

Violence Exposure, Psychological Trauma, and Suicide Risk in a Community Sample of Dangerously Violent Adolescents

By: Daniel J. Flannery, PhD., Mark I. Singer, PhD., And [Kelly Wester, M.A.](#)

Flannery, D. J., Singer, M. I., & Wester, K. L. (2001). Violence exposure, psychological trauma, and suicide risk in a community sample of dangerously violent adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry*, 40(4), 435-442.

Made available courtesy of Lippincott, Williams, and Wilkins: <http://www.lww.com/>

*****Reprinted with permission. No further reproduction is authorized without written permission from Lippincott, Williams, and Wilkins. This version of the document is not the version of record. Figures and/or pictures may be missing from this format of the document.*****

Abstract:

Objective: To examine violence exposure, violent behaviors, psychological trauma, and suicide risk in a community sample of dangerously violent adolescents by comparison with a matched community sample of nonviolent adolescents.

Method: Anonymous self-report questionnaires were administered in the 1992–1993 school year to students in grades 9 through 12, in six public high schools located in Ohio and Colorado ($N = 3,735$). From this sample, 484 adolescents (349 males, 135 females) who reported attacking someone with a knife or shooting at someone within the past year (i.e., dangerously violent adolescents) were drawn. Four hundred eighty-four controls were also selected and matched on gender, age in years, ethnicity, area of residence, and family structure.

Results: Dangerously violent adolescents reported higher levels of exposure to violence and victimization than did matched controls. Dangerously violent females were more likely to score in the clinical range of depression, anxiety, posttraumatic stress, anger, and dissociation than were control females and violent males; they also had significantly higher levels of suicide potential.

Conclusions: Students who have been known to commit violent acts should be adequately assessed for violence exposure and symptoms of psychological trauma, with special attention given to the suicide potential of violent females.

Key Words: violent adolescents, psychological trauma, violence exposure, suicide potential.

Article:

Despite a recent downturn in the national rates of homicide perpetration (Snyder and Sickmund, 1999), adolescents continue to account for a significant percentage of criminal and violent offending (Dahlberg, 1998; Kann et al., 1996; Office of Juvenile Justice and Delinquency Prevention, 1998; Rachuba et al., 1995) and are also frequently the victims of violence (Finkelhor and Dziuba-Leatherman, 1994; Singer et al., 1995). Murder is the fourth leading cause of death among children younger than 14 years of age (Snyder et al., 1996). Other forms of violence have also been found to be common among school-aged children, with high self-reported victimization rates. In one study, for example, two-thirds of urban youths and 40% of suburban youths reported having been beaten up, robbed, stabbed, or shot (Campbell and Schwarz, 1996).

Studies that have examined underlying risk factors for violent behavior among adolescents have demonstrated a consistent relationship between victimization and the perpetration of violence (Rivara et al., 1995; Widom, 1989). Exposure to violence and victimization from violence have been shown to be associated with children's aggressive and violent behaviors (Acoca, 1998; Cauffman et al., 1998; Dodge et al., 1990; Flannery et al., 1998; Moses, 1999; Schwab-Stone et al., 1995; Singer et al., 1999; Song et al., 1998; Sternberg et al., 1993).

However, gender differences in the rates of exposure do tend to vary by sample. Some studies suggest that male and female adolescents are equally likely to be exposed to violence before the age of 18 (Giaconia et al., 1995), whereas other studies suggest that males are more likely to observe violence and that females are more likely to be traumatized as direct victims of violence (Cauffman et al., 1998).

Exposure to violence and victimization have been consistently linked to serious mental health problems for youths. Studies have demonstrated that adolescents who engage in aggressive, delinquent, or violent behaviors have higher levels of posttraumatic stress disorder (PTSD) and depression than less violent youths (Cauffman et al., 1998; Giaconia et al., 1995; Steiner et al., 1997). Moses (1999) examined the effects of exposure to violence in a sample of inner-city high school students and found that exposure to violence and victimization predicted hostility and depression in adolescents. Depression has also been found to be associated with the risk of aggressive behavior among elementary school children (Messer and Gross, 1994).

Aggression and violent behavior in children and adolescents have been reflected in increased rates of youthful arrest and incarceration. Between 1985 and 1994, rates of incarceration increased 67% among male juveniles and 125% among female juveniles (Dahlberg, 1998). When examining mental health issues among violent adolescents, most studies have focused on youths who are institutionalized or incarcerated for their offenses (Armistead et al., 1992; Cauffman et al., 1998; DuRant et al., 1997; Timmons-Mitchell et al., 1997). Nationally, approximately 30% of adolescent chronic offenders aged 12 to 18 years in the juvenile prison system have a mental disorder (U.S. Department of Justice, 1997).

Recently, Timmons-Mitchell et al. (1997) examined a population of incarcerated adolescents and found that 27% of males and 84% of females exhibited significant mental health needs, with females having a greater prevalence of mental health issues such as depression and anxiety. Cauffman et al. (1998) demonstrated that the majority of incarcerated females in their sample were exposed to multiple traumas such as witnessing violence and being physically or sexually victimized.

A few studies have compared incarcerated youths to community samples of noninstitutionalized youths. In general, incarcerated adolescents have exhibited a higher prevalence of mental health problems than youths in the general population. For example, Steiner et al. (1997) compared incarcerated juvenile delinquents to a sample of nonincarcerated, nonclinical adolescents and found that incarcerated youths had higher levels of PTSD than did adolescents in the community.

The strategy of examining mental health needs of incarcerated youths makes sense if one assumes that the most significant levels of violence perpetration and victimization are to be found among institutionalized youths. However, this strategy fails to capture the large number of youths in the community who are victims and perpetrators of violence but are not institutionalized and may not yet have come to the attention of school counselors, law enforcement, or mental health professionals. The investigation of such populations of students has important implications for mental health practitioners, as a subset of violent students may have significant mental health issues that require immediate intervention.

The current study identified a large community-based sample of dangerously violent (DV) high school students and a comparison sample of their nonviolent peers. Each group was assessed for self-reported violent behavior, exposure to violence, and symptoms of psychological stress. In this study, DV violent adolescents were defined as youths who self-reported on an anonymous survey that they had “attacked or stabbed someone else with a knife” or had “shot at or shot someone else with a real gun” in the past year. Once the sample of DV adolescents was identified, comparison students (matched case controls) were selected from the remaining pool of adolescents, who had not reported engaging in either form of violent behavior.

We expected that, compared with females, males would report higher levels of anger, exposure to violence, and violent behavior. Conversely, we expected that females would report higher levels of depression, anxiety, posttraumatic stress symptoms, and dissociation, as well as higher rates of victimization from violence at home. We also expected that, compared with matched controls, DV adolescents would report engaging more frequently in other types of violent behaviors (e.g., threatening others with physical violence; slapping, hitting, or punching others) and would have higher levels of exposure to violence (both as witnesses and victims) and psychological trauma symptoms.

METHOD

The community sample consisted of students who were in grades 9 through 12 during the 1992–1993 school year, chosen from six public schools: two Cleveland, Ohio city schools, one Cleveland area sub-urban high school, one small city high school in northeastern Ohio, and two Denver, Colorado city high schools. The schools were selected to be representative of their school districts. In the larger school districts, high schools were chosen by the superintendent as being representative of that district. In the suburban school district, there was only one high school. Students in the Cleveland and Denver city high schools resided in predominantly lower or lower-middle class neighborhoods. The small city high school was located in an economically depressed area whose residents, primarily blue-collar workers, were experiencing high rates of unemployment. Students from the suburban school resided in a small upper-middle class town.

Recruitment efforts were maximized by giving students in all class-rooms in every school the opportunity to participate. Passive consent procedures were employed. Namely, parents were notified of the survey by letter and given the opportunity to withdraw their children from the study. Less than 1% of parents in any school chose not to let their child take part.

Students were informed before the survey that their participation was completely voluntary. During administration of the survey, students were again assured verbally and in writing that their answers would be kept confidential. Classroom teachers proctored the administration of the questionnaires. Once students completed the survey, they placed the questionnaire in a separate unmarked envelope. Teachers did not see any completed surveys. Students completed individual anonymous surveys during one 45-minute class period. The questionnaire was designed to be understood at the 5th grade reading level and was pre-tested on a socioeconomically diverse sample of adolescents.

An overall sample of 3,735 students was obtained, which represented 68% of the 5,509 students in all of the schools at the time of the survey. The representativeness of our sample was tested by comparing completed questionnaires from each school with the school's overall distribution of students by age, gender, and race. Our sample is representative of each school, with a few exceptions. White students were underrepresented in the small city high school in Ohio. In one of the Denver city schools, females were overrepresented and African Americans were underrepresented. In the other Denver city school, Hispanics were underrepresented. However, the above differences between our sample and the sampling population were relatively small, all within 6%. Additional information on the total sample has been reported elsewhere (Singer et al., 1995; Song et al., 1998).

Sample Cases and Controls

The current study focused on a subsample of youths who we identified as DV and a group of matched controls. As previously stated, we considered subjects to be DV if they indicated that they had attacked or stabbed someone with a knife or shot at or shot someone with a gun within the past year. A total of 584 youths met this criterion. The remaining adolescents were then considered as potential case controls ($n = 3,140$) and were matched to DV adolescents on the basis of gender, age in years, ethnicity, area of residence (urban, suburban, or small city community), and family structure (two-parent versus single-parent). If there was more than one possible matched control student for a DV student, then the control student was randomly selected and the unselected students were returned to the control subject pool. Whenever an exact match between control and DV students was not found, the DV adolescent was not included in the final sample ($n = 100$). Of the DV adolescents for whom we could not find an exact match, 58 were not included in the final sample because they had missing information on at least one of the matching variables, usually information on family structure ($n = 51$). For the remaining 42 unmatched DV adolescents, the two most common reasons for removal were inability to match to a case control on family structure ($n = 20$) and/or area of residence ($n = 19$). There were no significant gender differences between matched DV adolescents and DV adolescents not included in the final sample. DV males not included in the final sample were significantly older (16.35 years versus 16.01 years, $F_{1,418} = 4.89, p < .05$) and had experienced more violence in the home setting ($F_{1,420} = 5.30, p < .05$) than matched DV males. There were no significant differences between matched DV females and DV females not included in the final sample.

This strategy resulted in a final sample of 484 DV and 484 matched control adolescents ($n = 349$ males and 135 females). The sample was 72% male, 45% African American, 27% Hispanic, and 20% white. Eight percent of all students described their ethnicity as “other.” Seventy-nine percent of the adolescents lived in a large city, 18% lived in a small city, and 3% lived in a suburban setting. Fifty-one percent of adolescents indicated they lived in two-parent families; the remaining 49% were from single-parent families. The sample ranged in age from 14 years (8%) to 19 years (2%); the majority of adolescents were between 15 and 18 years of age (90%).

Variables and Instrumentation

Recent Exposure to Violence. Recent exposure to violence was assessed with a 22-item scale that measures witnessing or being victimized by violence at home, at school, or in the neighborhood in the past year (Singer et al., 1995, 1999). This scale measures five specific acts of violence: threats, slapping/hitting/punching, beatings, knife attacks, and shootings. For the first three types, separate items were designed to capture the site where the violence occurred: at home, at school, or in the neighborhood. Reports on knife attacks were not site specific. Subjects were requested to report separately on violence they had experienced directly and violence they had personally witnessed. A 6-point Likert scale ranging from “never” (a score of 0) to “almost every day” (a score of 5) was used to assess the frequency of exposure to each type of violence. Principal component analyses revealed that the 22 items load on a single scale, yielding five factors with adequate internal consistency (average Cronbach $\alpha = .75$). The five factors are (1) witnessed violence in the neighborhood, (2) victimized by violence or witnessed violence at home, (3) witnessed violence at school, (4) witness or victim of a shooting or knife attack, and (5) victimized by violence at school or in the neighborhood (Singer et al., 1995). Several studies have demonstrated the validity of using child and adolescent self-reports of exposure to violence (Martinez and Richters, 1993; Pastore et al., 1996; Selner-O’Hagan et al., 1998; Singer et al., 1995, 1999; Song et al., 1998).

Trauma Symptoms. Psychological trauma symptoms were assessed with the 54-item Trauma Symptom Checklist for Children (TSC-C) Briere, 1996). The TSC-C was developed to assess sequelae of childhood trauma/abuse and was written to be understandable to children as young as 8 years of age. The TSC-C contains six subscales that assess anxiety (9 items), depression (9 items), posttraumatic stress (10 items), dissociation (10 items), anger (9 items), and sexual concerns (10 items). Each item is rated on a 4-point Likert scale that ranges from “never” (0) to “almost all the time” (3). In addition to the scale scores, which are computed by summing individual scale items, a Total Trauma Symptom score can be computed. Requests by school personnel resulted in the removal of all items related to the sexual concern subscale. Each of the individual scales demonstrated adequate internal reliability (average Cronbach $\alpha = .85$). The TSC-C has high internal reliability and concurrent validity (Briere, 1996; Singer et al., 1995).

Violent Behaviors. Violent behaviors were assessed by asking students to report how often during the past year they had engaged in each of six violent acts: threatening others with physical harm; slapping, hitting, or punching someone before the other person hit them; slapping, hitting or punching someone after they had been hit; beating up or mugging someone; attacking someone with a knife; and shooting at someone. A 6-point Likert scale that ranged from “never” (0) to “almost every day” (5) was used to assess the frequency of each type of violence. A principal component analysis on the Violent Behavior scale items showed that the items loaded on a single factor, which accounted for 51% of the variance among the items (Song et al., 1998). Each item correlated with the variable cluster (range = 0.56–0.81), and the internal consistency of the items was adequate (Cronbach $\alpha = .79$). Several studies have demonstrated the validity of using child and adolescent self-reports of violent behavior (Ellickson et al., 1997; Ellickson and McGuigan, 2000; Moffitt, 1996; Singer et al., 1995, 1999; Song et al., 1998; Valois et al., 1995).

Analysis Plan. For each of outcome of interest to us, gender differences were examined. Differences between and within groups on recent exposure to violence were examined with analysis of variance (ANOVA) and effect size analyses. Multiple logistic regressions were used to examine the relative risk of experiencing trauma symptoms and engaging in violent behavior. Finally, we examined group differences (DV versus controls) and

within-group gender differences (e.g., DV males versus DV females) in the percentage of adolescents who reported clinically significant levels of trauma symptoms.

RESULTS

In the female DV group, 25.2% ($n = 34$) reported shooting at or shooting someone at least once in the past year, 65.2% ($n = 88$) reported attacking or stabbing someone with a knife at least once, and 9.6% ($n = 13$) reported perpetrating violence with both a gun and a knife at least once. Among DV males, 48.4% ($n = 169$) reported shooting at or shooting someone at least once, 30.9% ($n = 108$) reported attacking or stabbing someone with a knife at least once, and 20.6% ($n = 72$) reported perpetrating violence with both a gun and a knife at least once. Significantly more males than females reported using a gun ($\chi^2_{1,482} = 47.36, p < .0001$) and using both a gun and a knife ($\chi^2_{1,482} = 16.71, p < .0001$). DV males and females did not significantly differ on their reports of attacking others with a knife ($\chi^2_{1,482} = 3.24, p > .05$).

Exposure to Violence

The ANOVA revealed that DV adolescents were significantly more likely to report more exposure and victimization from violence than were matched controls. Effect size differences were generally moderate to high, ranging from $d = 0.08$ for DV males reporting greater victimization at home compared with male controls to $d = 0.84$ for DV females reporting greater victimization from shootings or knife attacks compared with female controls (Table 1).

Comparisons of female and male controls revealed only one significant difference, with males being victimized more often at school or in their neighborhood than females ($F_{1,479} = 7.50, p < .01$), but the effect size was modest ($d = 0.14$).

TABLE 1
Analysis of Variance (and Effect Size Differences) for Recent Exposure to Violence

	Mean (SD)	Mean (SD)	<i>F</i>	<i>d</i>
	DV Females	DV Males		
Witness in neighborhood	5.92 (4.51)	7.08 (4.74)	5.90*	-0.05
Victimized or witness at home	6.98 (5.84)	4.05 (4.56)	34.07***	0.11
Witnessed at school	8.23 (4.23)	7.58 (4.01)	2.45	0.03
Shooting or knife attack	4.26 (2.56)	4.39 (2.74)	0.20	-0.01
Victimized at school or in neighborhood	3.15 (3.02)	4.08 (4.41)	5.06*	-0.06
	DV Females	MC Females		
Witness in neighborhood	5.92 (4.51)	3.96 (3.58)	15.58***	0.12
Victimized or witness at home	6.98 (5.84)	3.32 (3.79)	36.98***	0.17
Witnessed at school	8.23 (4.23)	5.53 (3.26)	34.02***	0.30
Shooting/knife attack	4.26 (2.56)	1.03 (1.50)	158.66***	0.84
Victimized at school or in neighborhood	3.15 (3.02)	1.30 (1.90)	36.03***	0.32
	DV Males	MC Males		
Witness in neighborhood	7.08 (4.74)	4.46 (4.06)	60.80***	0.14
Victimized or witness at home	4.05 (4.56)	2.78 (3.57)	16.78***	0.08
Witnessed at school	7.58 (4.01)	5.49 (3.77)	49.99***	0.14
Shooting/knife attack	4.39 (2.74)	1.35 (2.12)	266.21***	0.52
Victimized at school or in neighborhood	4.08 (4.41)	1.96 (2.50)	60.88***	0.19
	MC Females	MC Males		
Witness in neighborhood	3.96 (3.58)	4.46 (4.06)	1.60	-0.03
Victimized or witness at home	3.32 (3.79)	2.78 (3.57)	2.18	0.04
Witnessed at school	5.53 (3.26)	5.49 (3.77)	0.01	0.00
Shooting/knife attack	1.03 (1.50)	1.35 (2.12)	2.53	-0.10
Victimized at school or in neighborhood	1.30 (1.90)	1.96 (2.50)	7.50**	-0.14

Note: Degrees of freedom for DV females vs. DV males = (1,482); for DV females vs. MC females = (1,267); for DV males vs. MC males = (1,696); and for MC females vs. MC males (nonoffenders) = (1,482). DV = dangerously violent; MC = matched control.

* $p < .05$; ** $p < .01$; *** $p < .0001$.

DV males reported witnessing more violence in the neighborhood ($F_{1,481} = 5.90, p < .05$) and being victimized more often at school or in the neighborhood ($F_{1,478} = 5.06, p < .05$) than did DV females. In both cases the effect

sizes were low ($d = 0.05$ and 0.06 , respectively). The biggest gender difference among DV adolescents was the higher rates of witnessing or being victimized by violence at home reported by DV females ($F_{1,482} = 34.07, p < .0001, d = 0.11$).

Trauma Symptoms and Violent Behavior

Multiple logistic regressions were used to examine gender differences among DV subjects and matched controls on the relative risk of reporting clinically significant trauma symptoms and engaging in violent behaviors other than shootings and stabbings (Tables 2 and 3). To create the clinical cutoff for DV subjects and controls, the entire original sample ($N = 3,721$) was used. The mean of each trauma scale was taken for females ($n = 1,937$) and males ($n = 1,784$) separately. Scores of 2 SD above the mean or higher were used as the “clinical range” for each trauma scale. Scores in the clinical range indicate a high probability of the presence of serious psychological or behavioral difficulties related to the specific trauma symptom and suggest that a more complete evaluation of the individual’s psychosocial status is warranted.

TABLE 2
Odds Ratios (ORs) for Experiencing Clinical-Level Trauma Symptoms and Engaging in Violence for DV Versus MC Subjects

	DV Females			DV Males		
	<i>B</i>	OR	(CI)	<i>B</i>	OR	(CI)
Trauma symptoms						
Anger	1.42	4.15**	(1.81, 9.48)	1.33	3.81**	(1.79, 8.11)
Anxiety	1.84	6.33*	(1.81, 22.15)	0.49	1.64	(0.84, 3.19)
Depression	1.85	6.37**	(2.13, 19.04)	0.23	1.26	(0.69, 2.33)
Dissociation	1.67	5.36*	(1.77, 16.22)	0.89	2.44*	(1.22, 4.89)
Posttraumatic stress	1.84	6.33*	(1.81, 22.15)	0.64	1.90	(0.95, 3.81)
Violent behavior						
Beaten someone	1.19	3.31***	(1.87, 5.88)	1.38	3.98***	(2.89, 5.47)
Slapped someone <i>before</i> he/she hit you	1.56	4.79***	(2.77, 8.26)	1.40	4.05***	(2.88, 5.70)
Threatened someone	1.40	4.05***	(2.42, 6.77)	1.74	5.73***	(4.00, 8.19)

Note: Reference group is matched controls. Numbers in parentheses are 95% confidence intervals (CIs). DV = dangerously violent; MC = matched control.

* $p < .01$; ** $p < .001$; *** $p < .000$.

Compared with matched controls, DV females were significantly more likely to display clinical levels of all trauma symptoms, ranging from three times greater for anger (odds ratio [OR] = 4.15, 95% confidence interval [CI] = 1.81–9.48), to more than five times greater for depression (OR = 6.37, 95% CI = 2.13–19.04) (Table 2). DV males were nearly three times more likely than nonviolent males to evidence clinical levels of anger (OR = 3.81, 95% CI = 1.79–8.11), and were also more likely to have clinical levels of dissociation. DV males did not display more clinically significant levels of anxiety, depression, or posttraumatic stress than did controls. For all three types of violent behavior, DV subjects were two to four times more likely than controls to report engaging in the behavior.

TABLE 3
Odds Ratios (ORs) for Gender Differences in Clinical-Level Trauma Symptoms and Violent Behavior for DV Females Versus DV Males

	DV Females		
	<i>B</i>	OR	(CI)
Trauma scales			
Anger	0.956	2.59***	(1.49, 4.50)
Anxiety	0.66	1.95*	(1.01, 3.75)
Depression	0.92	2.52**	(1.36, 4.65)
Dissociation	0.63	1.87*	(1.01, 3.49)
Posttraumatic stress	0.66	1.95*	(1.01, 3.75)
Violent behavior			
Have you beaten someone?	-0.86	0.41†	(0.27, 0.63)
Hit someone <i>before</i> he/she hit you?	-0.04	0.95	(0.57, 1.59)
Have you threatened someone?	-0.73	0.48**	(0.29, 0.77)
Have you attacked someone with a knife?	0.39	1.48	(0.96, 2.27)
Have you shot at someone with a gun?	-1.42	0.23†	(0.15, 0.36)

Note: Reference group is DV males. Numbers in parentheses are 95% confidence intervals (CIs). DV = dangerously violent.
* $p < .05$; ** $p < .01$; *** $p < .001$; † $p < .000$.

Compared with DV males (Table 3), DV females were more likely to display clinically significant levels of all five trauma scales. DV females were more likely to self-report clinical levels of anger (OR = 2.59, 95% CI = 1.49–4.50) and depression (OR = 2.52, 95% CI = 1.36–4.65). With respect to Violent Behavior, DV females

were 59% less likely than DV males to report having beaten someone up, 52% less likely to report having threatened someone, and 77% less likely to report having shot at or shot someone.

There were no differences between male and female controls on likelihood of reporting clinically significant levels of trauma symptoms. However, compared with male controls, female controls were 50% less likely to have beaten someone up (OR = .50, 95% CI = .30-.84, $p < .01$).

Having observed high clinical levels of anger and depression among DV females, we became concerned about suicide risk. The TSC-C has two critical questions that assess suicide potential: “wanting to hurt myself” and “wanting to kill myself.” Combined scores of 4 or higher on these items indicate significant suicide potential. Almost one in five (18.5%) DV females scored in this range compared with 6.6% of female controls, 5.0% of DV males, and 4.3% of male controls. The ANOVA comparing DV females’ scores to scores of each other group revealed significant differences ($p < .0001$), which indicate higher suicide risk for DV females (Table 4).

DISCUSSION

In all cases, DV adolescents reported higher levels of exposure to violence and victimization than did matched controls. Thus, adolescents who engaged in shootings and/or knife attacks were witnesses and victims of high levels of violence in the home, neighborhood, and school. With regard to other violent behaviors, these DV adolescents reported reliably higher rates than did controls. Compared with controls, DV adolescents were about two to four times more likely to have hit someone before they were hit, to have beaten someone up, and to have threatened another person within the past year.

DV males were significantly more likely to exhibit clinical levels of anger, dissociation, and posttraumatic stress than were male controls. DV females were reliably more likely to demonstrate clinical levels of all trauma symptoms than female controls. Similar to the current findings, Steiner et al. (1997) found that incarcerated delinquents had higher levels of PTSD than a matched nonclinical sample of adolescents.

TABLE 4
Analysis of Variance for Self-Harming Behavior

	Mean (SD)	Mean (SD)	<i>F</i>	<i>d</i>
	<u>DV Females</u>	<u>DV Males</u>		
Want to hurt/kill myself	1.60 (2.04)	0.61 (1.30)	39.84*	0.37
	<u>DV Females</u>	<u>MC Females</u>		
Want to hurt/kill myself	1.60 (2.04)	0.68 (1.35)	18.64*	0.33
	<u>DV Males</u>	<u>MC Males</u>		
Want to hurt/kill myself	0.61 (1.30)	0.47 (1.09)	2.27	0.10
	<u>MC Females</u>	<u>MC Males</u>		
Want to hurt/kill myself	0.68 (1.35)	0.47 (1.09)	3.31	0.14

Note: DV = dangerously violent; MC = matched control.

* $p < .0001$.

In all groups, males reported higher levels of victimization rates at school or in the neighborhood than did females. Among DV adolescents, males also reported witnessing more violence in the neighborhood than did females; however, females reported higher rates of being a witness or victim of home violence than did males. These findings are consistent with data on gang-involved females who reported high levels of victimization at home (Chesney-Lind and Brown, 1999).

DV males were more likely than DV females to shoot at or shoot someone, but no similar gender differences were found in the likelihood of knife attacks. Compared with their respective female groups, both DV males and matched controls were more likely to beat someone up and more likely to threaten someone.

There were no significant differences in the relative risk of male and female controls scoring in the clinical range for any trauma symptom. However, among DV adolescents, females were more likely than males to score in the clinical range for all trauma symptoms. Other studies of incarcerated violent youths have found that females were more likely than males to exhibit high levels of PTSD and depression (Timmons-Mitchell et al., 1997).

Limitations

The current study relies solely on adolescent self-reports and does not contain collateral data such as juvenile court records. The study also provides correlational rather than causal inferences. Prospective longitudinal investigations with multiple informants (e.g., parents, and teachers) would provide more robust data on dangerously violent adolescents that could yield causal implications. The sample was composed of adolescents who were attending classes the day of the study and does not include chronically truant youths and school dropouts. Such individuals are known to have high rates of violence exposure and substance use, as well as psychological, academic, and interpersonal problems (DeKalb, 1999; Farrington, 1989, 1996; Gottfredson, 1981; Kandel et al., 1984; Robins and Robertson, 1996). Males in the DV group who were not included in the final sample were also more likely to be older and to have higher rates of exposure to violence at home than their DV peers. In light of these factors, our findings are likely to be a conservative estimate of the relationships examined in the study.

The study was also limited by the geographic scope from which the sample was drawn and thus cannot be generalized to adolescents in other communities. Nevertheless, our study has several strengths. We surveyed a large, multi-ethnic, community-based sample of adolescents from two distinctly different geographic regions of the country. Students came from various types of communities that spanned urban, suburban, and rural locations. We surveyed males and females who reported engaging in dangerously violent behavior in the past year. Because comparison groups were matched on gender, age, ethnicity, community structure, and family structure, differences in violence exposure and mental health functioning cannot be attributed to systematic differences in these factors.

Clinical Implications

DV females were three to five times more likely than control females to have scored in the clinical range of depression, anxiety, posttraumatic stress, anger, and dissociation and were two to seven times more likely to have been exposed to violence. Similarly, DV males were one to three times more likely than male controls to have scored in the clinical range for posttraumatic stress and anger, and were three to six times more likely than controls to have been a victim of or witness to violence. Such high levels of relative risk found in a nonclinical sample warrant attention. These levels of risk underscore the necessity to adequately assess students who have been known to commit violent acts for both violence exposure and symptoms of psychological trauma. Referrals for such assessment should be part of a clinical protocol designed to identify significant problems experienced by violent students and to address manifest pathology to prevent further violent behaviors.

The severe anger and depression experienced by DV females is another finding that warrants attention, as there is relatively little clinical research on violent females, especially in community samples. Compared with DV males, these female students were 159% more likely to experience clinical levels of anger and 152% more likely to experience clinical levels of depression. In addition, almost one in five DV females were at high risk for suicide, compared with significantly lower percentages in all other comparison groups. These results suggest that psychiatrists and other mental health professionals should recognize the high potential for self-harm in violent adolescent females and should appropriately assess and treat such detrimental ideation when serving this population.

REFERENCES

Acoca L (1998), *Outside/inside: the violation of American females at home, on the streets, and in the juvenile justice system. Crime Delinq* 44:561–589

Armistead L, Wierson M, Forehand R, Frame C (1992), Psychopathology in incarcerated juvenile delinquents: does it extend beyond externalizing problems? *Adolescence* 27:309–314

Briere J (1996), *Professional Manual for the Trauma Symptom Checklist for Children (TSC-C)*. Odessa, FL: Psychological Assessment Resources

Campbell C, Schwarz DF (1996), Prevalence and impact of exposure to inter-personal violence among suburban and urban middle school students. *Pediatrics* 98:396–402

Cauffman E, Feldman SS, Waterman J, Steiner H (1998), Posttraumatic stress disorder among female juvenile offenders. *J Am Acad Child Adolesc Psychiatry* 37:1209–1216

Chesney-Lind M, Brown M (1999), Girls and violence. In: *Youth Violence: Prevention, Intervention, and Social Policy*, Flannery D, Huff R, eds. Washington, DC: American Psychiatric Press, pp 171–199

Dahlberg LL (1998), Youth violence in the United States: major trends, risk factors, and prevention approaches. *Am J Prev Med* 14:259–272

DeKalb, G (1999), Student truancy. *ERIC Digest 125* (ERIC Clearinghouse on Educational Management No. SJJ69850). Washington, DC: Office of Educational Research and Improvement

Dodge K, Bates J, Petit G (1990), Mechanisms in the cycle of violence. *Science* 250:1678–1683

DuRant RH, Knight J, Goodman E (1997), Factors associated with aggressive and delinquent behaviors among patients attending an adolescent medicine clinic. *J Adolesc Health* 21:3 03 –3 08

Ellickson P, McGuigan K (2000), Early predictors of adolescent violence. *Am J Public Health* 90:566–572

Ellickson P, Saner H, McGuigan K (1997), Profiles of violent youth: substance use and other concurrent problems. *Am J Public Health* 87:985–991

Farrington D (1989), Early predictors of adolescent aggression and adult violence. *Violence Vict* 4:79–100

Farrington D (1996), The explanation and prevention of youthful offending. In: *Delinquency and Crime: Current Theories*, Hawkins DJ, ed. New York: Cambridge University Press, pp 68–148

Finkelhor D, Dziuba-Leatherman J (1994), Children as the victims of violence: a national survey. *Pediatrics* 94:413–420

Flannery DJ, Singer M, Williams L, Castro P (1998), Adolescent violence exposure and victimization at home: coping and psychological trauma symptoms. *Int Rev Victimology* 6:29–48

Giaconia RM, Reinherz HZ, Silverman AB, Pakiz B, Frost AK, Cohen E (1995), Traumas and posttraumatic stress disorder in a community population of older adolescents. *J Am Acad Child Adolesc Psychiatry* 34:1369–1380

Gottfredson GD (1981), Schooling and delinquency. In: *New Directions in the Rehabilitation of Criminal Offenders*, Martin S, Sechrist L, Rednez R, eds. Washington, DC: National Academy Press, pp 424–469

Kandel DB, Raveis, VH, Kandel, PI (1984), Continuities and discontinuities: adjustment in young adulthood of former school absentees. *Youth Soc* 15:325–352

Kann K, Warren CW, Harris WA et al. (1996), Youth risk behavior surveillance: United States, 1995. *MMWR Morb Mortal Wkly Rep* 45:1–82

Martinez P, Richters JE (1993), The NIMH community violence project, II: children's distress symptoms associated with violence exposure. *Psychiatry* 270:1850–1856

Messer SC, Gross AM (1994), Childhood depression and aggression: a covariance structure analysis. *Behav Res Theory* 32:663–677

Moffitt T (1996), Measuring children's antisocial behaviors. *JAMA* 275: 403–404

Moses A (1999), Exposure to violence, depression, and hostility in a sample of inner city high school youth. *J Adolesc* 22:21–32

Office of Juvenile Justice and Delinquency Prevention (1998), *Serious and Violent Juvenile Offenders* (Bulletin). Washington, DC: US Department of Justice, Office of Justice Programs, Office of Juvenile Justice and Delinquency Research

Pastore DR, Fisher M, Friedman S (1996), Violence and mental health problems among urban high school students. *J Adolesc Health* 18:320–324

Rachuba L, Stanton B, Howard D (1995), Violent crime in the United States: an epidemiological profile. *Arch Pediatr Adolesc Med* 149:953–960

Rivara FP, Shepherd JP, Farrington DP, Richmond PW, Cannon P (1995), Victim as offender in youth violence. *Ann Emerg Med* 26:609–614

Robins LN, Robertson J (1996), Truancy and later psychiatric disorder. In: *Unwillingly to School*, Hersov L, Berg I, eds. London: Gaskell, pp 119–128

Schwab-Stone ME, Ayers TS, Kaspro W et al. (1995), No safe haven: a study of violence exposure in an urban community. *J Am Acad Child Adolesc Psychiatry* 34:1343–1352

Selner-O'Hagan MB, Kindlon DJ, Buka SL, Raudenbush SW, Earls FJ (1998), Assessing exposure to violence in urban youth. *J Child Psychol Psychiatry* 39:215–224

Singer MI, Anglin TM, Song L, Lunghofer L (1995), Adolescents' exposure to violence and associated symptoms of psychological trauma. *JAMA* 273:477–482

Singer MI, Miller DB, Guo S, Flannery D, Frierson T, Slovak K (1999), Contributors to violent behavior among elementary and middle school children. *Pediatrics* 104:878–884

Snyder HN, Sickmund M (1999), *Juvenile Offenders and Victims: 1999 National Report*. Washington, DC: US Department of Justice, Office of Justice Programs, Office of Juvenile Justice and Delinquency Prevention

Snyder HN, Sickmund M, Poe-Yamagata E (1996), *Juvenile Offenders and Victims: 1996 Update on Violence*. Washington, DC: US Department of Justice, Office of Justice Programs, Office of Juvenile Justice and Delinquency Programs

Song L, Singer MI, Anglin TM (1998), Violence exposure and emotional trauma as contributors to adolescents' violent behaviors. *Arch Pediatr Adolesc Med* 152:531–536

Steiner H, Garcia IG, Matthews Z (1997), Posttraumatic stress disorder in incarcerated juvenile delinquents. *J Am Acad Child Adolesc Psychiatry* 36:357–365

Sternberg KJ, Lamb ME, Greenbaum C et al. (1993), Effects of domestic violence on children's behavior problems and depression. *Dev Psychol* 29:44–52

Timmons-Mitchell J, Brown C, Schulz SC, Webster SE, Underwood LA, Semple WE (1997), Comparing the mental health needs of female and male incarcerated juvenile delinquents. *Behav Sci Law* 15:195–202

U.S. Department of Justice. (1997), *Privacy and Juvenile Justice Records: A Mid-Decade Status Report*. Washington, DC: US Department of Justice, Office of Justice Programs

Valois RF, McKeown RE, Garrison C, Vincent ML (1995), Correlates of aggressive and violent behaviors among public high school adolescents. *J Adolesc Health* 16:26–34

Widom C (1989), Child abuse, neglect, and violence criminal behavior. *Criminology* 27:251–271