NIH Public Access
Author Manuscript
J Child Psychol Psychiatry. Author manuscript; available in PMC 2012 October 31.

Published in final edited form as:
J Child Psychol Psychiatry. 2009 April ; 50(4): 441–450. doi:10.1111/j.1469-7610.2008.02004.x.

Prevalence and mental health correlates of witnessed parental and community violence in a national sample of adolescents

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Abstract

Background—Although research suggests that witnessed violence is linked to adverse mental health outcomes among adolescents, little is known about its prevalence or its significance in predicting psychiatric symptoms beyond the contribution of co-occurring risk factors. The purpose of this study was to identify the national prevalence of witnessed parental and community violence and to examine these life stressors as independent risk factors for posttraumatic stress disorder (PTSD) and major depressive episode (MDE) among adolescents. A secondary aim was to determine which characteristics of witnessed violence were associated with mental health outcomes.

Method—Participants were 3,614 adolescents recruited from a 2005 US national household probability sample who completed structured telephone interviews assessing witnessed violence and *Diagnostic and Statistical Manual of Mental Disorders-IV (DSM-IV)* criteria for PTSD and MDE.

Results—National prevalence of witnessed parental violence and witnessed community violence was estimated to be 9% and 38%, respectively. Both forms of witnessed violence predicted PTSD and MDE beyond variance accounted for by age, gender, race/ethnicity, income, and other traumatic event history. Perceptions of threat, repeated violence exposure, location of the violence, and relationship to the victim were associated with psychiatric diagnoses.

Conclusions—Findings suggest that witnessed violence represents a significant public health burden with implications for psychological assessment and prevention efforts.

Keywords

Witnessed violence; domestic violence; community violence; prevalence; post-traumatic stress disorder; depression; adolescence

A significant proportion of children and adolescents in the US have witnessed some form of serious violence in their families or communities. A national study conducted in 1995 with a representative sample of adolescents found that the prevalence of witnessed violence was 39.4% (incidents ranged from mugging to shooting; Kilpatrick, Saunders, and Smith,

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Conflict of interest statement: No conflicts declared.

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2003b). Estimates of witnessed community violence are considerably higher in urban and/or minority samples, as well as when definitions for witnessed violence are broadened to include verbal threats and hearing about violence (e.g., Campbell & Schwarz, 1996; Jaycox et al., 2002; Hurt et al., 2001; Richters & Martinez, 1993). While limited data are available regarding witnessed domestic violence specifically, prior studies have reported prevalence estimates ranging from 20% to 37% (Hurt et al., 2001; McCloskey & Walker, 2000; O'Brien, John, Margolin, & Erel, 1994; Silvern et al., 1995). The high prevalence of children's exposure to violence is particularly noteworthy in light of research that has established a link between witnessed domestic or community violence and multiple psychiatric problems, including internalizing problems, externalizing problems, social problems, and posttraumatic stress disorder (PTSD; see reviews by Kitzmann, Gaylord, Holt, & Kenny, 2003; Osofsky, 2003; Buka, Stichick, Birdthistle, and Earls, 2001; Edleson, 1999a). Up to this point, the literatures examining witnessed domestic and community violence exposure have generally evolved separately, and few studies have examined these stressful life events in the context of a single study.

Witnessed violence frequently takes place in the context of other factors that contribute to adverse outcomes among children. Exposure to community and domestic violence has been associated with poverty and scarcity of resources (Cicchetti & Lynch, 1993; Fantuzzo et al., 1997). Community violence and interparental conflict also tend to co-occur with each other (Osofsky, Wewers, Hann, and Fick, 1993; Richters & Martinez, 1993) and with other traumatic events. Studies have demonstrated a significant overlap between witnessed violence and child maltreatment, including both physical and sexual abuse (see Appel & Holden, 1998; Edleson, 1999b; Lynch & Cicchetti, 1998).

Despite evidence for the co-occurrence of domestic violence, community violence, and child maltreatment, limited research has attempted to examine the unique contributions of different types of violence exposure in the prediction of mental health problems. Furthermore, few studies have examined the effects of witnessed violence while controlling for co-occurring risk factors such as poverty and histories of direct victimization. A developmental psychopathology perspective emphasizes the importance of considering the influence of multiple events on children's development (Rutter & Sroufe, 2000). Not only must multiple events be taken into account in understanding the complexity of children's responses to stressful events, but these experiences must also be understood within the context of interacting systems (e.g., family, community, society). Therefore, to gain an informed understanding of children's developmental trajectories, it is necessary to assess multiple events within both the immediate environment (e.g., direct victimization within the family) and the broader context (e.g., witnessed community violence).

Because direct physical and sexual victimization in childhood has been repeatedly linked to negative mental health outcomes (Kendall-Tackett, Williams, and Finkelhor, 1993; Kolko, 1992; Margolin & Gordis, 2000), it is possible that the reported effects of witnessed violence are best accounted for by its overlap with direct victimization. However, limited research has examined whether witnessed violence makes independent contributions to subsequent adaptation. Findings from the few studies that exist have been mixed (Kilpatrick et al., 2003a; Lynch & Cicchetti, 1998; Maker, Kemm-elmeier, and Peterson, 1998; O'Keefe, 1995; Silvern et al., 1995). Methodological differences may account for the inconsistent pattern of findings (e.g., different definitions of witnessed violence, use of homogenous samples). Further studies using representative samples, behaviorally specific measures, and comprehensive assessments of victimization are necessary before conclusions can be drawn about the unique effects of witnessed violence.

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The current study

The aims of this study were threefold: a) to describe the prevalence of various forms of witnessed violence; b) to examine witnessed community and domestic violence in relation to adolescents' psychiatric symptomatology, independent of the contribution of direct victimization and other key risk factors; and c) to determine which characteristics of witnessed violence contribute to psychiatric outcomes. We hypothesized that witnessed community and parental violence would each be associated with increased risk of PTSD and depression, beyond variance accounted for by demographics and direct traumatic stress history. Although some studies have failed to demonstrate a relation between witnessed violence and mental health, it was expected that the use of stricter definitions of witnessed violence would allow for the detection of these relations.

Method

Participants

The full sample included a 2005 US national household probability sample as well as an oversample of urban-dwelling youth aged 12 to 17 years. Sampling methodology and data collection procedures were similar to the previous National Survey of Adolescents (see Kilpatrick et al., 2000). During recruitment, 6,694 households were contacted that resulted in both a completed parent interview and identification of at least one eligible adolescent. Of these, 1,268 (18.9%) parents refused adolescent participation. In 188 additional cases (2.8%), the parent consented but the adolescent refused to be interviewed; and in another 119 (1.8%) cases the adolescent interview was initiated but not completed. Finally, in 1,505 cases (22.5%) parent consent was given and a parent interview was completed but the identified eligible adolescent was either unreachable after 20 callbacks or was not pursued further due to having fulfilled the sample quota of 3,600 participants. The remaining 3,614 cases resulted in completed parent and adolescent interviews. This included 2,459 adolescents in the national cross-section and an oversample of 1,155 urban-dwelling adolescents. All variables for the current study, except poverty, were derived from the adolescent interview.

Completers were compared to non-completers on demographic variables, including child age, child gender, household size, geographic stratum, race/ethnicity, parent marital status, parent employment status, household income, parent gender, and parent education. Adolescent completers were older (M = 14.6 years, SD = 1.7) than non-completers (M = 14.5 years, SD = 1.7; t (6691) = 3.65, $p < .01$). Completers were more likely than non-completers to report lower household income (χ^2 = 16.36 (2, N = 6031), $p < .01$). Among completers, the parent completing the parent interview was more likely to be female (72%), in comparison to non-completers (67%; χ^2 = 19.10 (1, N = 6694), $p < .01$). Child gender was also more likely to be female among completers (49.9%), in comparison to non-completers (47.2%; χ^2 = 4.69 (1, N = 6680), $p < .05$). Finally, completers were more likely to report living in a large city or town in comparison to non-completers (χ^2 = 11.77 (4, N = 6594), $p < .05$). No other comparisons were significant. Further, comparisons that were significant were very small (e.g., average age difference between completers and non-completers was only 0.1 years), and probably not clinically meaningful.

Measures

The measures used in this study (the 2005 National Survey of Adolescents-Replication study) were based on an interview module used for the original 1995 National Survey of Adolescents (NSA). One of the key goals of this NICHD-funded study was to examine 10-year trends of violence exposure and mental health outcomes in US adolescents. For this

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reason, we chose to use the same measures used in our 1995 NSA conducted 10 years earlier.

We attempted to strengthen our approach by using different time frames for key independent variables (i.e., witnessed parental and community violence) and dependent measures (i.e., MDE and PTSD) such that the temporal direction between these variables is consistent with theoretical models identifying mental health problems as a potential consequence of violence exposure. That is, the time frame for dependent variables focuses on 'current' (i.e., past 6 months) functioning whereas we used a lifetime definition for violence exposure.

Risk- and protective-factor variables—Race and ethnicity were assessed using standard questions employed by the U.S. Bureau of the Census (1988). Four dummy-coded variables referred to each of the following groups: African American, non-Hispanic (n = 464, 12.8%); Asian American, non-Hispanic (n = 90, 2.5%); and Hispanic (n = 373, 10.3%). Caucasian, non-His-panic participants (n = 2488, 68.8%) served as the reference group. Participants chose from one of ten categories to reflect their estimated household income. These categories were collapsed to create a dichotomous variable to represent poverty (household income less than $15,000; n = 281, 7.8%). Age at time of assessment was also dichotomized ('0' = 12–14 years; '1' = 15–17 years). Gender was coded '0' for male (n = 1851, 51.2%) and '1' for female (n = 1763, 48.8%).

Violence exposure was assessed using a module based on the Trauma Assessment for Adults, which has been widely used to screen community and medical populations for trauma history in face-to-face and telephone interviews (Resnick 1996; Kilpatrick et al., 2000). Validity of this measure has been supported through high correspondence with other structured assessments of traumatic events, as well as consistency with stressor events noted in archival records of mental health patients (Saunders, Kilpatrick, Resnick, and Tidwell, 1989). Behaviorally specific questions regarding four types of events (serious accident, physical assault, sexual assault, natural disaster) were used to construct a dichotomous variable representing any prior trauma history. Physical assault was defined as: (a) experiencing an attack with or without a weapon in which the participant was badly injured or beaten up; and/or (b) being threatened with a dangerous weapon (i.e., gun or knife). Sexual assault was defined as: (a) forced anal, vaginal, and/or oral sex; (b) forced digital penetration and/or foreign object penetration; and/or (c) forced touching of genitals.

Witnessed parental violence—Witnessed violence was assessed using a modified version of the violence assessment module from the original National Survey of Adolescents (Kilpatrick & Saunders, 1999). Items were selected to emphasize severe forms of witnessed violence. Parental violence was measured with five questions that followed a prefatory statement: 'Sometimes parents get angry and argue or even fight with each other. I would like to ask you some questions about times you might have seen or heard your parents argue, fight, or even get violent with each other'. The 5 items were:

1. Have you ever seen or heard one of your parents punch or hit the other one with their fist or kick them real hard?
2. Have you ever seen or heard one of your parents choke the other?
3. Have you ever seen or heard one of your parents beat up the other so that they were hurt pretty bad?
4. Have you ever seen or heard one of your parents hit the other with an object like a bat, pan, or lamp and they were hurt pretty bad?

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5. Have you ever seen or heard one of your parents threaten the other with a gun, knife, or other weapon?

A series of follow-up questions about violence characteristics were asked when at least one of these items was endorsed. Due to low base rates of the different forms of witnessed parental violence, the parental violence items were collapsed into one dichotomous variable. Cronbach's alpha for the 5 items in the current study was .72.

Witnessed community violence—Community violence was assessed using six questions. The module was introduced as follows: 'Some young people tell us they have seen one person violently attack, beat up, or even kill another person. The people involved in the attack may have been strangers, or people you knew like friends, acquaintances, neighbors, or relatives. We want to know about attacks against other people you actually saw at school, in your neighborhood, or in the community, not just heard about. We do not want to know about events that may have happened to you personally, just incidents you saw. And, we mean seeing violent attacks in *real life*, not on TV, in movies, or on video games.' The 6 questions were:

1. Have you ever seen someone actually shoot someone else with a gun?
2. Have you ever seen someone actually cut or stab someone else with a knife?
3. Have you ever seen someone being molested, sexually assaulted, or raped?
4. Have you ever seen someone being mugged or robbed?
5. Have you ever seen someone threaten someone else with a knife, a gun, or some other weapon?
6. Have you ever seen someone beaten up, punched, or kicked such that they were hurt badly enough that they needed medical attention?

Cronbach's alpha for the 6 items in the current study was .66.

Characteristics of witnessed violence—Violence characteristics were based on the first violent incident that the adolescent witnessed. For community violence, characteristics included: multiple incidents witnessed (yes/no), age of onset (age groups coded '0' for 0–10 and '1' for 11–17 years), age at last incident (coded '0' for 0–10 and '1' for 11–17 years), location of the incident (home, school, or neighborhood, with 'somewhere else' coded as the reference group), relationship to the victim (known individual [relative or known non-relative] vs. stranger), and fear of death or injury during the incident. For parental violence, characteristics included: multiple incidents witnessed, age of onset, age at last incident, fear of death during the incident, and fear of injury during the incident, all of which were coded consistent with community violence variables. Parental violence characteristics also included perpetrator gender, fear that a parent would be physically hurt, fear that a parent would be killed, and the occurrence of physical injury of a parent.

PTSD—Current (i.e., past six months) PTSD was assessed using the PTSD module of the NSA survey (Kilpatrick, Resnick, Saunders, & Best, 1989a), a structured diagnostic interview that assessed each *DSM-IV* symptom with a yes/no response. Research on this measure has provided support for concurrent validity and several forms of reliability (e.g., temporal stability, internal consistency, diagnostic reliability; Kilpatrick et al., 2003a; Resnick et al., 1993; Ruggiero et al., 2006). The measure was validated in a field trial against the PTSD module of the Structured Clinical Interview for the *DSM* administered by mental health professionals. The inter-rater kappa coefficient was 0.85 for the diagnosis of

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PTSD in the field trial, and comparisons between the NWS-PTSD module and SCID yielded a kappa coefficient of .77 (Kilpatrick et al., 1998).

Major depressive episode (MDE)—*MDE* was assessed using the Depression Module of the NSA survey, a structured interview that targets MDE criteria using a yes/no response format for each DSM-IV symptom for the prior 6 months. Participants were classified as experiencing MDE in the current study if they met past 6 month DSM-IV criteria. Psychometric data support the internal consistency (Kilpatrick et al., 2003a) and convergent validity (Boscarino et al., 2004) of the Depression module. Boscarino et al. compared the depression module against the depression scale of the Brief Symptom Inventory-18, yielding a sensitivity of 73% and specificity of 87% in detection of MDE as classified by our instrument. Past-year MDE identified by this measure is also associated with lower reported work quality (Boscarino et al., 2004) and mental health treatment seeking after controlling key variables and assault history variables (Lewis et al., 2005).

Procedure

Participants were selected using a multi-stage, stratified, random-digit dial procedure within each region of the country; the full sample included a national household probability sample as well as an oversample of urban-dwelling adolescents. The structured telephone interview took about 43 minutes to complete. The interview was administered – in English or Spanish, based on respondents' preference – by trained interviewers employed by Shulman, Ronca, and Bucuvalas, Inc., a survey research firm with significant experience managing survey studies. A computer-assisted telephone interview system aided this process by prompting interviewers with each question consecutively on a computer screen, and supervisors conducted random checks of data entry accuracy and interviewers' adherence to assessment procedures. Parental and adolescent informed consent was obtained prior to the interview and participants received $10 for completion. The Institutional Review Board at the Medical University of South Carolina approved all study procedures.

Statistical analysis

Descriptive analyses yielded population prevalence estimates for witnessed violence. Two logistic regression analyses then examined relations between witnessed violence and PTSD and MDE. Demographic variables and direct victimization were entered separately as independent variables. Follow-up analyses examined predictors of PTSD and depression among those who witnessed violence. Variables used in these analyses included variables that were statistically significant in the primary analyses, as well as characteristics specific to those who witnessed violence.

Because adolescents were over-sampled in urban areas, cases were weighted to maximize representativeness of the sample to the US adolescent population. A weight was created to restore the urban cases back to their true proportion of the urban/suburban/rural variable, based on US census estimates. Next, weights were created to adjust the weight of each case based on age and gender. This procedure resulted in weighted sample distributions that closely approximated US census estimates. Analyses with weighted data did not differ significantly from analyses with unweighted data, and all results are reported using weighted data. Analyses were conducted using SUDAAN statistical software (Research Triangle Institute, 2005).

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Results

Prevalence of witnessed violence in the US population of adolescents

Prevalence estimates of different types of witnessed violence are reported in Table 1. Witnessed community violence was reported by 37.8% of adolescents, which equates to 9.6 million adolescents aged 12–17 in the US population (based on 2005 US Census estimates). Witnessed community violence was more prevalent than witnessed parental violence, which was endorsed by 8.9% of adolescents, equating to 2.3 million adolescents aged 12–17 in the US population. The most frequent form of witnessed community violence involved seeing someone beaten up to the point of requiring medical attention (about 1 in 4 adolescents). The most frequent form of witnessed parental violence involved seeing a parent punch, hit, or kick another parent (about 1 in 16 adolescents).

Witnessed violence in relation to mental health outcomes

Results from the first set of logistic regression analyses indicated that witnessed parental violence (OR = 2.0 vs. none), community violence-sexual assault (OR = 2.6 vs. none), community violence-threat with a weapon (OR = 2.2 vs. none), and community violence-beating (OR = 1.7 vs. none) significantly predicted PTSD status (see Table 2). Demographic variables significantly associated with PTSD were age 15–18 at time of assessment (OR = 1.9 vs. age 12–14), female gender (OR = 2.5 vs. male), and prior traumatic event history (OR = 2.9 vs. none). With respect to MDE, witnessed violence variables associated with increased risk were: parental violence (OR = 1.7 vs. none), community violence-sexual assault (OR = 2.1 vs. none), community violence-threat with a weapon (OR = 1.7 vs. none), and community violence-beating (OR = 2.0 vs. none; see Table 2). Demographic variables significantly associated with MDE were age 15–18 at time of assessment (OR = 1.8), female gender (OR = 3.9 vs. male), and traumatic event history (OR = 2.2 vs. none). The prevalence of PTSD among adolescents who witnessed parental violence was 7.1% and the prevalence of MDE was 14.6%. The prevalence of PTSD among adolescents who witnessed community violence was 7.1% and the prevalence of MDE was 10.9% (see Table 3 for breakdown by gender and type of violence).

Characteristics of witnessed violence in relation to mental health outcomes

We examined violence characteristics among two subgroups of adolescents: a) those who witnessed parental violence and b) those who witnessed community violence. Among adolescents who witnessed parental violence, those who were afraid that they would be injured during the incident were 5.8 times more likely to meet PTSD criteria and 7.3 times more likely to meet MDE criteria, in comparison to those who did not fear injury. Those whose parents were injured during the violent episode unexpectedly were *less* likely to meet criteria for MDE (OR = .2 vs. none; see Table 4). Post-hoc analyses were conducted to help interpret these findings, with the assumption that parent injury might be associated with increased likelihood of reporting the incident to law enforcement, which would potentially introduce protective action. These analyses revealed that witnessed parental violence incidents that resulted in parent injury were reported to the authorities in 60.6% of cases (43 of 71); whereas incidents that did *not* result in parent injury were reported to the authorities in only 25.8% of cases (47 of 182). When incident reporting was included in the original regression model, parent injury no longer significantly predicted MDE (OR = .38, $p = .11$). However, incident reporting was also not a significant predictor of MDE in this model (OR = .52, $p = .20$).

Among adolescents who witnessed community violence, witnessing multiple incidents of community violence (OR = 2.7 vs. one incident), and witnessing incidents where the victim was a known non-relative (OR = 2.0 vs. stranger) were associated with a greater likelihood

of PTSD. Adolescents who witnessed multiple incidents of violence (OR = 2.2 vs. one incident), violence that occurred at home (OR = 3.1 vs. somewhere else), or incidents where they were afraid that they might be injured or killed (OR = 1.9 vs. no fear of injury or death) were more likely to meet criteria for MDE (see Table 5).

Discussion

This study had three goals: (a) to document the prevalence of witnessed parental and community violence in the US population of adolescents, (b) to examine whether parental and community violence were associated with increased risk for PTSD and MDE after controlling for other key demographic and traumatic stress variables known to be associated with these outcomes, and (c) to explore specific characteristics of witnessed violence that might be associated with PTSD and MDE among subgroups reporting witnessed violence.

Findings indicated that 2 in 5 US adolescents have witnessed violence, with community violence being the most common form. At the population level, this equates to 10.4 million out of a total of 25.4 million adolescents aged 12–17 years according to 2005 US Census data. The prevalence of witnessed community violence (38%) was consistent with a national study conducted 10 years earlier, which employed similar definitions (Kilpatrick et al., 2003b). Our prevalence estimate for witnessed parental violence (9%) was considerably lower than estimates yielded by many other studies in the literature, likely because the current methodology included a national probability sample (rather than at-risk sample) as well as an operational definition that focused on more severe forms of parental violence.

Hypotheses regarding the relation between witnessed violence and mental health outcomes were generally supported. Notably, current (i.e., past six months) diagnoses of PTSD and MDE were significantly associated with witnessed parental violence and most forms of witnessed community violence beyond variance accounted for by key demographic factors and direct victimization experiences. Contrary to expectations, witnessed shooting or stabbing was not a significant predictor of mental health outcomes. Post-hoc exploration of the data indicated that the prevalence of PTSD and MDE among those who endorsed witnessed shooting or stabbing was similar to that of adolescents who endorsed other types of witnessed violence. The fact that adolescents who had witnessed shooting or stabbing were likely to experience other types of witnessed violence may have resulted in shared variance that diluted predictive power. Further, witnessed shooting and stabbing is a low-base rate incident, limiting its predictive utility. In addition, many adolescents who were *not* exposed to witnessed shooting or stabbing endorsed other forms of violence associated with poor mental health outcomes, thereby decreasing the ability of witnessed shooting or stabbing to predict risk for mental health problems.

This is one of the first studies using a large national sample to identify significant associations between witnessed violence and risk for psychiatric disorders using multivariable models that controlled for other key risk factors. These findings build on prior studies that have documented a unique effect of witnessed violence, after accounting for physical and/or sexual assault (O'Keefe, 1995; Silvern et al., 1995). The difference between the current study and studies that failed to find these effects may be related to methodological differences (e.g., use of national probability sample vs. convenience samples, comprehensive measurement of prior traumatic event history, behaviorally specific measurement of witnessed violence, and focus on more severe forms of violence in the current study).

Consistent with hypotheses, several measures of perceived threat and injury were related to mental health outcomes. The higher risk of mental health problems among those who

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witnessed violence at home or involving a known individual may be due to closer proximity and emotional engagement with the event. The relations between perceived threat, severity, chronic violence exposure, and mental health are consistent with prior research involving other types of traumatic events (Kilpatrick et al., 1989b; Resnick et al., 1993; Wirtz & Harrell, 1987). Other characteristics of witnessed violence were of less importance in the final models, and one – parent injury – was counterintuitively associated with lower probability of MDE. Post-hoc exploration of this finding revealed that parent injury shared variance with a number of other characteristics, and that it was also associated with greater likelihood of reporting the incident to authorities. When we accounted for incident reporting to law enforcement in the analyses, the predictive power of parent injury decreased, suggesting that reporting could play a role in the relation between parent injury and MDE. However, the lack of significant relation between incident reporting and MDE suggests that other mediators or moderators should be explored. For example, it is possible that the involvement of law enforcement in many of these cases affected future risk of violence occurring in the home via separation of perpetrator from the home or threat of legal consequences in response to future incidents. This, in turn, may have affected risk for MDE in some adolescents. Our data collection instruments could not test these relations directly. Future research is needed to explore these possible interpretations, which may have important implications for the role of law enforcement in domestic violence incidents where a child is present in the home.

Limitations

Several limitations warrant mention. The current study was cross-sectional in design and based on retrospective self-report measures. Therefore, there is a potential for recall bias, and intervening events may have influenced study variables since the violence incident(s) occurred. Because the study was correlational in nature, causal linkages between variables cannot be established. Due to the focus on severe forms of witnessed violence, findings may not generalize to adolescents who have witnessed incidents of lesser severity (e.g., verbal threats). Since the analyses were based on the first incident reported, the most severe incidents experienced by participants may not have been captured, thereby limiting interpretations of the findings. Because study completers differed from non-completers, findings may be slightly skewed towards representing adolescents who were older, female, from lower income families, and located in large cities. However, differences between completers and non-completers were small and therefore unlikely to have significantly affected results. Finally, the use of telephone interviews precluded the assessment of institutionalized adolescents as well as those living in households without telephones. While these individuals represent a small proportion of US adolescents, this segment of the population may experience greater exposure to violence. Therefore, findings may not fully represent violence-exposed adolescents or generalize to institutionalized populations.

Significance and implications

Findings from the current study suggest that witnessed violence represents a significant public health burden and a risk factor[1] for MDE and PTSD in adolescents. These findings imply that it is important to incorporate experiences of witnessed violence, particularly serious forms of violence with threat of injury or death, into multivariable models of PTSD and MDE. Further, these findings suggest that clinicians should include witnessed parental and community violence experiences in the context of victimization screening procedures.

[1]We define ‘risk factor’ here as a correlate preceding an outcome, to be distinguished from a ‘causal risk factor,’ which requires demonstration that change in the risk factor results in change in the outcome (Kraemer, Stice, Kazdin, Offord, & Kupfer, 2001).

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Consistent with the developmental psychopathology perspective, the current study also highlights the utility of assessing multiple risk factors at the individual, family, and community levels (Lynch & Cicchetti, 1998; Rutter & Sroufe, 2000). Such an assessment can better elucidate the complex dynamics of interdependent factors that shape adolescents' mental health trajectories. In addition, this research can inform policies and practices geared towards reducing psychiatric morbidity. For example, findings identifying significant relations between witnessed violence and mental health add further support to the importance of public health attempts to reduce risk for violence exposure. They also strengthen the argument for integrating mental health interventions with other types of service provision that are likely to be activated during severe incidents of witnessed violence, such as law enforcement and medical services. Thus far, models involving police–mental health partnership and multisystemic therapy (intervention in multiple systems in which the child is embedded) have shown promise in improving access to care and reducing mental health problems among children exposed to violence (Drotar et al., 2003; Henggeler, Schoenwald, Borduin, Rowland, and Cunningham, 1998).

The strengths of this study involved the inclusion of a nationally representative sample and behaviorally specific measures of multiple forms of witnessed violence. Additional research is needed using longitudinal designs to assess causal relations between witnessed violence and mental health. Further studies are also necessary to better understand the role that contextual and protective factors, such as family environment and social support, play in adolescents' adaptation to violence. Similarly, research that explores the mechanisms linking violence exposure to mental health problems would be informative. While prior literature has concentrated primarily on direct exposure to violence, the current findings imply that research should better attend to the role of witnessed violence in determining adolescents' risk for psychiatric disorders.

Acknowledgments

This research was supported by National Institute of Child Health and Human Development Grant 1R01 HD046830-01 (principal investigator: Dean G. Kilpatrick). Views in this article do not necessarily represent those of the agency supporting this research.

Abbreviations

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Key points

- Little is known about the prevalence of witnessed violence or its contribution to mental health outcomes beyond co-occurring risk factors.
- In this nationally representative sample of adolescents, the prevalence of witnessed parental violence was 9% and the prevalence of witnessed community violence was 38%.
- Both witnessed parental and community violence predicted PTSD and MDE beyond demographic characteristics and co-occurring risk factors.
- Perceptions of threat, repeated violence exposure, location of the violence, and relationship to the victim were significantly associated with psychiatric diagnoses.
- These findings indicate that witnessed violence represents a significant public health burden. They also highlight the need to assess for multiple risk factors among violence-exposed adolescents and the importance of bolstering violence prevention efforts.

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Table 1

Prevalence of witnessed community and parental violence

	Percent of sample	US population estimate (million)[1]
Witnessed any community violence	37.8	9.6
Witnessed someone shoot someone else with a gun	3.2	.8
Witnessed someone cut or stab someone else with a knife	8.9	2.3
Witnessed someone molested or sexually assaulted	2.1	.5
Witnessed someone being mugged or robbed	9.3	2.4
Witnessed someone threaten someone else with a knife, gun, or other weapon	19.0	4.8
Witnessed someone beaten up, requiring medical attention	28.4	7.2
Witnessed any parental violence	8.9	2.3
Witnessed parents punch, hit, or kick	6.0	1.5
Witnessed parents choke	2.2	.6
Witnessed parents beat up	2.4	.6
Witnessed a parent hit the other with an object	1.6	.4
Witnessed a parent threaten the other with a weapon	1.6	.4
Witnessed any violence	41.1	10.4
Witnessed both community and parental violence	5.6	1.4

[1] Based on US Census population estimates for 2005, ages 12–17, $N = 25,375,214$.

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Table 2

Results of logistic regression analyses relating witnessed parental and community violence to posttraumatic stress disorder and major depressive episode

	Posttraumatic stress disorder[a]			Major depressive episode[b]		
Predictor	**Wald**	**OR**	**CI (95%)**	**Wald**	**OR**	**CI (95%)**
Age group	7.60	1.89**	1.20–2.96	8.54	1.76**	1.20–2.57
Gender	17.45	2.51***	1.63–3.87	42.77	3.93***	2.61–5.92
African American	.18	.89	.51–1.53	1.53	.73	.44–1.20
Native American	.74	.53	.12–2.25	1.44	1.66	.72–3.81
Asian American	.24	.74	.22–2.47	.90	.56	.17–1.84
Hispanic	2.81	.59	.32–1.09	2.23	.66	.39–1.14
Poverty (<$15K)	.20	1.17	.59–2.32	2.84	.61	.34–1.08
Trauma history	13.49	2.90***	1.64–5.13	12.29	2.23***	1.42–3.48
Witnessed parental violence	7.61	2.02**	1.22–3.32	5.84	1.73*	1.11–2.71
Witnessed community violence: shooting or stabbing	.74	1.26	.74–2.15	3.48	1.56	.98–2.48
Witnessed community violence: sexual assault	5.10	2.60*	1.13–5.95	3.97	2.11*	1.01–4.42
Witnessed community violence: mugging	.43	1.22	.68–2.18	4.91	1.69*	1.06–2.70
Witnessed community violence: threat with a weapon	10.17	2.24**	1.36–3.69	5.57	1.66*	1.09–2.54
Witnessed community violence: beating	4.26	1.70*	1.03–2.80	12.13	2.01***	1.36–2.97

[a] $n = 3075$;

[b] $n = 3084$;

* $p < .05$;

** $p < .01$;

*** $p < .001$.

Note. OR = odds ratio. CI = confidence interval. Reference groups for predictor variables were as follows: age group: 12–14 years (vs. 15–17); gender: male; racial/ethnic groups: Caucasian; poverty: income >$15,000; trauma history: no history of direct victimization; witnessed violence categories: no exposure to each type of witnessed violence.

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Table 3

Prevalence of posttraumatic stress disorder and major depressive episode among adolescents who witnessed parental and community violence

	Posttraumatic stress disorder		Major depressive episode	
Type of violence witnessed	**Male**	**Female**	**Male**	**Female**
Witnessed parental violence	6.9%	13.2%	8.3%	19.1%
Witnessed community violence: shooting or stabbing	9.8%	14.5%	9.4%	31.4%
Witnessed community violence: sexual assault	12.5%	17.0%	12.0%	26.0%
Witnessed community violence: mugging	7.7%	13.4%	8.7%	27.2%
Witnessed community violence: threat with a weapon	7.2%	12.8%	7.4%	22.5%
Witnessed community violence: beating	5.2%	10.4%	6.7%	18.2%

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Table 4

Results of logistic regression analyses relating parental violence characteristics to posttraumatic stress disorder and major depressive episode among adolescents who witnessed parental violence

	Posttraumatic stress disorder[a]			Major depressive episode[b]		
Predictor	**Wald**	**OR**	**CI (95%)**	**Wald**	**OR**	**CI (95%)**
Age group	2.31	2.17	.80–5.88	7.29	3.53**	1.41–8.83
Gender	2.02	.43	.14–1.37	1.69	.55	.23–1.35
Trauma history	.15	1.26	.39–4.07	.27	.74	.24–2.26
Multiple incidents of witnessed parental violence	2.53	2.62	.80–8.61	.92	1.62	.60–4.37
Age group at first incident	.02	1.11	.24–5.16	1.60	2.28	.63–8.20
Age group at last incident	.15	1.30	.34–4.90	.02	1.08	.35–3.26
Perpetrator gender	.04	1.14	.34–3.84	.02	1.08	.36–3.22
Feared injury or death	5.72	5.84*	1.37–24.82	10.49	8.07**	2.28–28.55
Feared parent injury	3.35	6.71	.87–51.68	.33	1.46	.40–5.30
Feared parent death	.09	.81	.20–3.29	.01	.93	.29–3.04
Parent injury	1.40	.45	.12–1.69	7.08	.23**	.77–.68

[a] $n = 243$;

[b] $n = 247$;

* $p < .05$;

** $p < .01$.

Note. OR = odds ratio. CI = confidence interval. Reference groups for predictor variables were as follows: age group: 12–14 years (vs. 15–17); gender: male; trauma history: no history of direct victimization; multiple incidents of witnessed violence: one incident; age group at first or last incident: 12–14 years (vs. 15–17); perpetrator gender: female; feared injury/death: 'no.'

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Table 5

Results of logistic regression analyses relating community violence characteristics to posttraumatic stress disorder and major depressive episode among adolescents who witnessed community violence

	Posttraumatic stress disorder[a]			Major depressive episode[b]		
Predictor	**Wald**	**OR**	**CI (95%)**	**Wald**	**OR**	**CI (95%)**
Age group	1.56	1.39	.83–2.34	3.66	1.54	.99–2.39
Gender	15.10	2.58***	1.60–4.16	37.16	3.80***	2.47–5.84
Trauma history	11.02	4.83***	1.90–12.23	8.60	2.66**	1.38–5.11
Multiple incidents of witnessed community violence	16.93	2.71***	1.69–4.36	13.57	2.18***	1.44–3.31
Age group at first incident	1.17	1.55	.70–3.41	.13	.90	.50–1.60
Age group at last incident	.02	.92	.29–2.89	1.30	1.77	.66–4.70
Violence occurred at home	1.98	2.61	.68–9.91	5.32	3.07*	1.18–7.97
Violence occurred at school	1.78	1.63	.79–3.33	1.62	.67	.37–1.24
Violence occurred in neighborhood	.04	1.07	.53–2.16	.75	.77	.44–1.38
Victim was a relative	.01	.93	.19–4.49	.20	.79	.29–2.17
Victim was a known non-relative	6.72	1.96**	1.18–3.25	1.67	1.34	.86–2.11
Perpetrator was a relative	.00	.96	.32–2.92	.46	1.36	.56–3.35
Perpetrator was a known non-relative	2.51	.66	.39–1.10	1.95	1.36	.88–2.10
Feared death or injury	1.83	1.49	.83–2.66	7.98	1.90**	1.22–2.98

[a] $n = 1380$;

[b] $n = 1389$;

* $p < .05$;

** $p < .01$;

*** $p < .001$.

Note. OR = odds ratio. CI = confidence interval. Reference groups for predictor variables were as follows: age group: 12–14 years (vs. 15–17); gender: male; trauma history: no history of direct victimization; multiple incidents of witnessed violence: one incident; age group at first or last incident: 12–14 years (vs. 15–17); violence location: 'somewhere else'; relationship to victim/perpetrator: stranger; feared injury/death: 'no.'