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The effect of lifetime victimization on the mental health of children and adolescents

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Abstract

This paper examines the cumulative prevalence of victimization and its impact on mental health in a nationally representative sample of 2030 children aged 2–17 in the USA. Telephone interviews conducted with both caregivers and youth revealed socio-demographic variations in lifetime exposure to most forms of victimization, with ethnic minorities, those lower in socio-economic status, and those living in single parent and stepfamilies experiencing greater victimization. Sexual assault, child maltreatment, witnessing family violence, and other major violence exposure each made independent contributions to levels of both depression and anger/aggression. Other non-victimization adversities also showed substantial independent effects, while in most cases, each victimization domain remained a significant predictor of mental health. Results suggest that cumulative exposure to multiple forms of victimization over a child's life-course represents a substantial source of mental health risk.
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Introduction

Recent concern about victimization among children in the United States has resulted from a growing recognition of the high prevalence of victimization exposure (Finkelhor & Dziuba-Leatherman, 1994; Hashima & Finkelhor, 1999) and the potential for substantial and lasting consequences. Numerous past studies have documented associations between exposure to individual forms of victimization, such as physical and sexual abuse, and several negative mental health outcomes in children, including depression, anxiety, post-traumatic stress disorder, and conduct disorder (Augoustinos, 1987; Beitchman, Zucker, Hood, daCosta, & Akman, 1991; Kaufman, 1991; National Research Council, 1993; Wolfe, 1987).

However, while considerable research has addressed the impact of specific types of victimization, few studies have considered the combined effects of different forms of victimization. Focusing on only one or a few forms of victimizations out of the large spectrum of victimizations that children experience may substantially underestimate the burden of victimization exposure (Finkelhor, Ormrod, Turner, & Hamby, 2005) and fail to adequately capture the impact of victimization on child mental health. Recent research focusing on outcomes of childhood stress more generally has also underscored the importance of cumulative adversity on mental health, over and above the occurrence of specific life events or traumas (Turner & Butler, 2003; Turner &

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Lloyd, 1995). Research on victimization in childhood would benefit from a similar approach that considers victimization incidents as stressful events that may combine to increase risk of mental illness.

Past research on child victimization has typically also failed to account for other forms of adversity that are likely to co-exist with victimization experiences. While many forms of victimization represent acute and traumatic stressors, these events often occur against a backdrop of chronic family adversity and a multitude of other non-victimization events, such as poverty, unemployment, parental alcohol or drug problems, parental imprisonment, marital discord, episodes of homelessness, or parental mental illness. These other stressful contexts must be disentangled from the specific effects of child victimization. Moreover, non-victimization adversities can themselves accumulate over the child's lifetime to increase risk of mental illness.

The primary purpose of this research is to examine the effect of lifetime victimization on the mental health of children, independent of and in combination with lifetime adversity. The specific objectives are to: (1) assess the relevance of age, race, gender, socio-economic status (SES), and family structure on overall levels of victimization and adversity; (2) assess the independent effects of lifetime exposure to different victimization types (sexual abuse, child maltreatment, witnessing family violence, and other major violence exposure) on current levels of depression and anger/aggression among children ages 2–17; and (3) examine the effects of other forms of child and family adversity that may accumulate over the child's lifetime and potentially account for victimization-mental health associations.

Background

A crucial step in the prevention of mental disorder is the identification of factors and conditions that increase individual's risk for disorder. One area of growing interest concerns the extent to which various stressful experiences in childhood and adolescence represent important risk factors for the onset of disorder. It has been argued that the typical lack of attention within stress research on the effects of early stress experiences and the *accumulation* of lifetime events and adverse conditions, has led to the underestimation of the full impact of stress exposure (Turner, Wheaton, & Lloyd, 1995). Research in the last decade strongly supports the need for a more detailed and comprehensive examination of cumulative stress exposure (Turner & Butler, 2003; Turner & Lloyd, 1995). We contend that a thorough consideration of victimization experiences while also accounting for other adversity in childhood represents an important step in this direction.

Victimization as a source of stress in childhood

Although past epidemiological estimates of victimization have often been incomplete, there is ample evidence that child victimization is far from rare. Finkelhor and Dziuba-Leatherman (1994), for example, estimated that 6.2 million US youth age 10–16 experience some form of completed assault or abuse each year and one in eight (2.8 million) experience a victimization-related injury. Their data suggest that over one-half of all children in this age group have been victims of violence or attempted violence at some point in their lifetimes. Results of the National Crime Survey (NCVS) showed that the overall violent crime victimization rate for youth age 12–17 in 2003 was more than twice the average national rate (Catalano, 2004). Children also experience considerable exposure to family violence both directly at the hands of parents (Straus & Gelles, 1990) and indirectly from witnessing inter-parental violence (Carlson, 1984; Straus, 1992).

Child victims are usually victimized repeatedly over time. Menard and Huizinga (2001), for example, found "chronic multiple victimization" to be the norm in their high risk sample of adolescents. Recent national estimates (Finkelhor, Ormrod et al., 2005) confirm the high victimization rates among US children. Their findings indicate that the typical child who experiences *any* victimization, experiences multiple types of victimizations within a single year. This underscores the need to consider a wide range of victimization experiences when attempting to assess risk factors for mental illness. Moreover, given that lifetime experiences of victimization are likely to be even more extensive, the potential impact over time of this form of stress may be substantial.

Victimization and child mental health

Childhood victimization appears to be an important etiologic factor in the development of several serious psychiatric disorders in both childhood and adulthood (Macmillan, 2001; Molnar, Buka, & Kessler, 2001; Terr, 1991). There is considerable evidence linking both child physical abuse (Bryer, Nelson, Miller, & Krol, 1987; Holmes & Robins, 1988) and child sexual abuse (Browne & Finkelhor, 1986; Green, 1993) to subsequent disorder. Children exposed to these forms of victimization are consistently found to be higher on both internalizing and externalizing symptoms (Trickett & McBride-Chang, 1995). Linkages between distress and disorder in children and exposure to neighborhood violence have also been established (Osofsky, Wewers, Hann, & Fick, 1993; Richters & Martinez, 1993). Other specific types of victimization, such as aggravated assaults by non-family, violence to genitals, and attempted kidnappings, have further been associated

with elevated levels of psychological distress in youth (Boney-McCoy & Finkelhor, 1995).

While the mental health effects of these individual types of victimization are now well-recognized, less attention has been paid to how children may be exposed to multiple forms of victimization and the impact of such exposure. Considering only one or a few types of victimization is likely to underestimate the full impact of victimization experienced by children. At the same time, the impact of any single victimization exposure is likely to be overestimated to the extent that it typically occurs with other forms of victimization and other sources of stress.

Non-victimization adversity in childhood

There are numerous stressful events and contexts that, while not forms of victimization, are likely to have important mental health implications for children. Many of these events and circumstances revolve around the family context and may frequently co-occur with victimization. Family problems and other childhood adversities can represent antecedents or consequences to victimizations and/or represent independent sources of stress. In either case, level of non-victimization adversity must also be considered if we are to capture the cumulative impact of stress and disentangle the effects of victimization from other stressful contexts.

A number of adverse family circumstances have been found to affect child well-being. Parental alcohol and substance abuse, for example, has consistently been associated with childhood conduct problems (West & Printz, 1987) and with internalizing symptoms, such as depression (Jacob & Leonard, 1986; Roosa, Sandler, Beals, & Short, 1988). Importantly, the negative effects of parental alcohol and substance abuse appear to be largely due to the stressful family contexts and life events that directly arise from the caregiver's impairment (Chassin, Barrera, & Montgomery, 1997). The literature suggests similar concerns about stress and well-being among children of parents with severe physical illnesses (Leventhal, Leventhal, & Nguyen, 1985) and those experiencing parental unemployment (McLoyd, 1989), the death of a close family member (Lutzke, Ayers, Sandler, & Barr, 1997), disaster (Saylor, 1997), and child chronic illness (Eiser, 1990).

The above represent examples of childhood adversity that, even when considered individually, have been associated with negative mental health outcomes. However, there is reason to believe that exposure to multiple forms of adversity may be especially important for generating long-term mental health risks. Turner and Lloyd (1995) found that, while many of these individual traumas occurring in childhood or adolescence increased the probability of subsequent disorder, the effect of experiencing multiple adversities was especially powerful. Specifically, these investigators found that the number of traumatic events and adversities occurring prior to the age of 18 was the most important predictor of initial onset of both psychiatric and substance abuse disorders.

Social structural correlates of victimization

Important to the stress process framework is the idea that stressors are rooted in structural contexts and thus are likely to vary by age, gender, race and ethnicity, income, parental education, and family structure. Structural variations in exposure to victimization may, in turn, represent important explanatory factors for understanding status differences in children's mental health. Specifying systematic variations in the population also represents a crucial first step in identifying groups at special risk for victimization and ultimately creating target groups for intervention.

Research specifically devoted to documenting the social distribution of child victimization has been limited. Findings on variations in victimization by gender are most well established, indicating a greater risk among boys of experiencing physical assault and higher risk of sexual assault among girls (Brown & Bzostek, 2003; Child Trends, 2002; Finkelhor & Asdigian, 1996; Finkelhor & Hashima, 2001). Race and ethnic differences in victimization appear less consistently and may be due to related structural factors such as socioeconomic status, neighborhood characteristics or family structure. Black children have higher rates of child abuse and neglect and, among teenagers, higher rates of aggravated assault, robbery and homicide, relative to both White and Hispanic youth (Anderson, 2002; Brown & Bzostek, 2003). However, survey data that control for other covariates often find few or no significant associations between race and victimization (Finkelhor & Asdigian, 1996; Lauritsen, 2003).

Family structure may represent an important risk factor for childhood victimization. Based on a large national survey of 12–17 year olds, Lauritsen (2003) found that youth in single parent families experienced more stranger and non-stranger victimizations than those in two-parent families, independent of race and socioeconomic status. Finkelhor and Asdigian (1996) found that youth in stepfamilies were particularly at risk, relative to other family structures, for sexual assault and parental assault, with a variety of other predictors controlled.

Methods

Participants

This research is based on data from the Developmental Victimization Survey (DVS), designed to obtain

prevalence estimates of a comprehensive range of childhood victimizations across gender, race, and developmental stage. The survey, conducted between December, 2002, and February, 2003, assessed the experiences of a nationally representative sample of 2030 children age 2–17 living in the contiguous United States. The interviews with parents and youth were conducted over the phone by the employees of an experienced survey research firm. Telephone interviewing is a cost-effective methodology (Weeks, Kulka, Lessler, & Whitmore, 1983) that has been demonstrated to be comparable in reliability and validity with in-person interviews, even for sensitive topics (Bajos, Spira, Ducot, & Messiah, 1992; Bermack, 1989; Czaja, 1987; Marin & Marin, 1989). The methodology has also been used to interview youth in the US Department of Justice's National Crime Victimization Survey (Bureau of Justice Statistics) and in a variety of other epidemiological studies of youth concerning violence exposure (Hausman, Spivak, Prothrow-Stith, & Roeber, 1992).

The sample selection procedures were based on a list-assisted random digit dial telephone survey design. This design increases the rate of contacting eligible respondents by decreasing the rate of dialing business and non-working numbers. Experimental studies have found this design to decrease standard errors relative to the standard Mitofsky-Waksberg method (Waksberg, 1978) while producing samples with similar demographic profiles (Brick, Waksberg, Kulp, & Starer, 1995; Lund & Wright, 1994).

A short interview was conducted with an adult caregiver (usually a parent) to obtain family demographic information. One child was randomly selected from all eligible children living in a household by selecting the child with the most recent birthday. If the selected child was 10–17 years old, the main telephone interview was conducted with the child. If the selected child was 2–9 years old, the interview was conducted with the caregiver who "is most familiar with the child's daily routine and experiences." Caregivers were interviewed as proxies for the 2–9 year age group because the ability of children under the age of 10 to be recruited and participate in phone interviews of this nature has not been well-established, yet such children are still at an age when parents tend to be well informed about their experiences both at and away from home. In 68% of these caretaker interviews, the caretaker was the biological mother, in 24% the biological father, and in 8% some other relative or caretaker.

Consent was obtained for all interviews. In the case of a child interview, consent was obtained from both the parent and the child. Respondents were promised complete confidentiality, and were paid $10 for their participation. Children or parents who disclosed a situation of serious threat or ongoing victimization were re-contacted by a clinical member of the research team, trained in telephone crisis counseling, whose responsibility was to stay in contact with the respondent until the situation was resolved or brought to the attention of appropriate authorities. All procedures were authorized by the Institutional Review Board of the University of New Hampshire.

The final sample consisted of 2030 respondents: 1000 children (age 10–17) and 1030 caregivers of children age 2–9. The cooperation rate for the survey was 79.5 percent. The response rate based on standard guidelines (American Association for Public Opinion Research (AAPOR), 2004) was 41 percent. It should be noted that the majority of "non-respondents" represent households in which no resident was ever contacted even after up to 25 call attempts. Therefore, while it is unknown whether these unscreened households differ in some systematic way from survey respondents, their non-participation was not directly related to survey content. Because the sample somewhat under-represents the national proportion of Blacks and Hispanics, using 2002 Census estimates (US Census Bureau, 2000) we applied post-stratification weights to adjust for race proportion differences between our sample and national statistics. We also applied weights to adjust for within household probability of selection due to variation in the number of eligible children across households and the fact that the experiences of only one child per household were included in the study.

Measurement

Victimization: Measures of victimization exposure are based on a sub-set of items from the Juvenile Victimization Questionnaire, a recently constructed inventory of childhood victimization (Hamby, Finkelhor, Ormrod, & Turner, 2004). The Victimization Questionnaire was designed to be a more comprehensive instrument than has typically been used in past research, providing a description of all the major forms of offenses against youth.

The use of simple language and behaviorally specific questions clearly define the types of incidents that children should report. Prior to its use in the survey, the questions were extensively reviewed and tested with victimization specialists, focus groups of parents and children, and cognitive interviews with young children to determine the suitability of its language and content. The caregiver version, designed for proxy interviews with even younger children, uses wording very similar to the self-report questionnaire, allowing for direct comparability of items across the two versions. Therefore, unlike other victimization instruments, the present questionnaire allows direct comparisons of victimization experiences across the full range of childhood and adolescence.

Both self-report and caregiver versions show good test–retest reliability and construct validity (Finkelhor, Hamby, Ormrod, & Turner, 2005). We acknowledge the possibility that caregivers may be less willing to disclose incidents of victimization in cases where the caregiver interviewed is him/herself a perpetrator. However, evidence suggests that proxy reports, even by caregivers, yield considerably higher rates of child maltreatment than those based on official case reports (Straus, 1990). Moreover, recent research shows moderate correspondence between parent reports of young child maltreatment and later reports by youths of that same maltreatment (Tajima, Herrenkohi, Huang, & Whitney, 2004), suggesting that parent reports (even by perpetrators) may not be as biased as is often assumed. It is also important to remember that even if parent respondents under-report incidents that they themselves perpetrate, they may still be accurate reporters of the large array of other types of victimizations involving other family and non-family perpetrators. In fact, in the current study, there were no major discontinuities between self-reports and proxy reports, suggesting that caregivers provided generally comparable information to child self-reports about the experiences of children under the age of 10. The only small discrepancy in rates showed lower overall rates of victimization for self-reporting 10 and 11 year olds than for 8 and 9 year olds where caregivers provided information (Finkelhor, Hamby et al., 2005). Therefore, in this sample, there appears to be more evidence of possible recall or disclosure problems among the younger self-reporting respondents than among caregivers.

The data used in the present study are based on a subset of 20 offenses against youth that cover four general domains of victimization: child maltreatment (physical abuse and neglect by caregivers; 4 items), sexual victimization (8 items), witnessing family violence (2 items), and other major direct and indirect violence exposure (6 items). Questions were modified from the original format (1-year time frame) to obtain lifetime exposure to specific victimization events. Specific screener items comprising each victimization domain are presented in Appendix A. Follow-up questions for each screener item (not shown) gathered additional information needed to classify event types, including perpetrator characteristics, the use of a weapon, whether injury resulted, and whether the event occurred in conjunction with another screener event. Summary measures of each of the four domains were constructed, each representing a composite index of exposure to each category of victimization. For example, lifetime exposure to witnessing domestic violence ranges from 0 to 2 with maximum scores indicating that the respondent had both seen a parent "get pushed, slapped, hit, punched or beat-up" by another parent at least once in their lifetimes *and* had seen a parent "hit, beat, kick, or physically hurt a brother or sister, not including a spanking on the bottom" at least once in their lifetimes. Therefore, higher scores within and across domains indicate greater exposure to multiple forms of victimization.

Note that these measures do not incorporate frequency of exposure within a specific type of event, but instead focus on exposure to multiple forms of victimization within general victimization domains. This measurement strategy is based on earlier research indicating substantially greater risk associated with multiple or "poly-victimization" relative to chronic exposure within individual forms of victimization (Finkelhor et al., 2004). In fact, attempts to weight multiple victimization by the frequency of victimization incidents within specific types, does not significantly increase its association with mental health outcomes (Finkelhor, Hamby et al., 2005).

Non-victimization trauma and adversity: Cumulative adversity in childhood was assessed by a comprehensive measure that includes 15 non-violent traumatic events and chronic stressors. If a specific stressor had occurred or was present at least once in the respondent's lifetime, they were given a code of 1 on that item. Items included: (a) non-victimization traumas such as serious illnesses, accidents, parent imprisonment, and natural disasters; and (b) more chronic adversities, like substance abuse by family members, parental arguing, and chronic teasing about physical appearance. The full list of traumas/adversities and their exact wording is presented in Appendix A. A summary count of total lifetime exposure to non-violent traumas and adversities was constructed. Higher scores indicate greater exposure to different forms of adversity.

Child mental health: Depression and anger/aggression components of the Trauma Symptom Checklist were administered to the 10–17 old respondents. These same components of the Trauma Symptom Checklist for Young Children were administered to caregivers of the 2–9 year old respondents. Both checklists were designed to evaluate children's responses to unspecified traumatic events in different symptom domains. In the self-report version, youth are presented with a list of thoughts, feelings and behaviors and asked to indicate how often each of these things happened to him or her in the last month. In the case of the younger child version, the caregiver indicates the frequency of symptoms displayed by their young child. In both versions, each item was rated on a 4-point scale ranging from 0 (not at all) to 4 (very often).

All components of the older child version have shown very good reliability and validity in both population-based and clinical samples (Briere, 1996). In the present study, alpha coefficients were .82 for the depression subscale (9 items) and .87 for the anger/aggression subscale (9 items). Although developed more recently, the caregiver report version for younger children has

also shown good psychometric properties (Briere et al., 2001). In the present study, the alpha coefficients were .72 for the depression subscale (9 items), and .83 for the anger/aggression subscale (9 items).

Socio-demographic factors: All demographic information was obtained in the initial parent interview, including the child's age (in years), race/ethnicity (coded into 4 groups: white, Black non-Hispanic, Hispanic any race, and other race), and current family structure (coded into 3 groups: child living with two biological or adoptive parents, child living with one biological parent and a stepparent or unmarried partner, and child living with a single parent). Regression analyses also include a measure of SES, constructed as a composite of household income and parental education. Household income is total 2002 income, including all wages, public assistance and child support (10 categories: ranging from $5000 or less to more than $100,000). Parental education (11 categories: ranging from grade school or less to graduate degree) represents the parent in the household with the highest level of education. The SES composite is based on the sum of the standardized income and standardized parental education scores, which this then re-standardized. In cases where the data for one of the SES indices (most often income) was missing, the SES score is based on the standard score of the remaining index. In all regression analyses, gender is a dichotomous variable (female = 1), white is the comparison group for race/ethnicity, and living with two biological/adoptive parents is the comparison group for family structure.

Results

Social distribution of childhood victimization

First, we determined the distribution of lifetime victimization and adversity in this national sample of 2–17 year olds across different socio-demographic characteristics. Given differences in data source (caregivers vs. youth) in the samples of 2–9 and 10–17 year olds, all analyses were conducted separately for the two age groups. Tables 1 and 2 report analysis of variance results for the four victimization domains and other adversity across gender, race/ethnicity, parental education, household income, family structure, and age group.

As can be see in Table 1, there were group differences across all statuses except gender. Blacks reported significantly higher exposure to witnessing family violence than did the other race and ethnic groups. Lifetime exposure to other major violence and

Table 1
Mean number of lifetime victimization/adversity types for children age 2–9 by demographic characteristics

	Sexual assault	Child maltreatment	Witnessing family violence	Other major violence	Non-victimization adversity
Sex	NS	NS	NS	NS	NS
Males	.05	.20	.09	.11	1.62
Females	.04	.19	.13	.10	1.72
Race	NS	NS	**	***	**
White	.04	.21	.09	.06	1.58
Black	.07	.23	.20	.23	2.01
Hispanic	.03	.11	.09	.17	1.80
Other race	.03	.19	.06	.06	1.09
Parental education:	NS	**	**	***	***
HS grad and lower	.04	.27	.16	.17	2.01
Some college/college grad.	.05	.18	.09	.09	1.62
Post-graduate	.03	.11	.08	.04	1.30
Income	NS	**	***	***	***
<$20,000	.07	.34	.26	.33	2.69
$20–$50,000	.04	.19	.09	.12	1.74
Over $50,000	.04	.15	.08	.04	1.36
Family structure	***	***	***	***	***
2 bio parents	.03	.11	.04	.06	1.32
Stepfamily	.13	.51	.37	.19	2.84
Single parent	.08	.43	.29	.26	2.68
Total sample mean	.04	.19	.11	.11	1.67

Table 2
Mean number of lifetime victimization/adversity types for youth age 10–17 by demographic characteristics

	Sexual assault	Child maltreatment	Witnessing family violence	Other major violence	Non-victimization adversity
Sex	**	NS	NS	NS	NS
Males	.27	.33	.13	.34	3.43
Females	.40	.38	.14	.39	3.34
Race	**	*	**	***	***
White	.30	.32	.12	.27	3.22
Black	.38	.33	.12	.55	3.66
Hispanic	.46	.51	.15	.57	3.86
Other race	.12	.32	.23	.35	2.94
Parental education:	**	NS	*	*	***
HS grad and lower	.44	.39	.18	.45	3.79
Some college/college grad.	.29	.36	.13	.35	3.34
Post-graduate	.29	.29	.09	.27	2.87
Income	NS	NS	***	**	***
<$20,000	.39	.36	.26	.56	4.01
$20–$50,000	.34	.38	.15	.40	3.45
Over $50,000	.30	.33	.10	.31	3.21
Family structure	***	***	***	***	***
2 bio parents	.30	.27	.01	.28	3.02
Stepfamily	.44	.68	.25	.34	4.18
Single parent	.36	.39	.19	.62	3.88
Total sample mean	.33	.35	.14	.37	3.38

non-victimization adversity was significantly greater among both Black and Hispanic children relative to whites. Having parents with high school education or lower and family incomes under $20,000 were associated with greater exposure to child maltreatment, witnessing family violence and other major violence relative to the higher education and income groups. One of the strongest and most consistent group differences in victimization and adversity exposure were observed across variations in family structure. For all five domains considered, children currently living in single parent and stepfamilies had significantly greater lifetime exposure than those living with two biological or adoptive parents.

Table 2 reports these same analyses for youth age 10–17. Females reported greater exposure to sexual victimization. Significant race/ethnic differences in lifetime exposure were evident for all five domains. Sexual victimization and child maltreatment was greatest among Hispanics, while both Black and Hispanic youth reported greater major violence and non-victimization adversity relative to whites and other races. In general, the youth in the lowest income households and/or the lowest parental education category reported the greatest sexual victimization, child maltreatment, witnessing family violence, other major violence, and non-victimization adversity. Consistent with the younger sample, there were also dramatic variations in victimization and adversity for the 10–17 year olds living in different family structures. Youth in both stepfamilies and single parent families consistently show elevated risk for all types of stress exposure.

Impact of cumulative exposure to victimization and adversity

Fig. 1 illustrates the effect of cumulative exposure to victimization and non-victimization adversity in the two samples, controlling for respondent's age. Mean levels of depression and anger/aggression are compared across groups with varying levels (counts) of victimization and adversity. It is clear in each graph that a relationship exists between number of major stressors experienced in the child's lifetime and his/her current level of symptomatology ($p < .001$). For example, among 2–9 year olds, those who had experienced no victimizations had a mean score of 1.6 on depression while those reporting 4 or more different victimization events scored on average 5.9 on the depression measure. A similar association was evident with respect to number of victimizations and anger/aggression; 2–9 year old with no victimization exposure had an average score of 2.7, while those

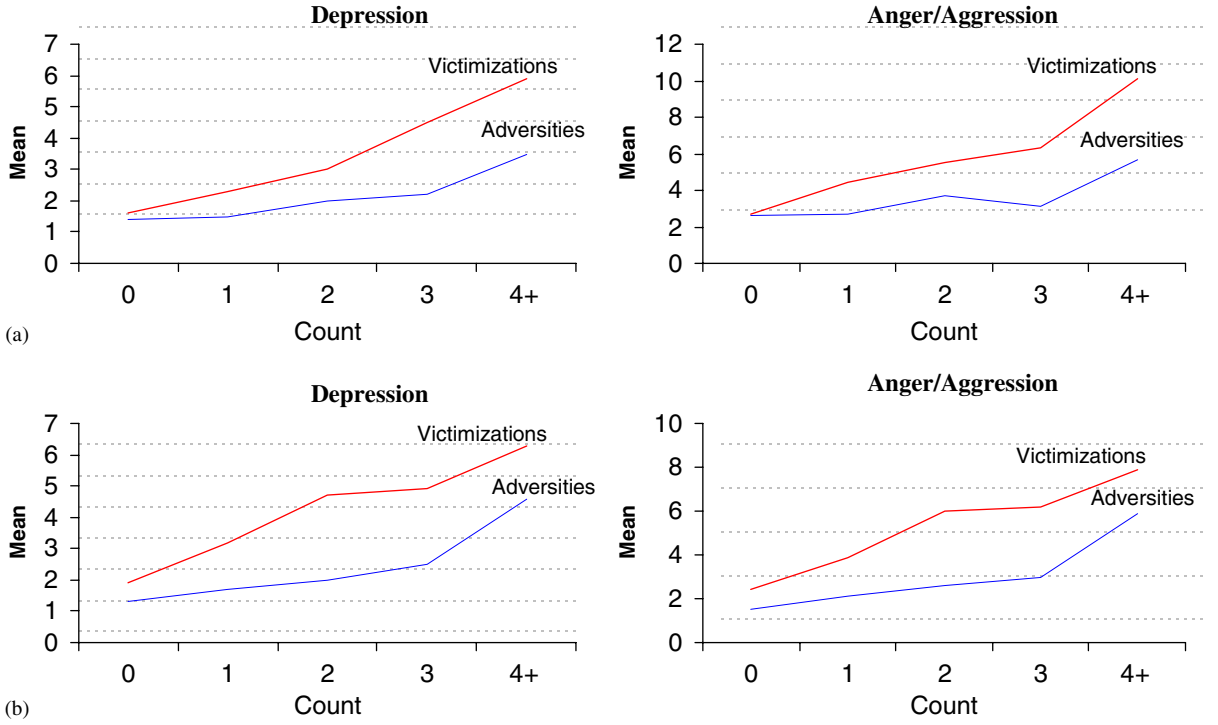

Fig. 1. Current symptoms levels across total lifetime victimization and adversity counts, controlling for victim age. (a) 2–9 year old sample, and (b) 10–17 year old sample.

experiencing 4 or more victimizations scored 10.1 on anger/aggression.

Among 10–17 year olds, respondents reporting no victimizations had an average score of 1.9 on depression and 2.4 on the anger/aggression measure. Those experiencing at least 4 types of victimization, however, scored 6.3 and 7.9 (respectively) on these outcomes. Similar but somewhat less dramatic patterns are evident with respect to non-victimization adversities. Although number of adversities was clearly related to both outcomes in both samples, victimizations were associated with more symptoms than were non-victimization adversities at each count level.

With a few exceptions, pair-wise comparisons cross victimization counts revealed statistically significant mean differences (at $p<.05$) in both depression and anger/aggression. Therefore, while symptoms increased most rapidly among the highest victimization group, in most cases, the effect of victimization increased with each additional type of exposure.

Independent and relative effects of victimization and adversity

An examination of bivariate correlations among victimization domains (not shown) reveals clear associations across these different types of experiences. In fact, each type of victimization was significantly related to each of the other victimization domains, with correlations ranging from .13 to .41 among the 2–9 year olds and .28 to .47 within the adolescent sample. The highest correlations were between child maltreatment and witnessing family violence in both samples, suggesting that child abuse and neglect often co-occurs with spousal abuse. Substantial bivariate associations also existed between each type of victimization and non-victimization adversity, with correlations ranging from .19 to .44 across the two samples.

Multiple regression analyses were performed to examine the independent and relative effects of each type of victimization on mental health, and to determine whether exposure to non-victimization adversity helps to account for victimization associations. Table 3 presents findings for depression and anger/aggression among 2–9 year olds. As seen in the first equation, age was positively associated with depression, and both blacks and Hispanics reported lower depression than whites with other demographic factors controlled. Children in both single parent families and stepfamilies were more depressed than those living with two biological or adoptive parents. In the second step, the four victimization domains were entered into the equation. All four types of victimization (sexual victimization, child maltreatment, witnessing family violence, and other major

Table 3
Effects of victimization and adversity on depression and anger/aggression among 2–9 year olds: standardized regression coefficients

	Depression			Anger/Aggression		
	Eq. (1)	Eq. (2)	Eq. (3)	Eq. (1)	Eq. (2)	Eq. (3)
Gender (female = 1)	.015	.012	.008	−.079**	−.084**	−.089***
Age	.141***	.098***	.070*	−.238***	−.279***	−.305***
Black[a]	−.082*	−.085**	−.077*	−.037	−.033	−.026
Hispanic[a]	−.104***	−.088**	−.091**	−.053	−.029	−.032
Other race[a]	−.023	−.023	−.003	−.014	−.008	.005
Socioeconomic status	−.034	.000	.010	−.013	.016	.025
Single parent[b]	.145***	.029	.002	.129***	.007	−.017
Step family[b]	.124***	.036	.019	.102***	.006	−.010
Sexual assault		.066*	.053		.059*	.047
Child maltreatment		.233***	.191***		.255***	.216***
Witness fam. violence		.133***	.079*		.165***	.116***
Other major violence		.153***	.099**		.094**	.045
Non-victimiz. adversity			.229***			.210***
Adjusted R^2	.058	.194	.228	.073	.213	.241

*$p<.05$; **$p<.01$; ***$p<.001$ (two-tailed tests) $N = 993$.
[a]Comparison group = white non-Hispanic.
[b]Comparison group = two biological/adoptive parents.

violence) had significant independent effects on depression, with child maltreatment having the strongest positive coefficient. While age and race remained significant predictors, lifetime exposure to victimization fully explained differences in depression across family structure. When non-victimization adversity was added to the model (Eq. (3)), it also showed a strong independent effect on depression. Although exposure to non-victimization stressors accounted for part of each victimization-depression association, all victimizations but sexual assault remained statistically significant. The final model explains almost 23 percent of the variance in depression.

The second half of Table 3 shows the same hierarchical regression analyses with anger/aggression as the dependent variable. As seen in Eq. (1), gender, age and family structure were significant predictors when other demographic factors were controlled. Females and older children were less angry/aggressive while children living in single parent and stepfamilies scored higher on this outcome. When exposure to the four victimization types were entered into the equation, they each showed independent positive effects and entirely accounted for the elevated levels of anger/aggression among children in single parent and stepfamilies. Finally, non-victimization adversity was added to the model, again showing a relatively strong independent effect. When this variable was controlled, the coefficients for sexual victimization and other major violence were no longer statistically significant. Over 24 percent of the variance in anger/aggression was accounted for in the final model.

Table 4 presents the same set of regression analyses for the 10–17 year old respondents. As seen in the first equation, females and youth lower in SES reported more symptoms of depression, when other demographic factors were controlled. While youth in single parent families did not differ on depression from those living with two biological/adoptive parents, adolescents in stepfamilies had significantly higher levels of depression. In the next equation, the four victimization domains were added to the model. All victimization coefficients, except witnessing family violence, had significant independent associations with depression. As with the younger sample, child maltreatment represented the strongest predictor. Exposure to victimization reduced to non-significance the association between living in a stepfamily and depressive symptoms. The gender association was also no longer statistically significant, likely explained by adolescent girls' greater exposure to sexual assault (see Table 2). In Eq. (3), non-victimization adversity was added, showing a moderately strong independent association with depression. While "other major violence" was no longer significant, both child maltreatment and sexual victimization remained substantial predictors of depression when other adversity was controlled. SES also remained significant even when all stress exposure was held constant. The significance and increasing strength of the age coefficient across the three equations, suggests that a negative association between age and depression in this sample was "suppressed" by the higher levels of victimization and adversity experienced by older adolescents. With all the

Table 4
Effects of victimization and adversity on depression and anger/aggression among 10–17 year olds: standardized regression coefficients

	Depression			Anger/Aggression		
	Eq. (1)	Eq. (2)	Eq. (3)	Eq. (1)	Eq. (2)	Eq. (3)
Gender (female = 1)	.065*	.040	.050	−.033	−.061*	−.049
Age	.045	−.072 *	−.099***	.140***	.008	.024
Black[a]	−.017	−.030	−.032	.049	.027	.026
Hispanic[a]	.038	−.002	−.003	.080*	.031	.029
Other race[a]	−.015	−.053	−.047	−.048	−.052	−.046
Socioeconomic status	−.138***	−.111***	−.91**	−.160***	−.128***	−.104***
Single parent[b]	.015	−.017	−.029	−.006	−.052	−.065*
Step family[b]	.113***	.048	.024	.093**	.037	.009
Sexual assault		.154***	.127***		.162***	.130***
Child maltreatment		.243***	.197***		.179***	.124***
Witness fam. violence		.018	−.019		.030	−.013
Other major violence		.079*	.016		.182***	.107***
Non-victimiz. adversity			.245***			.289***
Adjusted R^2	.038	.162	.200	.062	.206	.259

*$p<.05$; **$p<.01$; ***$p<.001$ (two-tailed tests) $N = 1000$.
[a]Comparison group = white non-Hispanic.
[b]Comparison group = two biological/adoptive parents.

variables in the equation, 20 percent of variance in depression was explained.

The pattern of associations is quite similar when considering anger/aggression as the outcome. As seen in Eq. (1), older adolescents, Hispanics relative to whites, those with lower SES, and children living in stepfamilies had higher levels of depression. When the four victimization types were entered into the equation, sexual victimization, child maltreatment, and other major violence each had independent positive effects on anger/aggression. While SES remained significant, victimization experiences fully accounted for the age and stepfamily associations. Finally, when lifetime exposure to non-victimization adversity was added, it was by far the strongest predictor. However, the same victimization domains and socioeconomic status continue to have independent effects. The final model accounted for almost 26 percent of the variance in anger/aggression.

Discussion

This research considered child victimization as stressful events or conditions that may combine and accumulate to increase the risk of mental illness. Unlike earlier studies in this area, we focused on a wide range of victimization experiences and took into consideration a broader context of adversity that is likely to accompany exposure to victimization. A number of valuable findings emerged from this work.

First, we were able to document associations between social status and childhood victimization and adversity. As would be anticipated within the stress process framework, exposure to this form of stress is clearly regulated by structural factors. In general, racial and ethnic minorities, children in low income households and who have parents with lower education, and those living with single parents or stepparents, experienced more types of victimization and were more often exposed to other form of adversity than were higher status children. Structural disadvantage, reflected in exposure to victimization and other forms of adversity, appears to begin very early in life and accumulates throughout childhood.

Also clear from this research are the negative mental health implications of victimization experiences and other forms of adversity. While most past studies have focused on the consequences of individual forms of victimization, such as sexual abuse, it is apparent from the current research that different forms of victimization and other major childhood stressors all have independent effects on both internalizing symptoms of depression and on externalizing feelings and behaviors, like anger and aggression. This suggests that focusing on only recent victimization experiences or considering only one or two forms of victimization would fail to capture the full impact of these stressors on mental health. Moreover, our findings show that different forms of victimization are interrelated such that children who experience one type are also likely to be exposed to other forms of victimization. Therefore, studies that consider

only single categories of victimization may often attribute mental health consequences to particular traumatic events when, in fact, the outcome is associated with a combination of different victimization experiences. Also, given the associations between victimization exposure and non-victimization adversity, outcomes associated with individual victimizations may also reflect a broader context of adversity.

Multivariate analyses revealed a number of direct and mediating effects and allowed us to determine the relative impact of different forms of victimization on child mental health. The most consistent findings across both samples and outcomes concerned the effect of family structure on mental health. Children living in stepfamilies or (among younger children) single parents reported both more depression and more anger than those living with two biological or adoptive parents, independent of race and socioeconomic status. However, these associations were fully explained by victimization exposure. Thus, children in single parent and stepfamilies have greater lifetime exposure to all forms of victimization, which in turn, increases their risk for mental health problems. Since our measure included victimization events that may have occurred at any time in the respondent's life, it is possible that some of the elevated victimization associated with these family structures reflects problems occurring prior (and perhaps even contributing) to a divorce. However, analyses that consider only victimizations occurring with the last year (not shown) also reveal greater victimization among children living with single parent and stepfamilies. Therefore, it appears that there may be something inherent in these family structures or in the characteristics of divorcing parents that increases risk for child victimization.

Our findings concerning elevated exposure to child victimization in single parent families is consistent with results of the National Crime Victimization Survey (Lauritsen, 2003). However, those findings did not distinguish stepfamily arrangements from families with two biological or adoptive parents. Similar to Finkelhor and Asdigian (1996), we found that the presence of a stepparent in the household was equally or (among adolescents) even more "risky" than single parent structures for victimization exposure. Given that victimization exposure explained the lower well-being among youth living in stepfamilies, we believe that stepfamilies may be an important target of intervention. Future research should attempt to specify the contextual and relational conditions within stepfamilies that account for the elevated risk of victimization.

An important finding from this research concerns the independent impact of different forms of victimization. Except for 'witnessing family violence' among the 10–17 year olds, all four types of victimization (sexual victimization, child maltreatment, witnessing family violence and other major violence) had significant effects on both depression and anger/aggression, with the other victimization domains controlled. Therefore, while different forms of victimization frequently co-occur, they each make unique additional contributions toward increased risk for mental health problems. In most cases, child maltreatment (physical abuse or neglect by a caregiver) is the form of victimization that has the strongest independent association with depression and anger/aggression.

There is a large literature suggesting that exposure to stress and adversity, even when it does not include victimization, is likely to substantially influence child well-being. Since victimization often occurs within a more general context of child and family stress, we assessed the independent effects of non-victimization adversity and considered its potential impact on the associations between the different forms of victimization and mental health. We found that cumulative exposure to non-victimization adversity did indeed have an independent effect on depression and anger in both samples, and that the magnitude of these associations typically matched or exceeded the independent effects of child maltreatment. Moreover, non-victimization adversity accounted for a portion of each of the victimization-outcome associations. In the large majority of cases, however, victimization coefficients remained statistically significant when non-victimization adversity was held constant. Therefore, while victimization exposure typically occurs in the context of other environmental stressors, cumulative exposure to victimization makes unique and substantial contributions to children's mental health.

Some limitations of this study should be noted. As with any survey requiring retrospective accounts of events, difficulties in recall may underestimate rates of victimization. However, given the relatively short recall period for lifetime events among young people and the severity of most of the events involved, they may be less likely to be forgotten in the face of specific questions. More problematic is the potential for recall bias whereby children who are currently distressed are more likely to remember or report past victimization experiences. Such bias would serve to inflate associations between victimization and distress. While some researchers have avoided this potential problem by using child maltreatment court cases as indicators of victimization and matched community controls as non-victimized comparisons (e.g. Horowitz, Widom, McLaughlin, & White, 2001), this method is disadvantaged by the very large proportion of victimization incidents that are not brought to attention of authorities. Finally, the current research would be strengthened by longitudinal data, allowing us to control for the possibility that symptomatology may also contribute to victimization exposure. Data collected across two or more measurement points

would also improve our ability to accurately assess cumulative victimization exposure over time and the determinants and outcomes of such exposure for children.

Appendix A. Victimization screener questions[1]

Sexual assault

(SA1) At any time in your life, did a grown-up you knew touch your private parts when you didn't want it, or make you touch their private parts? Or did a grown-up you knew force you to have sex?

(SA2) At any time in your life, did a grown-up you did not know touch your private parts when you didn't want it, make you touch their private parts or force you to have sex?

(SA3) At any time in your life, did a child or teen (like a kid from school, a boyfriend or girlfriend, or even a brother or sister), make you do sexual things?

(SA4) At any time in your life, did anyone try to force you to have sex, that is sexual intercourse of any kind, even if it didn't happen?

(SA5) At any time in your life, did someone make you look at their private parts by using force or surprise, or by "flashing" you?

(SA6) At any time in your life, did anyone hurt your feelings by saying or writing something sexual about you or your body?

[SA 7 and SA8 only asked if respondent is 12 or older]

(SA7) At anytime in your life, did you do sexual things with anyone 18 or older, even things you both wanted?

(SA8) At any time in your life, did a boyfriend or girlfriend or someone you went on a date with ever slap or hit you?

Child maltreatment

Next, we ask about grown-ups who take care of you. This means parents, babysitters, adults who live with you, or others who watch you.

(CM1) Not including spanking on your bottom, at any time in your life, has a grown-up in your life ever hit, beat, kick, or physically hurt you in anyway?

(CM2) At any time in your life, did you ever get scared or feel really bad because the grown-ups in your life called you names, said mean things to you, or said they didn't want you?

(CM3) When someone is neglected, it means that the grown-ups in their life didn't take care of them the way they should. They might not get them enough food, take them to the doctor when they are sick, or make sure they have a safe place to stay. Was there ever a time in your life when you were neglected?

(CM4) Was there ever a time in your life when a parent took you, kept you, or hid you, to stop you from being with another parent?

Witnessing family violence

(WF1) At any time in your life, did you SEE one of your parents get pushed, slapped, hit, punched or beat up by another parent or their boyfriend or girlfriend?

(WF2) At any time in your life, did you SEE your parent hit, beat, kick or physically hurt your brothers or sisters, not including a spanking on the bottom?

Other major violence

(OM1) When a person is kidnapped, it means they were made to go somewhere, like into a car, by someone who they thought might hurt them. Has anyone ever tried to kidnap you?

(OM2) When a person is murdered, it means someone killed them on purpose. Has anyone close to you, like in your family, a friend, or neighbor, ever been murdered?

(OM3) Have you ever seen someone murdered in real life? This means not on TV, video games, or in the movies?

(OM4) Have you ever been hit or attacked because of your skin color, religion, or where your family comes from? Because of a physical problem you have? Or because someone said you are gay?

(OM5) Have you ever been in a place in real life where you could see or hear people being shot, bombs going off, or street riots?

(OM6) Have you ever been in the middle of a war where you could hear real fighting with guns or bombs?

Non-victimization adversity

(KA1) In your whole life, were you ever in a VERY BAD fire, explosion, flood, tornado, hurricane, earthquake or other disaster?

(KA2) Were you ever in a VERY BAD accident (at home, school, or in a car) where you had to be in the hospital for many days? This would be a time that you were very hurt and needed to spend a long time in the hospital. Has that ever happened?

(KA3) Did you ever have a VERY BAD illness where you had to be in the hospital for many days? This could be a time when you were so sick that you had to be in the hospital a lot? Has that ever happened?

(KA4) Has someone you were really close to ever had a VERY BAD accident where he or she had to be in the hospital for many days? This would be someone

[1]In caregiver version of the screeners "you" is replaced with "your child".

important to you, like a parent, brother or sister, or best friend.

(KA5) Has someone you were really close to ever had a VERY BAD illness where he or she had to be in the hospital a lot? Again, this would be someone important to you, like a parent, brother or sister, or best friend.

(KA6) Was there ever a time in your life when your family had to live on the street or in a shelter because they had no other place to stay?

(KA7) Did you ever have to do a school year over again?

(KA8) Have there ever been any times when your mother, father, or guardian lost a job or couldn't find work?

(KA9) Were you ever sent away or taken away from your family for any reason?

(KA10) At any time in your life did either of your parents, a stepparent, or guardian ever have to go to prison?

(KA11) Have you ever seen a dead body in someone's house, on the street, or somewhere in your neighborhood (other than at a funeral)?

(KA12) Has there ever been a time that a family member drank or used drugs so often that it caused problems?

(KA13) Has there ever been a time when your parents or stepparents were ALWAYS arguing, yelling, and angry at one another a lot of the time?

(KA14) Was there ever a time when you were always being teased about how you looked, because of something like a physical disability, a weight problem, having a problem with pimples, or needing to wear glasses?

(KA15) Has anyone really close to you ever died?

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