



Guns and Intimate Partner Violence among Adolescents: a Scoping Review

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Abstract

Purpose

Intimate partner violence (IPV) among adolescents, or teen dating violence (TDV), is a significant public health issue that may affect up to two-thirds of youth aged 12–18. Gun violence among adolescents is similarly high, accounting for 18.7% of all firearm injuries from 2010 to 2016. Despite these statistics and evidence showing that TDV continues into adulthood as IPV, gun-related TDV has not received the same level of attention as adult IPV. In this scoping review, we are guided by the following questions: (1) what are the known risk and protective factors for gun-related TDV across micro (individual, interpersonal), mezzo (school, neighborhood), and macro (policy, social norms) domains? (2) What are the future directions for this area of research?

Methods

We conducted a scoping review of eight academic databases to identify peer-reviewed studies examining risk and protective factors for gun-related TDV published in 1999–2019.

Results

Our search returned few unique results ($N = 16$). Most of the published studies described the shared individual risk factors of gun carrying/access and TDV. Mezzo studies discussed TDV within the context of peer aggression or youth delinquency and gun carrying. There were zero macro studies meeting our search parameters.

Conclusion

Our review suggests that adolescence may confer a unique blend of risk factors for both firearm and relationship violence, yet the intersection of these issues has received relatively little attention compared to gun violence in adult relationships. Areas for future inquiry involve increased surveillance of this issue and interventions addressing the shared risks for gun carrying/access and TDV.

Keywords Teen dating violence · Adolescent dating violence · Guns · Firearms · Risk factors

Intimate partner violence (IPV) among adolescents, here termed teen dating violence (TDV), is a significant public health issue that affects approximately two-thirds of youth aged 12–18 who are currently dating or dated within the

previous year (Mendoza & Mumford, 2018; Taylor et al., 2016). The rates of victimization and perpetration are similar (69% and 63%, respectively) and include mostly psychological abuse (60%), although physical and sexual abuse/assault (both 18%) occur at substantial rates (Taylor et al., 2016). Additionally, gun violence victimization among adolescents is common in the U.S. compared to other wealthy, industrialized nations, accounting for 18.7% of all firearm injuries from 2010 to 2016 (Olufajo et al., 2020). Furthermore, one of the only studies to examine TDV homicide found that 7% of adolescent female homicide victims from 2003 to 2016 were murdered by their current or former intimate partner, with a firearm most often being the weapon of choice (Adhia et al., 2019). Despite these alarming statistics and longitudinal evidence demonstrating that TDV often continues into adulthood

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as IPV (Mumford et al., 2019), notwithstanding the obvious risk of homicide even during adolescence (Kegler et al., 2018), TDV, and gun-related TDV in particular, have received significantly less scholarly attention than adult IPV involving a gun.

We are therefore guided by the following question to address this formidable social issue: (1) what do we know about risk and protective factors for gun-related TDV across *micro* (individual, interpersonal, family), *mezzo* (community, organizational, neighborhood), and *macro* (policy, laws, and social norms) domains? We present a review of literature published during the past 20 years on the role of guns in TDV followed by a summary of potential areas for future inquiry. The purpose of this scoping review is to assess the peer-reviewed literature on this topic, synthesize the main findings, and outline future research directions. In preparing this article, we adhered to the PRISMA guidelines for scoping reviews (Tricco et al., 2018).

Background

Teen Dating Violence (TDV)

Research into TDV has been steadily growing for the past decade, as more scholars and practitioners who work with adolescents understand that there are key differences that distinguish TDV from adult IPV. Some of the major distinctions include indications that TDV is more often reciprocal than adult IPV (Mulford & Giordano, 2008; Repucci et al., 2013), with boys and girls reporting similar rates of mutual aggression (Giordano, 2007). Because most teens in romantic relationships are not cohabiting or co-parenting, there is less potential for certain forms of abusive behavior common in adult relationships, such as financial abuse and child maltreatment. However, the National Survey of Teen Relationships and Intimate Violence found that conflict over lending money was frequently part of a pattern of controlling behavior in abusive teen relationships (Copp et al., 2016). Evidence also suggests that adolescents think about dating and dating violence very differently than do adults about their relationships (National Institute of Justice [NIJ], 2016). Part of this is due to the adolescent brain— a still-developing organ with implications for decision-making, impulse control, and problem-solving skills that may affect behavior (American Academy of Child & Adolescent Psychiatry [AACAP], 2016). Adolescents are also less experienced with life and dating relationships than adults; they may hold idealized notions of romantic love which could lead to maladaptive coping strategies such as physical or emotional abuse if the relationship ended (NIJ, 2016).

Teens tend to be more influenced by their peers in dating and relationships than adults. Developmentally, teens are in a stage during which they frequently look to their peer networks to meet needs of emotional intimacy, companionship, and nurturance (Wekerle & Wolfe, 1999). The quality of teens' friendships and the public nature of most adolescent relationships (e.g., interacting with each other in group settings or places where there is little privacy, such as school, extracurricular activities, movie theaters, and so forth) mean that peers may exert a lot of influence around dating, sex, and potentially the acceptability of violence in a relationship (Murugan et al., 2019). Indeed, one sample of adolescent males revealed that some participants indicated that if a girlfriend hit them in front of their friends, some would hit her back to save face (Fredland et al., 2005). However, peers may also exert a positive influence on adolescents in dating relationships if that peer network is prosocial (e.g., not supportive of dating aggression) (Garrido & Taussig, 2013). Peers may also offer emotional support following a soured relationship and potentially steer TDV survivors to formal helping mechanisms (Murugan et al., 2019).

Adolescents and Gun Violence

Research into adolescents' use of firearms has been growing over the past 20 years in the wake of high-profile school shootings, from Columbine High School in Littleton, Colorado in 1999 to Marjory Stoneman Douglas High School in Parkland, Florida in 2018. Guns are the second leading cause of death among individuals age 17 and under in the U.S. (Centers for Disease Control & Prevention [CDC], 2017). Since 2013, fatal firearm injuries among this population have been increasing—45% of which are due to homicides (CDC, 2016), and among 14- to 17-year-olds, firearm mortality is now higher than motor vehicle related mortality (Cunningham et al., 2019). The burden of teen gun violence is borne most heavily by Black males, among whom homicide is the leading cause of death (CDC, 2016). One study, which examined 5 years' worth of pediatric trauma data from a large hospital system in Tennessee, found that Black males ages 15–19 years old were significantly more likely to die from firearm injuries due to assault than other racial groups, at 76.9% versus 44.6% (Bachier-Rodriguez & Freeman, 2017). Another large, retrospective cohort study found that Black and Latinx youth were the most likely of all racial/ethnic groups to present to hospitals with firearm injuries from assaults (Tseng et al., 2018). The same study concluded that firearm-related injuries among hospitalized youth are associated with state-level legislation: states with lenient gun laws saw higher rates of all types of firearm-related injuries, including assaults, suicides, and accidents (Tseng et al., 2018).

Teen Dating Violence and Guns

While the literature on the prevalence of gun-related TDV appears relatively scant compared to that of gun-related IPV among adults, there are notable exceptions. Adhia and colleagues' multistate study of 2188 11- to 18-year-old homicide victims reported that 150 were killed by an intimate partner—135 of whom were female, and 90 of whom were killed by a firearm (specifically, a handgun) (Adhia et al., 2019). Similarly, a population-based study in North Carolina found that of 37 homicides among girls aged 11–18 in which a police interview took place, 78% ($n = 29$) were killed by an intimate partner, with a firearm again being the lethal weapon in the majority of these cases (Coyne-Beasley et al., 2003). In both studies, the perpetrator was usually older than the adolescent victim, and the most common reasons for the homicides were a broken or desired relationship and subsequent retaliation (Adhia et al., 2019; Coyne-Beasley et al., 2003). These lethal examples, coupled with adolescents' already-elevated risks of engaging in or being victimized by violence, emphasize the need for an examination of the state of the literature around the intersection of these two public health crises across each level of potential intervention (e.g. micro-mezzo-macro approach; see Fig. 1).

Methods

There are no review protocols registered with PRISMA on the topic of gun-related TDV. The parameters of our search included peer-reviewed research or review articles published in English in 1999–2019 which reported on studies conducted in the U.S. We searched eight academic databases (title, abstract, and keyword): Academic Search Complete, CINAHL, Criminal Justice Abstracts, Medline, PsycARTICLES, PsycINFO, Science Direct, and Scopus, with the following

terms: *teen dating violence* or *adolescent dating violence* or *teen dating victimization* or *adolescent dating victimization* or *teen dating abuse* or *adolescent dating abuse* or *teen intimate partner violence* or *adolescent intimate partner violence* and *guns* or *firearms* or *handguns* or *shooting*. In addition, we used the ancestry approach to locate articles of interest by examining the bibliographies of relevant articles. Our search took place September through December 2019.

Results

The initial search returned 25 unique results, which we sorted into categories based on the level (micro, mezzo, or macro) of the risk and protective factors described within the article. After a close read of each article for content explicitly mentioning gun-related TDV, gun carrying/access and TDV, only 16 articles met our search parameters and of these only micro and mezzo levels of the social ecology were described. There were no studies addressing gun-related TDV at the macro level that met our search criteria. Table 1 summarizes these results.

Risk and Protective Factors for Gun-Related TDV at the Micro Level

The micro level consists of individual, interpersonal interactions (e.g. peer-to-peer or relationship), and the immediate family environment, which constituted the majority of published studies returned. We located 12 studies that focused on individual factors and 1 study that discussed interpersonal factors. However, we found numerous studies of bullying (e.g., Espelage et al., 2014; Nansel et al., 2003; Niolon et al., 2015) and youth delinquency (e.g., Lizotte et al., 2000; Schreck et al., 2004; Wilkinson et al., 2009), both of which have been linked to TDV.

Fig. 1 Micro-, mezzo-, and macro- levels of the social ecology

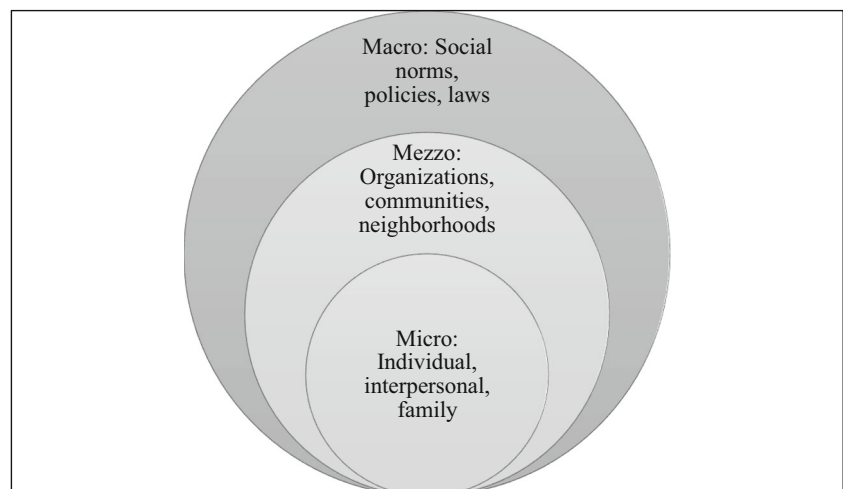


Table 1 Results of database search for research on gun-related teen dating violence

Level of social ecology	Author(s) and year of publication	Title	Sample/sample size	Findings relevant to guns/firearms and TDV
Micro (individual, peer/interpersonal, and family)	Howard & Wang (2005)	Psychosocial correlates of U.S. adolescents who report a history of forced sex abuse	2001 National Youth Risk Behavior Survey (N = 13,601)	Gun carrying and physical TDV associated with lifetime sexual assault among boys
	Bearinger et al. (2005)	Violence perpetration among urban American Indian youth: Can protection offset risk?	Urban Indian Youth Health Survey (N = 569)	Substance use associated with higher odds of shooting another person
	Howard et al. (2005)	Psychosocial correlates of dating violence victimization among Latino youth	N = 446 Latino youth from suburban Washington, DC	Gun carrying, fighting, and suicidal ideation associated with TDV
	Howard et al. (2008)	Psychosocial factors associated with reports of physical dating violence victimization among U.S. adolescent males	2005 National Youth Risk Behavior Survey (N = 13,601)	Subjects who reported physical TDV victimization were more likely to carry a gun to school and engage in fights
	Windle & Mrug (2009)	Cross-gender violence perpetration and victimization among early adolescents and associations with attitudes toward dating conflict	Birmingham Youth Study (N = 601)	Moderate-to-high levels of TDV, though few incidences of gun violence; higher levels of TDV perpetration and more hostile dating attitudes among girls
	Yan et al. (2010)	Psychosocial correlates of physical dating violence victimization among Latino early adolescents	N = 322 Latino youth aged 11–13 from suburban Washington, DC	Gun carrying, alcohol consumption, and suicidal thoughts associated with physical TDV victimization among males
	Duke et al. (2011)	Examining youth hopelessness as an independent risk correlate for adolescent delinquency and violence	2007 Minnesota Student Survey (N = 136,549)	Moderate-to-high feelings of hopelessness associated with gun carrying but not TDV
	Kann et al. (2011)	Sexual identity, sex of sexual contacts, and health risk behaviors among students in grades 9–12: Youth risk behavior surveillance, selected sites, United States 2001–2009	2001–2009 Youth Risk Behavior Surveillance System in 7 states (Connecticut, Delaware, Maine, Massachusetts, Rhode Island, Vermont, Wisconsin)	Lesbian, gay, and bisexual students reported higher median prevalence of gun carrying and dating violence than heterosexual students
	Howard et al. (2012)	10-year trends in physical dating violence victimization among U.S. adolescent males	1999–2009 National Youth Risk Behavior Survey (N = 7949)	A pattern of gun carrying and cocaine use emerged for boys victimized by physical TDV
	Stoddard et al. (2011)	Social connections, trajectories of hopelessness, and serious violence in impoverished urban youth	Mobile Youth Study (N = 723)	Hopelessness associated with committing a violent act (including gun violence) among males
Mezzo (school, neighborhood,	Orpinas et al. (2017)	Low and increasing trajectories of perpetration of physical dating violence: 7-year associations with suicidal ideation, weapons, and substance use	Healthy Teens Longitudinal Study (N = 588)	Physical TDV associated with greater likelihood of weapon carrying, threatening others with a weapon, substance use, and suicidal thoughts and attempts over time
	Adhia et al. (2019)	Intimate partner homicide of adolescents	National Violent Death Reporting System (N = 2188 11–18year-olds)	Broken or desired relationship cited as precipitating factor in homicides of teen girls (N = 135)
	Sigel et al. (2019)	Increased violence involvement and other behavioral and mental health factors among youth with firearm access	N = 1100 youth aged 10–17 in the urban Mountain West region	20% of youth had relatively easy firearm access; firearm access associated with TDV victimization
	Reed et al. (2011)	Male perpetration of teen dating violence: Associations with neighborhood violence involvement,	N = 275 males aged 14–20 recruited from urban community centers	Neighborhood violence and perceptions of violence (including shooting in the

Table 1 (continued)

Level of social ecology	Author(s) and year of publication	Title	Sample/sample size	Findings relevant to guns/firearms and TDV
community, organizational)	Vivolo-Kantor et al. (2016)	gender attitudes, and perceived peer and neighborhood norms Associations of teen dating victimization with school violence and bullying among U.S. high school students	2013 Youth Risk Behavior Surveillance	neighborhood) associated with TDV perpetration Students who reported physical and sexual TDV were more likely to carry a weapon to school than those who did not report TDV
	Knopov et al. (2019a)	The role of racial residential segregation in Black-White disparities in firearm homicide at the state level in the United States, 1991–2015	Web-based Injury Statistics Query Reporting System in 32 states, 1991–2015, where > 10 firearm homicides of Blacks occurred in each year	Racially segregated neighborhoods associated with higher levels of firearm homicide of Black youth/young adults

Individual Factors In terms of individual factors, the bulk of studies mentioned general delinquency, as well as firearm access or carrying as part of a constellation of shared risk factors for TDV. Only seven studies directly measured firearm violence, and usually this variable was included as part of a broader measure that included other weapon use (e.g., knives, clubs, or blunt objects). However, some patterns emerged regarding gun carrying as both a correlate of TDV and a risk factor for TDV perpetration and victimization- although results varied by sex, race/ethnicity, and region or location studied. For example, Howard & Wang (2005) used the 2001 National Youth Risk Behavior Survey to examine history of sexual assault among 13,601 ninth through twelfth graders. Among the 5.1% of males who reported such a history, there was a significant association between lifetime history of sexual assault and both gun carrying (Odds Ratio [OR] = 1.8) and physical dating violence (OR = 4.3) with (Howard & Wang 2005). No such relationship was observed for females, and the authors did not examine gun carrying and physical TDV directly (Howard & Wang 2005). In a separate analysis of the same data, boys who had been victimized by physical TDV were more likely to carry a gun to school and to engage in physical fights with others (Howard et al., 2008). Gun carrying, along with fighting and suicidal thoughts, were significantly associated with greater odds of TDV in a sample of 446 Latinx youth from suburban Washington, D.C. (Howard et al., 2005); however, these results were more mixed when boys and girls were examined separately. Only gun carrying and suicidal thoughts were associated with TDV among males, whereas only fighting was associated with TDV among females (Howard et al., 2005). In another study drawing from the same dataset restricted to youth ages 11–13 year-olds, gun carrying, alcohol consumption, and suicidal thoughts continued to be associated with TDV among boys but not girls (Yan et al., 2010). Thus, there appear to be significant gender effects in this area of research that merit continued exploration. Gun carrying was included in multivariate models assessing risk for physical TDV among males in the National Youth Risk Behavior Survey, but was not a significant independent risk factor – although the authors noted a pattern of gun carrying and substance use among those victimized by physical TDV (Howard et al., 2012).

In addition to important gender considerations, sexual orientation appears to play a role in the risk for certain health behaviors that have been linked to violence. In a report to the CDC using the 2001–2009 Youth Risk Behavior Surveillance System (YRBSS) in seven states, adolescents who reported sexual contact with same-sex peers or being bisexual were significantly more likely to engage in seven out of ten health risk categories studied, including “risk factors that promote violence” such as carrying a gun (3.8% heterosexual, 12.1% gay or lesbian, 8.4% bisexual, and 10.4% among students unsure of their sexual orientation) (Kann et al., 2011).

Dating violence was also more prevalent among gay, lesbian, and bisexual students compared with those identifying as heterosexual. Among heterosexual students, the median prevalence of TDV was 10.2%, compared to 27.5% among gay or lesbian students and 23.3% among bisexual students (Kann et al., 2011).

Psychosocial risk factors most often studied in conjunction with guns and TDV were substance use and suicidal thoughts or behaviors, as well as a related construct—hopelessness. Substance use was the strongest risk factor for violence perpetration, defined as shooting and/or stabbing someone, among 569 youth enrolled in grades 3 through 12 in the Urban Indian Youth Health Survey (Bearinger et al., 2005). Among 136,549 teenage respondents from the 2007 Minnesota Student Survey, moderate-to-high levels of hopelessness were independently associated with carrying a weapon (including a gun) on school property, delinquent behavior, and self-harm behaviors, though the relationship between hopelessness and TDV was not statistically significant (Duke et al., 2011). Hopelessness was also associated with committing a violent act with a weapon (including a gun) among males in the Mobile Youth Study, a longitudinal study of 723 Black youth in an impoverished urban neighborhood (Stoddard et al., 2011). In the Birmingham Youth Study of 601 adolescents residing in U.S. south, researchers found relatively high levels of mild and moderate TDV victimization and perpetration, such as pushing (range: 26.3–55%) and throwing things at the other person (range: 18.9–32.5%) (Windle & Mrug, 2009). Four of the participants reported ever having assaulted or having been assaulted with a gun by an intimate partner (Windle & Mrug, 2009).

Access to firearms has been consistently related to TDV in a number of studies dating from the mid-1980s (Glass et al., 2003), prompting the American Academy of Pediatrics to issue clinical recommendations to screen adolescents for access to guns at home, a friend or neighbor's house, or in the community (Spivak, 1999) and, more recently, dating violence (Committee on Injury, Violence and Poison Prevention, 2009). A study of 1100 racially and ethnically diverse youth aged 10–17 reported that 20% of teens were found to have potential firearm access (i.e. knowing where and how to get a gun), and asked about TDV perpetration and victimization among other risk behaviors (Sigel et al., 2019). The authors found that approximately 1.5% of the sample had perpetrated TDV and 3% reported TDV victimization; however, only TDV victimization was significantly associated with any of the firearm access and carrying variables, namely “easy to get firearm” (6.3%), and “knows where to get firearm” (4.5%) (Sigel et al., 2019).

Risk factors for TPV and gun violence also tend to compound. In the Healthy Teens Longitudinal Study, a cohort study of 588 randomly selected adolescents followed from grades 6–12 (Orpinas et al., 2017), adolescents' risk behaviors

tended to cluster together as early as sixth grade and kept increasing over time. Risk behaviors among students in the “increasing” physical dating violence trajectory included higher levels of substance use and suicidal ideation and attempts as well as greater likelihood of carrying a weapon and of having threatened someone else with a weapon (Orpinas et al., 2017).

At the interpersonal level, individuals who have witnessed violence in other relationships may be more likely to accept relationships that include violence as a central component, particularly when no models of non-violent relationships are present. Specifically, the lack of ability to terminate relationships, combined with lower impulse control typical of many adolescents and access to a gun, are critical considerations for TDV prevention (Noonan & Charles, 2009). In their examination of intimate partner homicides, Adhia et al. (2019) found that a precipitating factor in resulting adolescent homicides was often a broken or a desired relationship. Although gun use against a partner is increased during adult relationship termination and in the presence of witnesses (Sorenson, 2017). However, there are no existing models for the termination of relationships in efforts to address TDV that connect these skills to gun access and lethality.

Family Family continues to exert a key influence over the lives of adolescents. The majority of youth involved in both TDV (Davis et al., 2019) and gun violence (Rajan et al., 2019) have been exposed to adverse childhood experiences (ACEs) such as child maltreatment, parental substance use, parental mental illness, and witnessing parental domestic violence. Our search did not locate any studies that included measures of family environment on gun carrying and TDV, or parental gun ownership and gun-involved TDV specifically. However, a large cross-sectional survey of 1100 youth and 730 parents in a predominantly Latinx and Black community reported associations between parental gun ownership and offspring physical aggression toward peers (Sigel et al., 2019). Access to a firearm in the home is one of the most consistent predictors of adolescent gun carrying (Xuan & Hemenway, 2015), adolescent suicide (Choi et al., 2017; Knopov et al., 2019), and firearm-related injuries among adolescents (Carter et al., 2013).

Risk and Protective Factors for Gun-Related TDV at the Mezzo Level

The mezzo level consists of the community or neighborhood environment in which individuals live, work, attend school, and interact with others in organizational or institutional settings.

Schools Students who experienced physical and sexual TDV were more likely to carry a weapon at school and to have been

threatened with a weapon on school property than those do denied experiencing TDV (Vivolo-Kantor et al., 2016). However, school-based surveys of youth gun violence are limited in that they do not include youth who have dropped out or do not attend school, which is the population likely most at risk for both gun violence and TDV.

Neighborhoods Concentrated neighborhood disadvantages may include higher rates of crime and violence, a lack of supportive entities such as those who will intervene with TDV, as well as social norms that support aggression. These factors have been found to contribute to higher mortality rates among Black women in those communities (Knopov et al., 2019). Racial segregation has been positively associated with Black firearm homicide, even after controlling for White and Black economic deprivation (Knopov et al., 2019). Neighborhoods with a high level of gang activity, including gun violence and shooting, have been tied to perpetration of TDV among a community sample of urban adolescent males (Reed et al., 2011). Although witnessing regular community violence has also been shown to place youth at risk for bullying (Hong & Espelage, 2012) and sexual violence perpetration (Basile et al., 2013), we could not find any studies other than those aforementioned which specifically linked neighborhood factors to gun-related TDV. Additional studies citing low social cohesion and social isolation (Pinchevsky & Wright, 2012; Sampson et al., 2002; Tjaden & Thoennes, 2000), lack of economic opportunities (Wilson, 2011), and even proximity to liquor stores (Parker et al., 2017) each discussed associations with youth violence and delinquency behaviors more broadly, with no mention of gun-related TDV.

Risk and Protective Factors for Gun-Related TDV at the Macro Level

At the macro level we include studies that examine social norms, laws, and the broader policy environment regulating U.S. society. Our search for gun-related TDV did not return any studies that specifically examined this issue from a broader societal perspective, so in this section we offer a discussion of factors that have examined or describe factors that have been shown, separately, to contribute to gun violence and TDV. We choose to include work that examined race/ethnicity and gender in this section due to their broader sociocultural implications and the institutionalization of racial and gender discrimination at the macro level.

Racial and Gender Discrimination As previously noted, numerous studies have found that youth of color are disproportionately affected by TDV and gun-related violence in general (Tseng et al., 2018). Black and Latina teens report high rates of dating violence and sexual coercion than Whites

(Freudenberg et al., 1999), and several studies have revealed that Black female adolescents have the highest victimization of TDV across all demographic groups (Alleyne-Green et al., 2012; Holt & Espelage, 2005). As one example, a study of 142 Black and Latinx students from a Bronx high school observed that 40% reported racial and gender discrimination and nearly all (93%) experienced TDV and those who reported racial and gender discrimination were 2.5 times more likely also to report TDV (Roberts et al., 2018). To further complicate matters, being a young female of color may heighten the risks and negative outcomes of TDV, as many young Black women may not wish to involve the police or authority figures due to legitimate fears of how their abuser (especially if he is a Black male) may be treated by law enforcement or the criminal justice system (Roberts et al., 2018; Sokoloff & Dupont, 2005). Similarly, studies on adult IPV have confirmed that minority female IPV survivors often elide official channels of “help” such as the police or battered women’s shelters due to societal stereotypes of their identities (Sokoloff & Dupont, 2005) as well as the disproportionately harsh response of the American criminal justice system on young males of color (Fix et al. 2017). Moreover, adolescents from racial/ethnic minority groups who are also LGBT, non-binary, or gender non-conforming may have the greatest risk for experiencing TDV (Whitton et al. 2019). Whitton and colleagues’ study of nearly 250 racially and ethnically diverse LGBT youth revealed that odds of physical abuse victimization were 2.5 times higher and sexual abuse 3.4 times higher among transgender versus cisgender youth, and these risks increased further for racial-ethnic minority youth (Whitton et al. 2019).

Gender Role Socialization Youth of all genders are often affected by role expectations which may require males to demonstrate attitudes of strength, toughness, and dominance (Reidy et al., 2015; Sanchez et al., 2017). Research on traditional (patriarchal) role attitudes further suggests that boys who hold these types of beliefs are often emotionally disengaged and claim sexual prerogative in their relationships with girls (Eaton & Rose, 2011; Reyes et al. 2016). Anxiety and subsequent distress over masculinity or not appearing masculine enough may induce violent behavior towards dating partners by adolescent males who feel the need to prove themselves to their peer group (Haglund et al. 2019). Boys who experienced psychological distress about being perceived as “sub-masculine” were more likely to perpetrate acts of sexual violence as a means of demonstrating their masculinity to others, prompting the authors to conclude that reducing masculine role socialization distress should be included in all TDV primary prevention efforts (Reidy et al., 2015). Traditional gender role attitudes among adolescent males were also associated with increased risk of TDV perpetration nearly a year and a half later (Reyes et al. 2016).

Among adolescent girls, gender is often simply provided as a risk factor for TDV victimization (Holt & Espelage, 2005) as well as gun-related TDV (Adhia et al., 2019), despite multiple studies of TDV that demonstrate high levels of physical and psychological abuse perpetration by girls (Copp & Johnson, 2015; Niolon et al., 2015). We could locate only one study that examined gender role socialization among adolescent females. Here, girls who were perceived as less feminine reported more trauma symptoms and psychosocial maladjustment than girls with low feminine discrepancy stress (Reidy et al., 2018); however, this study did not include TDV outcomes. Although multiple studies have examined gender role attitudes and gun-related IPV among adults (e.g., Campbell et al., 2007), only a few have examined adolescents' attitudes toward guns and violence in general, with mixed results. A small, exploratory study of adolescent males in Georgia found no association between attitudes towards guns and acceptability of violence based on gender stereotypes (Dukes, 2007). Meanwhile, a survey of high school students' attitudes toward guns observed significant differences by gender, with females endorsing more restrictive firearm policies than males (Vittes et al., 2003). Additional work is needed to disentangle the complicated relations between gender roles and TDV, including violence that includes a gun, perpetration and victimization.

Gun Laws As discussed previously, retrospective studies of gun-related IPV and intimate partner homicide have almost universally agreed that the presence of a firearm in the home increases the risk of gun-related injury or mortality substantially (Choi et al., 2017; Knopov et al., 2019; Xuan & Hemenway, 2015). Legislation and policy amendments have been offered as tools to address the issue of the availability of guns; but what has shown some promise in reducing gun violence within relationships with IPV may have limited utility for teen dating relationships. For instance, initiatives for safe household storage of firearms may have promise for the reduction of deaths related to suicide or unintentional injury (Monuteaux et al., 2019) but this effort may not offer advantages for the intentional use of firearms within teen dating relationships, as this outcome was not examined in the aforementioned study. Overall, gun control policies have demonstrated inconsistent effectiveness across states and among certain populations for gun violence in general. The most consistently effective gun control policy is the use of child access prevention (CAP) laws- that is, holding adult gun owners criminally liable for unsafe gun storage that children can access (Rosenberg, 2019). Yet even CAP laws are not routinely associated with reduced mortality or firearm injury. While strong CAP laws were related to reductions in self-inflicted and unintentional firearm injuries among children (Hamilton et al., 2018), another study

found that only Florida and California had significantly reduced gun homicides because of CAP laws (Heburn et al., 2006).

Existing gun laws that prohibit the purchase or possession of guns by IPV perpetrators may not capture adolescents who engage in IPV as they are less likely to be reported for their dating violence. Further, background checks may be associated with fewer firearm homicides and suicides overall (Sen & Panjamapirom, 2012), but such restrictions completely miss adolescents, who cannot legally purchase firearms. Efforts such as the Extreme Risk Protection Order, which temporarily removes guns from those at risk of violence toward themselves or others (Swanson et al., 2019), may be beneficial for adults possessing a firearm but would need additional requirements for adult gun owners in which the adolescent family member was identified as at-risk. The policy with the most potential for reducing gun-related IPV/TDV appears to be firearm restraining orders- that is, a restraining order that also requires the abuser to relinquish his/her gun. Policy evaluations of states where abusers are not only barred from gun ownership but must hand over their guns have observed between 10% and 14% reductions in intimate partner homicide (Diez et al., 2017; Zeoli et al., 2018). It is not known whether TDV homicides were included in these data. Further complicating the matter is the fact that most adolescents in dating relationships are not married or cohabitating, which complicates public health surveillance of gun access in the home. Sorenson and Spear (2018) have already noted the “boyfriend loophole”; in other words, the exclusion of non-married or non-cohabiting individuals in some states' definitions of IPV and who is eligible for IPV-related gun restrictions may be missing a large segment of the population at risk for gun-related IPV (p. 107), including adolescents experiencing TDV. This observation signals the urgent need to specifically include this population in gun violence surveillance and legislative efforts to address gun-related IPV/TDV.

Discussion

Despite the high prevalence of TDV and youth gun violence in the U.S., as yet there are few published studies that specifically examine gun-related TDV. This is an unfortunate oversight that could have serious long-lasting social consequences if not addressed by researchers, policymakers, and practitioners working with youth. Youth-focused interventions are particularly relevant- we must intervene early to prevent gun-related TDV with developmentally and culturally appropriate messages to reduce perpetration and victimization into adulthood, when the risk factors for IPV and gun violence are more established, chronic, and likely more challenging to mitigate. However, our search did uncover promising research and policy efforts, focusing on multiple levels of the micro-mezzo-

macro approach, where research and practice could join purposes. We present key areas where conceptual and practical domains from these two currently disparate fields overlap and may set an agenda for future scholarly inquiry into gun-related TDV.

Areas for Future Inquiry at the Micro Level

Individual Clinical guidelines from the healthcare field have long recommended physician screening for firearm access (Spivak, 1999), dating violence (Committee on Injury, Violence and Poison Prevention, 2009), and known correlates and risk factors for both of the above – child maltreatment (Flaherty et al., 2010), bullying (Committee on Injury, Violence and Poison Prevention, 2009), and suicide (Shain, 2007). Another realm researchers and practitioners could consider for delivering or reinforcing prevention messages about gun-related TDV is technology. Mobile apps such as myPlan are a feasible and acceptable method to educate teens about TDV, connect them with local resources, and assist them with the creation of a safety plan (Debnam & Kumodzi, 2019). The use of smartphone apps, videos, text messages, and websites to deliver content about firearm safety and gun violence prevention was also a key suggestion from Ngo et al.' 2019 youth gun violence review. Harnessing technology to supplement and reinforce messages about healthy relationships, conflict resolution, communication skills, and additional resources is thus a potentially low-cost way to engage large numbers of youth at risk, tailored to geographic area.

Family Among families who own or possess firearms, strategies that hold parents accountable for safe storage and gun handling practices may help to decrease adolescents' access to guns. Providing gun safes has shown promise, across geographical and cultural contexts, for increasing household safety and decreasing unintentional injuries from firearms (Grossman et al., 2012). Voluntary gun buyback programs may also decrease the number of firearms in a community (Hazeltine et al., 2019). Parental buy-in for imparting messages of gun safety and violence prevention would be key for such strategies to sustain effectiveness over time. Programs that involve parents in delivering content to their children, such as the Moms and Teens for Safe Dates program, could be one way to incorporate general anti-violence messages, lethality assessments, and safety planning among youth at risk for TDV and gun violence (Foshee et al. 2015a). Because most teens live at home with at least one of their parents, strategies that focus only on individual risk reduction and outcomes may be less effective without parental/familial involvement. Research on family violence general may also consider exploring links between sibling aggression and TDV to elucidate whether leverage points for earlier family interventions may exist.

Peers The overlap between TDV and bullying has been discussed in several studies, and many school-based universal prevention strategies seek to address both kinds of relational aggression in their approach. Schools or organizations serving youth may consider further refining existing curricula to include gun violence prevention messages, conflict resolution strategies between peers, and bystander training (e.g. Shifting Boundaries, Green Dot). Leveraging existing peer networks and groups within a school setting may increase the efficacy of certain programs- for example, within a universal prevention approach that includes bystander training for all students, peer groups known to be at risk for perpetrating TDV, such as high school athletes, may receive additional content on positive masculinity and healthy relationships from their coaches (e.g., Coaching Boys Into Men). Additionally, given that positive effects of anti-bullying programs may not be sustained in high school, tailoring relational aggression messaging and interventions by age, grade, and/or developmental stage may be necessary. For example, conflict resolution and communication techniques could build on messages learned during anti-bullying modules to include content around intimate relationships as students enter high school and begin dating. It may also be important to increase the dosage of interventions in later developmental years.

Areas for Future Inquiry at the Mezzo Level

Schools Cascardi et al. (2018) have pointed out that the crackdown on peer aggression in schools (broadly defined to include TDV) may require school districts to adopt parallel curricula and programming to address bullying and TDV (Cascardi et al., 2018). In their systematic review of state and federal legislation of both bullying and TDV, anti-bullying laws tended to be more detailed than those for TDV, which were more narrowly focused on TDV and healthy relationship behaviors as opposed to all forms of aggression (Cascardi et al., 2018). The authors concluded that while conceptually and empirically bullying and TDV overlap, existing laws for reducing both do not always reflect their shared risk factors. It is possible that the legal separation may further the fragmented and incomplete nature of many school-based intervention efforts.

Additional work on theorizing and empirically testing concepts related to developmental stage and associated tasks of adolescence may strengthen the applicability of programs and policies directed at curbing the risk behaviors associated with gun-related TDV. Preventing access to firearms and gun carrying seems like a logical first step. Spano (2012) has argued that a key leverage point for intervention among low-income African-American youth may be to thwart first-time gun carrying, pointing out that the decision to carry a gun for the first time is frequently associated with exposure to

community violence and represents a critical inflection point for the development of future gun violence. Although exposure to community violence lies outside the scope of this review, exposure to violence is associated with TDV, as noted above. Surveys of crime victimization suggest that victimization often precedes gun carrying (Wamser-Nanney et al., 2019). Incorporating trauma-informed approaches that take into account community violence exposure, police brutality, and concentrated neighborhood disadvantage as part of a school or community-based effort to address multiple forms of violence may be indicated for certain populations.

Areas for Future Inquiry at the Macro Level

Policies At the policy level, local and state restrictions on gun access such as CAP laws or the provision of gun storage lockers to households (regardless of whether the head of the household legally owns a gun) may also be effective ways of decreasing adolescent firearm access. Such strategies have proven effective in a wide variety of policy contexts, states, and geographical areas (e.g., rural and urban) (Rosenberg, 2019). Work is still needed to assess how these policies may help prevent gun-involved TDV.

Social Norms Cultural specificity may be a key component missing from both TDV and gun violence prevention efforts. Most studies of TDV do not take into account subgroups of students at the highest risk, such as those from socioeconomically deprived backgrounds, minority teens, and LGBTQ populations (Cascardi et al., 2018). Indeed, others have pointed out that the majority of TDV research has focused on White and African-American samples; few studies to date have examined TDV prevention efforts and outcomes among Latinx (Malhotra et al., 2015), Asian-American (Lau et al., 2018), or immigrant/refugee youth (Ravi et al., 2018). Similarly, LGBT and non-binary and/or gender nonconforming youth are nearly absent from studies of gun violence and TDV despite being at substantially elevated risk for victimization (Whitton et al., 2019). It is likely that rural communities with majority White, Evangelical residents and high levels of gun ownership (Stroope & Tom, 2017) may respond to different messaging about gun-related TDV than densely populated urban areas with more diverse racial and ethnic subpopulations. Interventions that attempt to deconstruct patriarchal notions of gender roles and stereotypes may not translate as effectively to sexual minority youth who experience same-sex relationship abuse. Yet many evidence-based programs and interventions focused on TDV especially have positioned themselves as universal prevention strategies that can be generalized to multicultural communities- if indeed they mention “culture” at all.

Conclusion

The adolescent years mark a time of unique vulnerability yet opportunity to address TDV and gun violence. Although researchers have paid increasing attention to both issues in recent years, we still know far too little about how to assess and prevent lethality in teen dating relationships- including youth access to and reasons for carrying firearms across geographical and cultural contexts. A first step for researchers is to begin building a literature on the shared etiology, risk factors, and longitudinal outcomes of TDV, youth gun violence, and gun-related TDV. As this review has shown, to date there are few studies that have specifically measured homicide as an outcome of gun-related TDV nor examined gun homicide rates within the context of TDV. Recognizing the mutual benefit of incorporating anti-gun violence messages into existing TDV efforts across all levels of possible intervention is paramount to addressing and preventing not only TDV but intimate homicide among youth. Crafting and delivering these interventions early in adolescence may have long-lasting benefits for the health and safety of individuals, families, and communities.

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