Survey (YRBS), relationship violence victimization in adolescence is not given substantial interest as is only measured through two items. Interpersonal violence is a complex and multifaceted issue and the measures used within this survey and other large, national surveys tend to use blanket questions that solely address incidences of victimization and not perpetration despite evidence to show the co-occurrence of these events (Halpern et al., 2009). The YRBS assesses physical and sexual dating violence only through single item measurements. As discussed above, forms of teen dating violence may occur outside the realms of solely physical and sexual domains, such as psychological abuse. Thus, the YRBS fails to acknowledge or assess the incidence of different forms of dating violence or instances of dating abuse that occur online. The YRBS also does not assess those who have dropped out of school, neglecting a population that may need more attention due to the absence of protective factors that exist within the school context. The YRBS also relies on self-reporting which presents its own challenges. Adolescents may not disclose the truth out of fear of identification or social desirability. They also may answer questions differently depending on individual levels of understanding that can influence prevalence rates found in this paper. They also may distort their

responses by anticipating what researchers are looking for. It is important to note however that previous research indicates the YRBS questions have good test-retest reliability. Due to the cross-sectional nature of this study, claims cannot be made about the causality of TDV and suicidal behaviors. Future studies should focus on longitudinal outcomes of TDV in order to evaluate the onset of suicidal behaviors. Future research can also provide understanding for the interaction between TDV and other risk factors for both suicide and TDV and how to structure interventions to address commonalities in these behaviors.

Implications for Physicians

Physicians may play an integral role in addressing issues of TDV and may encounter these issues in their patient populations due to negative health consequences that result from dating violence. Pediatricians and family doctors can potentially identify adolescents who are at risk of experiencing TDV or who have previously experienced TDV during routine medical visits. Adolescents may more easily incorporate recommendations from physicians due to their position (Elster & Kuznets, 1998). There has also been a push in the realms of preventative medicine and medical education to incorporate more resident training for screening and identifying TDV as well as understanding the role of a physician in addressing a TDV (Forcier, Patel & Kahn, 2003). One study evaluating resident knowledge, attitudes, and screening tools for identifying TDV found that residents reported low levels of physician training to manage these issues during medical school and residency (Forcier, Patel & Kahn, 2003). When presented hypothetical patient cases of violent relationships, residents reported missed opportunities in screening for and managing these issues. Interestingly, residents showed higher levels of concern for relationships with physical abuse present rather than psychological abuse. This finding may demonstrate that

there is a failure to acknowledge the negative consequences of these less visible forms of abuse. Participants were more likely to screen for TDV, show increased levels of concern, and discuss management strategies when the patient was female. This finding reveals a lack of understanding of TDV and how there is often mutual aggression present in these relationships. Male patients may be going undetected due to these biases. Physicians need to address their own biases such as the profile of a victim of violence to provide adequate levels of care to all patients. The sex of the resident also influenced physician responses to TDV. It is hypothesized that women may be more sensitive to issues of personal safety and dating violence and thus female physicians were more likely to address these issues with patients. Barriers to providing care for TDV to adolescent patients may be due to lack of educational training in residency and medical school, a lack of knowledge on community resources and referral sources as well as discomfort in discussing dating violence or other personal issues. The findings of this paper reveal that there are critical junctures to improve physician training on TDV. Medical schools and residency programs can increase physician interaction with younger patient populations and incorporate addressing TDV into their clinical curriculum to increase physician's levels of comfort in dealing with these issues in the field. A previous study evaluating the efficacy of a violence-screening education program found increased comfort levels and ability to identify and manage TDV in 6th-year pediatric residents and 3rd-year medical students who were given the training compared to those who were given a standard manual with articles on TDV (Abraham et al, 2001). The three-hour workshop included didactics on firearms, media, and sexual violence as well as risk factors for TDV and how to clinically interview adolescent patients. A panel of teen health educators discussed the role of violence within the community and physicians were able to role play and receive feedback on their ability to screen for TDV. The efficacy of this training

program reveals how integrative changes to medical education can improve physicians' ability to address TDV, which can be a critical point of intervention. As discussed earlier in this thesis, TDV has a high prevalence in the United States and can have severe negative outcomes, including suicide. It is important to educate future healthcare providers on how to address and care for these issues in adolescent populations to help individuals who may be abusive relationships.

Conclusion

Although increasing attention is being given to TDV and its role in negative health outcomes such as suicidal behaviors in adolescents, more prevention and intervention work needs to be done to address these issues from varying perspectives. This thesis provides an in-depth analysis of the prevalence rates of suicide and TDV as well as risk factors for both of these behaviors. We adapted current frameworks for understanding suicide to reflect how instances of TDV may increase this propensity for self-harm. Our analysis of a nationally-representative sample of high schoolers shows how physical TDV increases the risk of having suicidal ideation, making a suicide plan, attempting suicide, and having a serious suicide attempt. Additionally, experiencing physical and sexual TDV increase all four suicide outcomes compared to experiencing them in isolation. Lastly, we touched on how physician training may incorporate TDV education to better serve adolescents who are experiencing relationship violence. More research is needed on the mechanisms that underplay the association between TDV and suicide as well as longitudinal studies that can evaluate the progression of suicidal behaviors in adolescents who have experienced dating violence.

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