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Risk and Protective Profiles Among Never Exposed, Single Form, and Multiple Form Violence Exposed Youth

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Abstract

This investigation integrated violence exposure with critical risk and protective factors linked to healthy adolescent adaptation and transition into early adulthood. A racially diverse sample of 848 adolescents identified as at-risk for school drop-out were assessed for no, single, or multiple forms of violence exposure. MANOVA tests revealed that youth with single form victimization fared more poorly than never-exposed youth, and that multiple-form victimization held the greatest jeopardy to development. Youth with multiple-form victimization reported significantly elevated risk factors (emotional distress, life stress, suicide risk, risky behaviors) and lower protective factors (social support, school engagement, family structure) than both single-form and never-exposed youth. Implications are discussed for preventive and early intervention programming and for examining the transition of at-risk youth into young adulthood.

Keywords

violence; victimization; development; adolescence; polyvictimization; abuse; maltreatment

Violence exposure (including both witnessing and direct victimization) in the United States is disproportionately experienced by youth, with children and adolescents 12–19 years of age being at highest risk (Bureau of Justice Statistics, 2006; Finkelhor & Hashima, 2001). Not only is exposure to violence one of the most injurious experiences among youth, the co-occurrence with other risk factors seriously complicates preventing and ameliorating the effects of exposure on healthy development. The now robust documentation of these interrelationships combined with the need for cost effective prevention argue for research targeting populations at elevated risk (National Institute of Child Health and Human Development [NICHD], 2002; Smith, White, & Holland, 2003).

While known to be highly related to other adverse events and behaviors in a young person's life, violence exposure has generally been pursued as a separate line of inquiry from research investigations of adolescent adaptation and problem behavior (Finkelhor & Hashima, 2001). This separation limits our capacity to assess the extent to which youth at risk for problem behaviors carry histories of violence exposure and how their violence exposure profiles relate to their psychosocial development. The present study addresses this gap by assessing the prevalence of violence exposure among a sample of at-risk youth as well as relationships of this exposure to other factors thought to convey risk and protection to adolescent development. This integration of violence exposure with critical risk and

protective factors that are linked to healthy adolescent adaptation and transition into early adulthood provides new insights as to special needs of violence-exposed youth.

Risk and Protective Factors for Healthy Development: Links to Violence Exposure

Violence exposure is strongly associated with poorer physical and mental health including depression, anxiety, and suicide risk (Moeller, Bachmann, & Moeller, 1993; Thompson, Arias, Desai, & Basile, 2002), higher levels of life stress (Rogosch, Cicchetti, & Aber, 1995; Wolfe & McGee, 1994), problems with school functioning (Nugent, Labram, & McLoughlin, 1999), drug involvement (Clark, DeBellis, Lynch, Cornelius, & Martin, 2003; Medrano, Hutch, Zule, & Desmond, 2002), and increased vulnerability to future violent revictimization (Finkelhor & Dzuiba-Leatherman, 1994; Wolfe, Wekerle, Scott, Straatman, & Grasley, 2004). Shared antecedent risk factors are linked with juvenile violence exposure as well as drug abuse, emotional distress, life stress, and school failure/drop-out (Tyler, 2002; U.S. Department of Health and Human Services, 2001), suggesting overlapping etiological pathways. Moreover, these factors combine, often compounding one another and reinforcing functioning problems (such as substance use) that youth might otherwise mature out of.

Protective factors, in this context, are individual and/or environmental resources that have been found to contribute to positive adaptation and/or mitigate the effects of risk factors, so that the youth is able to adapt more successfully. Indeed, research with adolescents has demonstrated the importance of personal and social resources as buffers that ameliorate effects of emotional distress, drug involvement, and poor school engagement (Catalano, Haggerty, Oesterle, Fleming, & Hawkins, 2004; Eggert, Thompson, Randell, & Pike, 2002). Similar variables, such as social support, positive family functioning, positive self-worth, perceived self-efficacy, problem-solving coping, and decision making appear to protect or buffer risk effects for youth exposed to violence (Finkelhor & Kendall-Tackett, 1997; Howes, Cicchetti, Toth, & Rogosch, 2000).

Since problems often co-occur or form a constellation of adverse events, we would expect violence exposure to be part of a multiple problem risk structure relative to healthy development. Further, higher levels of violence exposure would be expected to correspond with greater numbers and higher levels of multiple problems. Conversely, we would expect greater violence exposure histories to be associated with greater deficits among these theorized protective components. This view is supported in prior research on risk (Morrison, Robertson, Laurie, & Kelly, 2002; Resnick, Borowsky, & Ireland, 1999), in recent urgings for violence programming that incorporates protective measures (Albus, Weist, & Perez-Smith, 2004; White & Smith, 2004), and in findings of positive resources consistent with those studied here buffering violence exposure effects (Jonzon & Lindblad, 2006; Runtz & Schallow, 1997).

Multiple Form Exposure as an Emerging Focus

The preponderance of research associating specific psychosocial outcomes with violence exposure has focused on single categories of violence—such as childhood physical abuse or sexual abuse (Saunders, 2003). However, it is becoming increasingly evident that youth who experience one form of victimization are at higher risk of multiple form exposure, such as witnessing violence, physical abuse, or sexual abuse (Bernstein et al., 2003; Finkelhor & Dzuiba-Leatherman, 1994; Rossman & Rosenberg, 1998). Attempts to bring a more unified approach to assessment have spawned the investigation of multiple form exposure. Finkelhor, Hamby, Ormrod, and Turner (2005), for example, argue that lack of multiple form assessment in adolescent development and problem analysis has yielded potentially

misleading findings, such as misattributing negative psychosocial effects to only one or two forms of violence when other co-occurring violence exposures are not measured.

Recent surveys have revealed substantially higher numbers of multiple form violence exposed youth than previously believed, as well as strong association between multiple form exposure and poorer levels of physical and mental health, substance use, and risky behaviors (Finkelhor, Ormrod, & Turner, 2007b; Kilpatrick, Ruggiero, Acierno, Saunders, Resnick, & Best, 2003), even after controlling for demographic and family characteristics (Kilpatrick et al., 2003). Multiple form violence exposure has been associated with more impaired mental health functioning and higher life stress relative to both nonvictimized and to single form exposed youth, including youth with repeated episodes of the same kind of victimization (Finkelhor, Ormrod, & Turner, 2007a; Green et al., 2000). Among multiple form exposed youth, those with higher levels of cumulative exposure manifest more vulnerable development such as greater life adversity, lower social support, and negative mental health (Finkelhor, Ormrod, Turner, & Hamby, 2005; Vranceanu, Hobfoll, & Johnson, 2007).

At Risk Youth and Study Aims

Findings from normative samples may not be fully generalizable to at-risk youth populations, such as youth in the present study who were at-risk of school failure and who showed symptoms associated with problematic psychosocial developmental and risk of negative young adult outcomes. We anticipate that these youth, with higher levels of overall risk factors, are also at risk for higher levels of violence exposure. In addition to developmental risks in adolescence associated with violence histories, findings of adult impairment associated with adolescent at-risk status and violence exposure history (for a review, see Edwards, Holden, Felitti, & Anda, 2003; Green et al., 2000) argue that violence history will have implications for both adolescent and young adult health.

The present study helps advance current knowledge by: (a) examining violence exposure among community-based, at-risk adolescents; (b) assessing levels of psychosocial factors posing risk and protection for healthy development on the basis of prevalence, as distinguished by histories of no violence exposure, single form exposure, and multiple form exposure; and (c) assessing the variability in risk and protective profiles among those with multiple form exposure on the basis of cumulative exposure.

Methods

Sample and Procedures

Study participants ($N = 848$) were adolescents in 9th through 12th grade in urban high schools in the Northwest and Southwest regions of the United States who met established criteria for risk of school drop out (Herting, 1990): (a) below credits for grade level, (b) top 25th percentile in school absences, (c) GPA 2.3 or less and/or a pattern of slipping grades, (d) prior school dropout status, or (e) standardized school referral as at-risk of school failure and meeting one or more of criteria (a)–(c). Use of school drop-out/failure operationalized by these criteria has resulted in youth samples with a constellation of risk factors/behaviors and low levels of protective factors consistent with others' research regarding the multi-problem profiles that typify youth at risk of school failure (Brenner & Collins, 1998; Resnick, 2000). In addition, the criteria allow for consistent sample creation across participating schools and districts.

The extent to which these recruitment strategies yield samples at higher levels for developmental risk and lower levels for protective factors has been previously demonstrated (Eggert, Herting, & Thompson, 1996; Herting, 1990). Although these studies did not deal directly with violence, the strong association of violence exposure with elevated risk factors

such as emotional distress, life stress, substance use, and poor school functioning argues that the sample will also be characterized by violence-related risk (Saunders, 2003).

Following IRB approved procedures, participants were randomly chosen for recruitment from the sampling pool and invited to participate; youth via the school setting and parents by telephone. Information was provided about the scope of the questions, voluntary nature of participation, and monetary compensation. Interviews were in person, standardized, conducted by research nurses (with an educational minimum of a master's degree), monitored for fidelity, and documented to ensure consistency. Verbal and written assent/consent was obtained from both students and parents or guardians. IRB approved protocols were followed with respect to minors at risk and mandatory reporting.

Within the sample, 45% were female. Ages ranged from 14–21 with only three being over age 19. The average age was 15.98 ($SD = 1.24$). Ethnic breakdown of the sample included 20.0% Latino Hispanic, 15.5% African American, 9.9% Asian American/Pacific Islander, 7.2% Native American, 9.0% self-reported mixed or other ethnicity, and 38.4% European-American.

Measures

Data were gathered through initial an in-person interview using the Measure of Adolescent Potential for Suicide (MAPS) questionnaire and self-report surveys using the High School Study Questionnaire (HSQ). Both the HSQ and MAPS draw from well-known scales (e.g., Rosenberg's Self-Esteem Scale; the Center for Epidemiologic Scale [CES-D]) or scales constructed specifically for this population (e.g., the Drug Involvement Scale). Both have been tested and analyzed extensively for reliability, ease of use, interpretability, and developmental appropriateness across multiple samples (Eggert, Thompson, & Herting, 1994; Thompson, Eggert, Randell, & Pike, 2001; Walsh, Randell, & Eggert, 1997). Specific measures are described below. All measures below are from the MAPS interview except school-related items from the HSQ. Measures are based on 7 point Likert type scales (0–6) unless otherwise specified.

Violence exposure was assessed in two ways based on five items: two witnessing (parental violence toward a family member, a family member destroying things) and three experiencing (physical abuse, sexual abuse, and purposeful physical injury by another). Scale construction paralleled that of other youth surveys (the National Youth Survey, Developmental Victimization Survey) in distinguishing (a) prevalence, or whether respondents have or have not had varied violence exposures and (b) cumulative exposures across violence forms. *Multiple form violence exposure status* was measured by summing the number of violence forms for which respondents reported exposure, resulting in a three-level grouping: no exposure, single form exposure (one form only), and multiple form (two or more violence forms). *Cumulative violence exposure* was assessed by summing the frequency of exposure based on a 7 point scale (0 = never, 3 = sometimes, 6 = many times) across all violence forms

Developmental Risk Factors

Emotional distress was composed of four dimensions. The depression inventory (16 items, $\alpha = 0.90$) was derived from the CES-D (Radloff, 1977) and screened for symptoms of depression within the prior two weeks including loss of energy, difficulty sleeping, etc. Anxiety tapped excessive worry (about school, home, work, expectations), physical agitation, fear and frightening dream/thoughts, humiliation, and stomach aches within the prior two weeks (13 items, $\alpha = 0.87$; adapted from Thompson & Leckie, 1989). The hopelessness scale (14 items, $\alpha = 0.89$; adapted from Beck, Weissman, Lester, & Texler,

1974) questioned youth about feelings of discouragement and hopelessness, lack of enjoyment in life, and no viable solutions to problems. The anger scale included questions on inwardly directed anger (self-hate, self-blame, holding grudges), and externalized anger (losing control, fighting) (11 items, $\alpha = 0.85$; derived from Siegel, 1986; Thompson & Leckie, 1989).

Life stress was assessed on three dimensions. A sum was produced of normal adolescent stress as well as problems associated with high risk statuses based on yes/no responses to 31 stressful events being experienced within the past two weeks (adapted from McCubbin & Thompson, 1987, and Newcomb, Huba, & Bentler, 1981). The effect of those stresses was indexed by the mean rating of how much distress those events had caused, based on 0–6 Likert type scale (0 = not at all, 2 = a little, 4 = moderately, 6 = a great deal). Family distress ($\alpha = 0.59$) included conflicts and tensions with parent(s), thoughts of running away, and problematic parental alcohol and/or drug use.

Suicide risk was inventoried on multiple levels, including frequency and intrusiveness of suicide thoughts (8 items, $\alpha = 0.88$), number of prior suicide attempts in the past year (one item), and the lethality of previous attempts (15 items, $\alpha = 0.91$), based on ratings of method and intent, if youth was alone, if drugs and/or alcohol were involved, and whether treatment was required (0 = no treatment to 6 = medical treatment in the intensive care unit [ICU]) (Eggert et al., 1994).

Risky behavior was assessed through multiple indicators. Substance use included alcohol use (the frequency of beer and hard liquor use; $r = 0.71$) and other drug use (three items: frequency of marijuana, hard drug, and polydrug use; $\alpha = 0.71$). Other high risk behaviors (Eggert et al., 1994) included trouble with the law, driving recklessly, unprotected sex, running away from home, and life-threatening risks (9 items, $\alpha = 0.73$). Perceived peer high risk behavior as reported by the respondent is a mean-based scale of eight items that asked what proportion of one's peers engaged in drug/alcohol use, truancy, fighting, and getting into trouble at school or with the law ($\alpha = 0.88$).

Developmental Protective Factors

Personal resources were measured in three ways. Self-esteem, based on the Rosenberg scale (four items, $\alpha = 0.78$), assessed perceptions of self-worth and positive qualities, feeling useful, and taking a positive attitude toward self. A nine item personal control scale (adapted from Coppel, 1981, and Linehan, Goodstein, Nielson, & Chiles, 1983) measured perceptions of being in control of one's life and the ability to cope and adjust ($\alpha = 0.85$). The number of positive coping strategies (from Patterson & McCubbin, 1987) were assessed with five items that tapped problem solving, the range of coping strategies used, and the level of problem-solving coping ($\alpha = 0.72$).

Social support was measured on four dimensions. Total amount of support and level of help for school from nine sources (e.g., family, peers, teachers), each rated using a 21-point scale ranging from –10 (*nonsupportive*) to 0 (*neutral*) to +10 (*supportive*). These sources were then rated as to how available they were (0–6; never to always). Students' sense of support was measured with six items concerning a sense of belonging, loneliness, and having people to turn to ($\alpha = 0.71$; Eggert et al., 1994). A five-item family support satisfaction scale from the Family Apgar (Smilkstein, Ashworth, & Montano, 1982) tapped perceptions of family support, help, and communication ($\alpha = 0.89$).

School engagement was measured with four scales from the HSQ. School goals met combined six items that rated students' perception of their attendance, GPA, performance, working toward a future career, and compliance with school rules ($\alpha = 0.85$). School

satisfaction contained four items and measured students' perceptions of their schedules, performance, attendance, and the school atmosphere ($\alpha = 0.70$). Drop out risk used a single question to probe students' likelihood of dropping out within the next year ($M = 0.38$, $SD = 1.09$). In addition, the number of times the student moved in middle ($M = 0.68$, $SD = 1.08$) and high school ($M = 0.54$, $SD = 1.00$) is used as a measure of stability, $r = 0.25$, $p < .001$.

Results

Violence Exposure Categories Profiles

The three violence exposure categories distinguished those with no reported violence, 22.3% ($n = 189$); single form violence, 23.3% ($n = 198$); and multiple form exposure, 54.4% ($n = 461$). The mean number of violence forms which violence-exposed respondents had encountered was 2.31 ($SD = 1.14$). Cumulative violence exposure (the sum of exposures across each of the five violence forms) ranged from 0–26 ($M = 4.30$, $SD = 4.78$) for the entire sample, 1–6 ($M = 1.77$, $SD = 1.12$) for those with single form exposure, and 2–26 ($M = 7.16$, $SD = 4.80$) for those with multiple form exposures.

Numbers of youth endorsing each of the five forms were as follows. Approximately one-half (50.1%) of the sample had witnessed a family member destroying another's property, and 54.2% reported seeing a family member hit someone in anger. Close to half (46.7%) reported being physically injured, while 18.9% reported physical abuse, and 8.6% reported experiencing sexual abuse. Examination of violence exposure by participating schools revealed no significant differences; therefore, respondents were combined into one sample.

Those in the three categories for exposure status did not differ by gender, ethnicity or parent education/employment. Tests of violence exposure status by gender ($\chi^2[2] = 3.20$, $p = 0.20$), ethnicity ($\chi^2[10] = 7.15$, $p = 0.71$), and age ($F[2, 839] = 0.63$, $p = 0.53$) indicated no significant differences in distribution. Similarly, analysis of variance tests indicated no significant differences on the basis of mother's education, $F(2, 813) = 0.30$, $p = 0.74$; father's education, $F(2, 803) = 0.83$, $p = 0.44$; mother's employment level, $F(2, 822) = 0.12$, $p = 0.89$; or father's employment level, $F(2, 803) = 0.44$, $p = 0.44$. Although the youth were not asked the specific family income level, they were assessed as to their perception of family finances being higher or lower than that of their peers. Significant differences emerged, with multiple form exposed youth reporting lower family finances relative to single form and never exposed youth, $F(2, 822) = 7.62$, $p < .0001$. Comparable patterns in demographics were evident for cumulative violence exposure, with the exception that females reported higher average cumulative levels than males (4.74 versus 3.94, $p < .02$).

Differences in Risk and Protective Factors Levels by Multiple Form Exposure Status

Analysis Plan—MANOVA was used to test group comparisons on sets of risk and protective factors. This technique controls for the risk of an inflated type I error caused by the use of multiple univariate tests (Stevens, 1996), while testing for multiple outcomes simultaneously, requiring that the omnibus test for each measure set achieve significance before testing for significant group differences on individual measures. The Wilk's Lambda was used to test the multivariate null hypothesis that there would be no difference among the three exposure status groups for each set of measures. Tukey post hoc tests were used following significant results to examine pairwise group differences while holding the error rate constant. Chi-square analysis was undertaken on categorical level variables.

Risk Factors—As shown in Table 1, MANOVA tests were significant for each risk factor set. Group differences were apparent for all forms of emotional distress and were particularly pronounced for anger and anxiety. Life stress and suicide risk also reflected

significant differences on each of the measures constituting these sets, with highest levels evident among multiple form-exposed youth. For both behaviors of respondents as well as their peers, risky behaviors were significantly elevated among those with prior violence exposure, with non-substance-related individual risk behaviors reflecting the greatest group differences. Differences between the multiple form exposure group and both the no exposure and single form exposure group dominated the pattern. Slightly less than half the measures reflected significant differences between no exposure and single exposure respondents.

Protective Factors—Protective factors exhibited the same group differences demonstrated in risk factors, in the expected negative direction (see Table 2). One domain, personal resources, did not significantly vary as a function of the violence exposure. Social support showed significant differences overall and across each of the variables in that set, particularly evident in perceived sense of support. School engagement showed the same pattern, especially indicated by number of school moves. Family structure revealed significantly more divorce among violence-exposed youth as well as higher levels of step-parenting and single parenting. Post-hoc comparison tests indicated the most frequent significant contrasts were between those with no and multiple form prior exposure.

Variability Among Multiple Form Youth as a Function of Cumulative Exposure

—Examining differences among multiple form exposed youth ($n = 461$) on the basis of their cumulative exposure enabled us to assess whether differential patterns of risk and protection among these youth are evident. Three subgroups were created by separating their range of cumulative exposures across all violence forms into low ($n = 170$), moderate ($n = 144$), and high ($n = 147$) levels. Means and ranges for each level are: Low Cumulative 2.86 (2–4), Moderate Cumulative 6.39 (5–8), and High Cumulative 12.87 (9–26).

MANOVA tests followed by univariate and post-hoc comparison tests were used to evaluate differences on the basis on low, moderate, and high cumulative exposure levels. As evident in Table 3, all risk factors achieved significant omnibus tests of group difference, with higher cumulative exposure being associated with greater impairment. Between group differences were evident in emotional distress, nonvictimization stress exposure, suicidality, and risky behavior. Differences in risky behaviors were predominantly expressed through the youth's own high risk behaviors, and not their specific drug and alcohol use. Relative to protective factors (see Table 4), a notable finding is that group differences for prevalence, in contrast to group differences for status (as indicated in Table 2), achieved significance in level of personal resources, with univariate tests significant for self-esteem and personal coping. Social support also varied, with differences most apparent for high cumulative exposed youth reporting substantially lower levels. While all youth in the sample were selected for risk of school drop out, multiple form exposed youth with higher cumulative exposure were significantly less satisfied with or attaining goals in schools and had more moves from one school to another. Family structure also varied among multiple form exposed youth with over half those with highest cumulative exposure currently living with single parents.

Discussion

This study extends recent investigation of national samples by assessing violence exposure among community-based at-risk youth. It demonstrates the importance of a multiple form approach to examining individual violence exposure as well as its value to understanding adolescent developmental at-risk characteristics. We first discuss the characteristics of violence exposure among these youth. We then discuss the implications of these exposure profiles relative to contemporaneous psychosocial functioning and opportunities for intervention. We organize discussion of implications according to risk-enhancing factors and

personal/social resources serving as protective factors, followed by consideration of study strengths, limitations, and conclusions.

Violence Exposure Profiles

Although direct comparisons between this sample and national samples are limited by measurement and age frame differences, nonetheless the proportion of youth in this study with violence exposure is generally higher, as expected, than reported by national representative samples (U.S. Department of Justice, 2003). The National Survey of Adolescents (a national household probability sample), for example, found that 50% of youth aged 12–17 reported no history of violence exposure (compared to our 22%), nearly 30% had one exposure form, and the remaining approximately 20% had exposure to two or more forms (compared to 54% in our sample who reported multiple form exposures) (Saunders, 2003). We can infer from this difference that youth who are at risk for school dropout are likely to have greater violence exposure.

Although violence exposure is a serious public health concern for all youth, efforts to identify youth with higher likelihood of exposure hold greater promise of linking violence-affected youth with needed services. Characteristics of the current sample suggest that youth at risk of school failure and drop-out an indicated population with respect to violence exposure (i.e., are experiencing early signs of violence exposure or related problems associated with violence exposure). Relatedly, these youth also report higher levels of other factors posing risk to healthy development and lower personal and social resources to foster resilience. Schools provide an important venue for reaching violence-affected youth, particularly those who have not been involved with other systems (e.g., mental health, child welfare) and whose needs may otherwise remain undetected and underserved.

Risk Factor Differences as a Function of Violence Exposure Status

This research confirms the importance of assessing for multiple types of violence exposure. Expectations of significant differences as a function of violence exposure (no exposure, single form, multiple form) were supported for every category of risk: emotional distress, life stress, suicide risk, and risky behaviors (both one's own and peers' high risk behavior). Further, when organized by violence exposure category, these vulnerable youth show a pattern of increased risk across categories, from no to single to multiple forms of exposure. These findings are consistent with studies that report poorer levels of physical and mental health and increased substance use and risky behaviors among youth from normative samples exposed to more than one form of violence (Finkelhor, Ormrod, & Turner, 2007b; Kilpatrick et al., 2003) and with findings that multiple form exposed youth are more symptomatic than youth with single form exposure, including those with repeated episodes of the same exposure form (Finkelhor et al., 2007a). Findings of elevated non-violence life stressors echoes findings of other research (Dong et al., 2004; Green et al., 2000) that multiply violence-exposed children are likely to encounter other adverse conditions with cumulative negative effects.

Our assessment of risk differences among multiple form exposed youth parallels investigations of youth with varying levels of polyvictimization (Finkelhor et al., 2007a). Polyvictimization refers to individuals with multiform violence exposure whose number of exposure forms is higher than the sample average, which, in our study, includes all multiple form exposed youth. Our findings reveal that multiple form exposed youth report consistently higher risk profiles relative to never and single form exposed youth, and that those with highest exposure frequency among the multiple form exposed show significantly greater levels of current psychosocial impairment. Specifically, multiple form youth with low and medium cumulative exposure do not significantly differ. By contrast, high

cumulative exposed youth report significantly elevated emotional distress, life stressors, suicide risk, and high risk behaviors (other than substance use). Results from these at-risk youth are in keeping with polyvictimized youth from normative samples (Finkelhor & Dziuba-Leatherman, 1994; Finkelhor et al., 2007a), including the persistence of psychological distress into young adulthood (Elliott & Richmond, 2006).

The findings emphasize the intersection of violence exposure with factors commonly targeted in programs to promote healthy youth development (e.g., drug use prevention), highlighting the potential amplified impairment for multiple form violence exposed youth and elevated vulnerability to negative young adulthood outcomes. These results argue for routine inclusion of violence exposure assessment in prevention and treatment programs focusing on at-risk and symptomatic adolescents. Links between juvenile violence exposure and problems in adult functioning (Arias, 2004; Briere, 2002; Irwin, 1999) suggest that effects from untreated exposure may dilute the effectiveness of programming relative to positive adolescent development, particularly for those youth with multiple form and higher frequency exposure histories. Adaptive intervention approaches that tailor program components and dose levels on the basis of identified subgroup needs are also indicated (Collins, Murphy, & Bierman, 2004). In a related vein, much of youth victimization prevention is organized around distinct forms of violence exposure such as bullying, sexual assault, parental violence, and dating violence. Assessment of or programming responsive to multiple form exposure is not typical, raising the question of improved effectiveness through reshaping more narrowly targeted population approaches to include the most vulnerable and exposed youth (Finkelhor et al., 2007b).

Protective Factor Differences as a Function of Violence Exposure Status

The influence of violence exposure showed similar trends for protective as for risk factors, although level differences were less pronounced. Multiple form exposed youth consistently reported lower levels of social resources (social support and school engagement), whereas never exposed and single form youth did not significantly differ on these dimensions. Similarly, those with multiple form exposure were more likely to have parents who were divorced and to be living with single parents and step-parents. Differences within multiple form violence exposed youth provide a more differentiated picture of the distribution of protective resources than among the youth experiencing no or only one form of violence. Here we see significantly lower levels of self-esteem and perceived personal control by high cumulative exposed youth, a finding consistent with studies of clinical samples and adults who report child maltreatment (Spertus, Yehuda, Wong, Halligan, & Seremetis, 2003). Similarly, high cumulative exposed youth report lower social support across all dimensions, fewer living with their natural parents, and greater instability through more frequent school moves.

Relative to risk factors, protective factors have been less extensively investigated among violence exposed youth, yet hold important potential for understanding processes of stress buffering and resilience. Multiple form violence exposed youth have considerably greater need for augmented social resources, such as social support and student engagement. For example, their lack of residential stability (number of moves) likely impeded their development of peer and school supports and affiliation with low risk-oriented peers. Although socioeconomic characteristics were not associated with violence exposure status, multiple-form-exposed youth perceived their family incomes to be lower. This perception is consistent with a higher percentage who reported less financial resources and lower parental education. As family members are often sources of violence perpetrated against youth, single and step-parenting arrangements may partially reflect separation from offending family members. The correspondence here with higher levels of family stress and lower levels of family support satisfaction point to family-level interventions as part of

intervention planning for juvenile violence exposure. Collectively these findings indicate the value of multi-level interventions, including individual, family, and school targets.

Personal resources reveal a complex picture. Significant differences were not evident among personal resources as a function of multiple form exposure status. However, youth with greater cumulative violence histories do show lower resources, particularly evident in lower self-esteem. One interpretation is that global self-esteem is a relatively resilient personal resource. For instance, Alves-Martins, Peixoto, Gouveia-Pereira, Amaral, and Pedro (2002) summarized findings that adolescents generally report self-esteem at acceptable levels despite poor academic performance. However, research on violence-exposed youth does reveal lower self-esteem and self-blame, particularly for those with more extensive histories (Arata, 2000; Mullen, Martin, Anderson, Romans, & Herbison, 1996). Lower self-esteem among the most intensely exposed youth is consistent with observations of resilience being overwhelmed by more chronic violence that becomes more an ongoing component of a young person's life rather than discrete events from which one can recover (Follette, Polusny, Bechtle, & Naugle, 1996). Although not generally examined relative to violence exposure, self-esteem research in other areas indicates that global measures may be less sensitive than measures that tap different aspects of youth's identities (Alves-Martins et al., 2002; Harter, 1999). Thus, assessing self-evaluation of varied domains (e.g., physical appearance, scholastic achievement, social acceptance) in addition to global self-esteem may be better positioned to discern negatively affected aspects of self-esteem that can guide intervention development.

What is clear is that youth with high levels of violence exposure suffer from both significantly higher risk factors and lower protective factors. The findings for personal resources have implications for the importance of future longitudinal studies directed at examining and specifying the interactions of risk and protection for the purpose of guiding interventions with at-risk youth. Descriptive results, suggest that strengthening these protective factors could potentially offset or ameliorate risk factor effects, indicating the usefulness of adaptive interventions for this subgroup. Social support is similarly an important intervention target. Multiple form exposed youth, particularly those with higher cumulative exposure, reported both lower social support and higher levels of peers, who often serve as support resources, engaging in high risk behaviors, which is a risk-enhancing combination. School engagement would be expected to reflect limited differences because the sample was obtained on the basis of risk of school drop-out, which is highly associated with disengagement. Yet, the protective set overall and each of the four variables showed significant differences. Interventions to bolster social support for youth with more extensive violence histories need to take into account the sources of this support, the qualitative nature of support activities, and reengagement of youth. Findings that positive attitude toward and engagement with school serve to stabilize youth and moderate effects of violence argues for the value of school-based supports (Kennedy & Bennett, 2006).

Study Strengths and Limitations

The focus on youth at risk for school drop-out, and hence co-occurring problem behaviors, extends findings from normative and clinical samples. An additional strength is the inclusion of personal and social resources, which are potential protective factors for present and future psychosocial health among those who have experienced violence exposure. Finally, assessing multiple forms of violence exposure, rather than focusing on one form, increases our ability to specify the impact of multiform violence on healthy development and helps reduce the risk of misattributing effects to a solely measured violence form when that effect may be partially due to unmeasured multiple exposure forms (Hanson et al., 2006).

This interpretation of study results takes several study limitations into account. The descriptive nature of this cross-sectional research precludes its ability to account for revictimization symptomatology. Given the multiple pathways to and from violence, negative mental health or other adverse conditions may be both precursors to as well as outcomes of violence exposure. Boney-McCoy and Finkelhor (1996), for example, found that preexisting emotional distress reduced the association between violence exposure and subsequent psychopathology, although significant unique effects were carried from the victimization net of preexisting conditions. Our ability to aggregate across multiple exposure forms is an asset, yet a more comprehensive instrumentation is required to capture a full spectrum of exposure. Saunders (2003) acknowledged the practical limitations to full scale violence assessment, particularly in studies where violence exposure is one of several factors of interest. However, instrumentation is becoming available to accommodate comprehensive assessment (Finkelhor et al., 2005; Tjaden & Thoennes, 1998).

As with the majority of adolescent development and violence research, these data are based on self reports. Although self reporting is a standard methodology (Weathers & Keane, 1999), it nonetheless lacks objective referents against which to compare respondents' perceptions and recall. However, the measures have good to excellent psychometric properties and have been used with multiple samples of at-risk and low-risk adolescents. Finally, although it is unknown how fully findings from these respondents might be expected to generalize to all youth, the sample is ethnically diverse, drawn from two large, separate geographical areas that include urban and rural youth, and captures a range of types and levels of youth risk behavior.

Conclusion

Recent evidence suggests that multiple form violence exposure effects mental health outcomes beyond that attributable to the individual exposures themselves (Finkelhor et al., 2007a). These and the current findings indicate the multiple form violence exposures pose unique coping challenges for children. From a stress perspective, these experiences combine and interrelate with other social and psychological features of development, possibly overwhelming a child's defensive coping and fostering developmental trajectories that deepen impairment and maladaptive coping. Moreover, these cumulative risk factors reside alongside deficits in protective factors that might help ameliorate erosive influences, further compounding the likelihood of negative outcomes as youth transition to young adulthood.

Yet issues of violence exposure are not commonly part of youth health promotion or problem prevention programming. The findings here indicate value for including violence exposure assessment and education in programming directed toward these related issues, such as health promotion instruction or prevention programming for substance use or school drop-out. Targeting selected or indicated populations through correlated factors such as depression, risk-taking behaviors, or poor school achievement enhances the likelihood of reaching vulnerable and affected youth. Means of screening need not be intrusive. Our experience suggests that sampling on routinely collected school performance data provides an accessible community-based approach to reaching violence-affected youth. Schools also have the capacity through avenues such as teen clinics and school counselors to identify at-risk youth and to provide support and referral services. Routine screening for violence exposure, particularly among subgroups such as academically at-risk students, appears warranted to the degree current and future work consistently link these trajectories to poor academic and psychosocial development.

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Table 1

MANOVA and follow-up tests of mean differences in developmental risk factors across violence exposure statuses: No violence, single form, and multiple form

Risk factors	Violence exposure status			F value
	No violence (N = 189)	Single form (N = 198)	Multiple form (N = 461)	
Emotional Distress:	Wilk's Lambda (8, 1684.00) = 0.89 $F = 12.10^{***}$			
Depression ^{a,b,c}	1.29	1.54	1.77	16.57 ^{***}
Anxiety ^{b,c}	1.07	1.25	1.55	20.18 ^{***}
Hopelessness ^{b,c}	1.25	1.35	1.56	9.52 ^{***}
Anger ^{a,b,c}	1.37	1.72	2.23	46.59 ^{***}
Stress:	Wilk's Lambda (6, 1684.00) = 0.89 $F = 17.46^{***}$			
Number of stressful events ^{a,b,c}	9.31	11.38	13.46	47.47 ^{***}
Effect of stress ^c	1.96	1.93	2.14	3.58 [*]
Family distress ^{b,c}	0.96	1.13	1.44	12.20 ^{***}
Suicide Risk:	Wilk's Lambda (6, 1680.00) = 0.93 $F = 11.20^{***}$			
Suicide ideation ^{b,c}	0.31	0.43	0.63	13.18 ^{***}
Suicide exposure ^{b,c}	0.48	0.77	1.13	20.25 ^{***}
Lethality of prior attempts ^{b,c}	0.11	0.18	0.41	18.62 ^{***}
Risky Behaviors:	Wilk's Lambda (8, 1666.00) = 0.93 $F = 8.31^{***}$			
Alcohol use ^{a,b}	0.62	1.06	1.07	10.07 ^{***}
Other drug use ^b	0.37	0.57	0.72	9.90 ^{***}
Other high-risk behaviors ^{a,b,c}	0.42	0.67	0.92	26.16 ^{***}
Peer high risk behaviors ^{a,b,c}	2.06	2.51	2.77	14.65 ^{***}

* $p < .05$,

** $p < .01$,

*** $p < .001$.

^a Significant difference between no and single form exposure groups.

^b Significant difference between no and multiple form exposure groups.

^c Significant difference between single- and multiple form exposure groups.

Table 2

MANOVA and follow-up tests of mean differences in developmental protective factors across violence exposure statuses: No violence, single form, and multiple form

Protective factors	Violence exposure			F value
	No violence (N = 189)	Single form (N = 198)	Multiple form (N = 461)	
Personal Resources:	Wilk's Lambda (6, 1684.00) = 1.00 $F = 0.59$			
Self-esteem	4.37	4.30	4.26	0.52
Personal control	4.20	4.18	4.08	1.12
Problem-solving coping	3.18	3.19	3.19	0.00
Support:	Wilk's Lambda (8, 1670.00) = 0.96 $F = 4.07^{***}$			
Availability of support ^b	4.23	4.05	3.97	4.18*
Amount of support ^b	5.53	5.31	4.92	3.62*
Family support satisfaction ^{b,c}	3.58	3.60	3.13	7.67***
Sense of support ^{b,c}	4.96	4.93	4.61	12.39***
School Engagement:	Wilk's Lambda (8, 1556.00) = 0.96 $F = 3.97^{***}$			
School goals met ^b	3.91	3.73	3.58	3.90*
School satisfaction ^b	3.32	3.12	3.03	3.88**
Drop out risk ^{b,c}	0.22	0.28	0.51	5.67**
School moves ^b	0.79	1.16	1.39	8.41***
Family Structure:				
Parents divorced	31.9%	42.5%	46.8%	$\chi^2 = 10.5^{**}$
Residential parents				
Single parent only	31.1%	35.4%	43.0%	$\chi^2 = 17.71^{***}$
Natural parent & stepparent	11.9	16.0	18.2	
Natural parents	57.1	48.6	38.7	

* $p < .05$,

** $p < .01$,

*** $p < .001$.

^aSignificant difference between no and single form exposure groups.

^bSignificant difference between no and multiple form exposure groups.

^cSignificant difference between single- and multiple form exposure groups.

Table 3

MANOVA and follow-up tests of mean differences in developmental risk factors across multiple form exposed youth with low, medium, or high cumulative exposure

Risk factors	Cumulative violence exposure			F value
	Low-cumulative (N = 170)	Medium cumulative (N = 144)	High cumulative (N = 147)	
Emotional Distress:	Wilk's Lambda (8, 910.00) = 0.82 $F = 11.80^{***}$			
Depression ^{b,c}	1.48	1.66	2.22	23.39 ^{***}
Anxiety ^{b,c}	1.23	1.42	2.04	31.58 ^{***}
Hopelessness ^{b,c}	1.36	1.44	1.91	16.44 ^{***}
Anger ^{a,b,c}	1.76	2.13	2.88	43.99 ^{***}
Stress:	Wilk's Lambda (6, 910.00) = 0.84 $F = 14.14^{***}$			
Number of stressful events ^{b,c}	11.85	13.00	15.75	24.47 ^{***}
Effect of stress ^{b,c}	1.97	2.08	2.39	7.07 ^{***}
Family distress ^{b,c}	1.14	1.26	1.96	19.53 ^{***}
Suicide Risk:	Wilk's Lambda (6, 906.00) = 0.93 $F = 5.97^{***}$			
Suicide ideation ^{b,c}	0.47	0.53	0.91	12.36 ^{***}
Suicide exposure ^{b,c}	0.98	0.96	1.48	6.85 ^{***}
Lethality of prior attempts ^{b,c}	0.27	0.35	0.63	9.50 ^{***}
Risky Behaviors:	Wilk's Lambda (8, 902.00) = 0.89 $F = 7.08^{***}$			
Alcohol use	1.05	0.98	1.17	0.92
Other drug use	0.59	0.71	0.86	2.95
Other high-risk behaviors ^{b,c}	0.72	0.94	1.41	24.79 ^{***}
Peer high risk behaviors ^{b,c}	2.52	2.64	3.18	8.88 ^{***}

* $p < .05$,

** $p < .01$,

*** $p < .001$.

^aSignificant difference between low and medium cumulative exposure groups.

^bSignificant difference between low and high cumulative exposure groups.

^cSignificant difference between medium and high cumulative exposure groups.

Table 4

MANOVA and follow-up tests of mean differences in developmental protective factors across multiple form exposed youth with low, medium, or high cumulative exposure

Protective factors	Cumulative violence exposure			F value
	Low cumulative	Medium cumulative	High cumulative	
Personal Resources:	Wilk's Lambda (6, 910.00) = 0.96 $F = 3.23^{**}$			
Self-esteem ^{b,c}	4.40	4.47	3.88	9.19 ^{***}
Personal control ^{b,c}	4.20	4.16	3.87	4.15 [*]
Problem-solving coping	3.25	3.21	3.09	0.70
Support:	Wilk's Lambda (8, 902.00) = 0.92 $F = 5.06^{***}$			
Availability of support ^b	4.09	4.03	3.78	3.75 [*]
Amount of support ^{b,c}	5.12	5.28	4.33	4.84 ^{**}
Family support satisfaction ^{b,c}	3.47	3.26	2.62	10.78 ^{***}
Sense of support ^{b,c}	4.84	4.74	4.21	16.72 ^{***}
School Engagement:	Wilk's Lambda (8, 846.00) = 0.92 $F = 4.82^{***}$			
School goals met ^c	3.55	3.83	3.35	3.93 [*]
School satisfaction ^{b,c}	3.13	3.25	2.68	9.45 ^{***}
Drop out risk	0.51	0.38	0.64	1.63
School moves ^{b,c}	1.04	1.27	1.92	9.92 ^{***}
Family Structure:				
Parents divorced	41.3%	50.7%	49.2%	$\chi^2 = 2.94$
Residential parents				
Single parent only	36.0%	44.1%	50.8%	$\chi^2 = 10.13^{*}$
Natural parent & stepparent	16.0	19.7	19.5	
Natural parents	48.0	36.2	29.7	

* $p < .05$,

** $p < .01$,

*** $p < .001$.

^aSignificant difference between low and medium cumulative exposure groups.

^bSignificant difference between low and high cumulative exposure groups.

^cSignificant difference between medium and high cumulative exposure groups.