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# Polyvictimization, Childhood Victimization, and Psychological Distress in College Women

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Two studies examined the relationships among polyvictimization (i.e., high cumulative levels of victimization), six categories of childhood victimization (i.e., property crime, physical assault, peer/sibling, witnessed/indirect, sexual, and child maltreatment), and current psychological symptomatology in college females. Results indicated that exposure to multiple types of childhood victimization is common. Regression analyses revealed that polyvictimization accounted for a significant proportion of variability in scores for psychological distress beyond that accounted for by any victimization category alone. Moreover, the six categories separately accounted for little to no variability beyond that accounted for by polyvictimization. Finally, polyvictimization accounted for a significant proportion of variability in scores for psychological distress, beyond that already accounted for through the simultaneous entry of all six categories of victimization. Findings reiterate the importance for clinicians and researchers to comprehensively assess multiple categories of childhood victimization and polyvictimization and provide preliminary evidence that the total number of lifetime victimizations is at least as important, if not more important, than individual categories of victimization in predicting psychological distress.

**Keywords:** *adult survivors; long-term effects; adult retrospective reports; child victims; polyvictimization; multiple victimization; cumulative adversity; multitype maltreatment*

Many types of childhood victimization are distressingly common social problems that affect substantial segments of the population. Previous research has established clear links between many individual categories of victimization, such as childhood sexual victimization, and psychological and physical health problems in adulthood (e.g., Berliner & Elliott, 2002). A variety of studies also have identified negative outcomes associated with a history of two or more different categories of childhood maltreatment (e.g., Higgins & McCabe, 2001). A relatively new area of research examines the relationships between polyvictimization (i.e., high cumulative levels of victimization) and psychological functioning (e.g., Finkelhor, Ormrod, & Turner, 2007a). The present article reports results from two studies using multiple regression analyses to examine (a) the relative contributions of polyvictimization and six aggregate categories of childhood victimization in predicting psychological distress in a sample of college women, and (b) whether

polyvictimization contributed significant unique variance, beyond that accounted for by the combination of all six aggregate categories of victimization.

## Childhood Victimization and Psychological Distress

According to Finkelhor (2008), “children are arguably the most criminally victimized people in society” (p. 3). In support of this claim, he summarizes statistics provided by the National Crime Victimization Survey from the U.S. federal government which indicate that juveniles are more likely than adults to experience a variety of violent crimes

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including rape, robbery, aggravated assault, and simple assault. They also experience higher rates of injury following victimization. However, in addition to criminal victimizations, children also experience other kinds of child maltreatment and noncriminal victimization experiences that may negatively impact their adjustment. For example, although bullying and assaults by siblings and peers are relatively common and often are not regarded as serious events in childhood, similar assaults in adulthood would be considered a crime. In light of evidence suggesting that such childhood victimization experiences are relatively common and may be associated with a variety of psychological difficulties (Duncan, 1999), it is important to develop a better understanding of psychological difficulties associated with a broad range of criminal and noncriminal victimization experiences.

Considerable research has examined the association between psychological distress and various categories of child maltreatment such as sexual victimization (e.g., Berliner & Elliott, 2002), physical abuse (e.g., Kolko, 2002), psychological maltreatment (e.g., Hart, Brassard, Binggeli, & Davidson, 2002), and neglect (e.g., Erickson & Egeland, 2002). Although specific findings vary across studies, numerous psychological correlates have been associated with each category of childhood maltreatment. Unfortunately, researchers and practitioners often specialize in just one category of child maltreatment (e.g., sexual abuse, physical abuse), which results in "little sharing of knowledge, assumptions, methods, clinical and research approaches, and other types of cross-fertilization between these unitary fields" (Saunders, 2003, p. 367). As a result, the vast majority of studies of childhood maltreatment have focused exclusively on one category of victimization, and relatively few studies have assessed the extent to which participants were exposed to multiple categories of maltreatment (Arata, Langhinrichsen-Rohling, Bowers, & O'Farrill-Swails, 2005; Higgins & McCabe, 2001; Kinard, 1994; Rosenberg, 1987). In fact, although numerous measures of child maltreatment and other forms of juvenile victimization exist, most assess only one category of victimization and do not systematically assess other forms as well (Hamby & Finkelhor, 2000). Finkelhor, Ormrod, Turner, and Hamby (2005a) suggest that studies examining only one or a few categories of victimization likely underestimate the true "burden of victimization that young people experience" (p. 5) and fail to show how different categories of victimization are interrelated. At the same time, such studies may overestimate the impact of the single category of victimization under investigation (Finkelhor, Ormrod, & Turner, 2007b). In other words, studies that examine only one category of victimization imply that

psychological distress reported by participants occurred as a result of the specific category being studied and often fail to consider the impact of other categories of victimization that are not assessed. To obtain a more complete understanding of the impact of childhood victimization, it is necessary for both clinicians and researchers to use assessment instruments which assess a broad range of categories of childhood maltreatment and other forms of juvenile victimization.

In the last decade, the number of studies that simultaneously examine exposure to multiple categories of child maltreatment has increased (Higgins & McCabe, 2000a). These studies provide strong evidence that individuals who have experienced one category of victimization are likely to have experienced additional categories as well (Arata et al., 2005; Briere & Runtz, 1988; Higgins & McCabe, 1998, 2000b, 2001; Ney, Fung, & Wickett, 1994; Rossman & Rosenberg, 1998). They also suggest that individuals who have experienced multiple categories of childhood maltreatment experience greater impairment than do those who have been exposed to only a single category of maltreatment (Arata, Langhinrichsen-Rohling, Bowers, & O'Brien, 2007; Higgins & McCabe, 2001; Ney et al., 1994).

## **Polyvictimization and Psychological Distress**

More recently, Finkelhor et al. (2007a, 2007b) conducted a series of studies examining polyvictimization in children. Unlike many prior studies which focused on the number and/or severity of broad categories of victimization, such as sexual abuse and physical abuse, the construct of polyvictimization emphasizes the total number of different individual types of victimization that participants have experienced, regardless of the broad category with which each type is associated. For example, one individual may have experienced four different types of peer/sibling abuse. Another individual may have experienced two different types of physical assault (e.g., assault with a weapon, dating violence) and two different types of sexual assault (e.g., sexual assault by an unknown adult, sexual assault by a peer), for a total of four different types of victimization across the broad categories of physical and sexual assault. To assess both polyvictimization, as well as broad categories of juvenile victimization, Finkelhor, Hamby, Ormrod, and Turner (2005) designed the Juvenile Victimization Questionnaire (JVQ). This measure is broader in scope than questionnaires commonly used in past studies because, in addition to assessing various categories of child maltreatment (sexual, physical), it also

includes other categories of juvenile victimization such as property crime and peer/sibling victimization.

Recent studies by Finkelhor and colleagues (2005a, 2007b) provide strong evidence that high levels of polyvictimization contribute significantly to psychological distress in children. In a national study of victimization in children and youth, Finkelhor et al. (2005a) assessed the 1-year incidence of 34 different types of juvenile victimization in 2,030 male and female participants between the ages of 2 and 17. Seventy-one percent of participants reported experiencing at least one of the 34 different types of victimization assessed by the JVQ within the last year. A majority of participants (53%) had experienced a physical assault, 35.7% had witnessed violence or experienced another type of indirect victimization, 27.3% had experienced a property victimization, 13.6% had experienced a type of child maltreatment, and 8.2% had experienced a sexual victimization.

In a follow-up study, Finkelhor et al. (2007b) used separate multiple regression equations to predict trauma symptoms from each of the six aggregate victimization categories (i.e., sexual victimization, child maltreatment, property victimization, witnessed/indirect victimization, physical assault, and peer/sibling victimization). For children aged 10 to 17, each of the six aggregate categories significantly predicted current trauma symptoms, even after controlling for lifetime adversity, lifetime victimization, and prior trauma symptoms. However, after polyvictimization was entered in the final block, only two aggregate categories remained significant (sexual victimization and child maltreatment). This study provides further support for the contention that studies assessing only a single category of victimization may overestimate the impact of that category (e.g., Arata et al., 2005; Briere & Runtz, 1990; Higgins & McCabe, 2001; McGee, Wolfe, & Wilson, 1997) and that measures of polyvictimization should be included in research concerning childhood victimization (Finkelhor et al., 2007a, 2007b).

In summary, there is mounting empirical evidence that polyvictimization accounts for a major portion of the variance in trauma symptoms among children, which previously has been attributed to single categories of victimization (e.g., Finkelhor et al., 2007a, 2007b). However, it is unclear whether this pattern of results would generalize to a sample of adult survivors of childhood victimization. It is also unclear whether polyvictimization would contribute any unique variance, beyond that accounted for by the simultaneous entry of all six aggregate categories when entered together in one block of predictors. A variety of recent studies have assessed the relationships between multiple categories of victimization and adult psychological functioning (see Higgins & McCabe, 2001

for a review). However, the present studies are the first which also assessed the relative contribution of polyvictimization in predicting adult psychological functioning using a lifetime retrospective approach, with a comprehensive measure of both childhood maltreatment and other forms of juvenile victimization.

This topic has important conceptual, methodological, and clinical implications. First, the study of polyvictimization could potentially provide an organizational framework which would improve our understanding of the large literature focusing on adult outcomes of separate categories of childhood victimization. In particular, this research could highlight the extent to which polyvictimization is a significant, yet relatively understudied, risk factor for long-term correlates of childhood victimization. Methodologically, there is considerable need to assess the potential utility of the adult retrospective version of the JVQ, a newly devised comprehensive assessment instrument that assesses exposure to a broad range of child maltreatment categories and other forms of juvenile victimization. Clinically, given the large number of adult survivors of childhood victimization seeking psychological services each year in both community and university settings, it is important for mental health professionals to be aware that high cumulative levels of victimization in childhood may be more strongly associated with a variety of psychological symptoms in adulthood than are any of the individual categories of victimization. Furthermore, increased understanding of polyvictimization as a significant risk factor for adult psychological distress could lead to improved assessment and treatment for trauma-related problems.

## Study 1

The purpose of this study was to examine the extent to which relationships between polyvictimization, childhood victimization, and psychological distress identified in Finkelhor et al.'s (2007b) study of children would generalize to a sample of adult survivors of childhood victimization. A series of hierarchical regression analyses were conducted to determine the relative contributions of polyvictimization and each individual category of childhood victimization in predicting psychological distress. It was hypothesized that (a) each individual category of victimization alone would account for little to no variability beyond that already accounted for by polyvictimization, and (b) polyvictimization would contribute a significant proportion of variability in predicting measures of psychological distress beyond that accounted for by any of the individual categories of childhood victimization alone.

Next, in Step 1 of a separate set of regression analyses, all six childhood victimization variables were entered simultaneously as a first block of predictors, and the unique contribution for each of these predictors was examined. Step 2 examined whether polyvictimization uniquely predicted psychological distress, beyond that accounted for by all six aggregate categories simultaneously.

## Method

### Participants

Three hundred and twenty-one female undergraduates from a mid-sized Southeastern university in the United States were recruited during the 2005-2006 academic year. Data from 10 participants were excluded because they had extensive missing or incomplete data. In the final sample of 311 women, participants ranged in age from 18 to 23 years ( $M = 19.1$ ,  $SD = 1.33$ ). The majority were White (88.4%), followed by African American (7.1%), Hispanic, Latino, or Chicano (1.3%), Asian or Pacific Islander (1.3%), American Indian (0.3%), and Other (1.6%). Approximately 48% of participants were first year students, 21.2% were second year, 17% were third year, 9.6% were fourth year, and 4.2% were fifth year or higher.

### Measures

The Demographics Questionnaire included questions about age, gender, academic standing, ethnicity, relationship status, and highest level of education completed by the participant's mother and father.

The Symptom Checklist 90-Revised (SCL-90-R; Derogatis, 1994) is a 90-item self-report measure that assesses psychological symptomatology and distress. Psychological distress was assessed using the Global Severity Index (GSI), as well as the nine symptom subscales: Somatization, Obsessive-Compulsive, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, Paranoid Ideation, and Psychoticism. Each of the 90 questions was rated on the basis of "How much that problem has distressed or bothered you during the past 7 days including today?" using a 5-point scale ranging from 0 (*not at all*) to 4 (*extremely*). Higher scores on the GSI and nine subscales indicate higher levels of distress. Considerable evidence supports the validity of the SCL-90-R (Derogatis, 1994). The internal consistency reliability for the nine subscales reported by Derogatis, Rickels, and Roche (1976) ranged from .77 to .90 and were similar to those found in the present study (.73-.89).

The Inventory of Altered Self-Capacities (IASC; Briere, 1998) is a 63-item self-report measure which assesses an

individual's ability to (a) form and maintain meaningful relationships, (b) maintain a sense of personal identity and self-awareness, and (c) control and tolerate strong (especially negative) affect. It was included in this study because problems in these areas often are observed in victims of childhood maltreatment. The IASC is comprised of seven scales: Interpersonal Conflicts, Idealization-Disillusioned, Abandonment Concerns, Identity Impairment (with two subscales: Self-Awareness and Identity Diffusion), Susceptibility to Influence, Affect Dysregulation (with two subscales: Affect Skills Deficits and Affect Instability), and Tension-Reduction Activities. Each question was rated according to its frequency of occurrence over the previous 6 months, using a 5-point scale ranging from 1 (*never*) to 5 (*very often*). Higher scores indicate greater pathology. According to Briere construct, convergent and discriminant validity were generally supported. In addition, the reliability alpha coefficient for the seven scales and four subscales ranged from .78 to .93, with an average alpha coefficient of .89. These are consistent with those found in the present study (.81-.92).

The Juvenile Victimization Questionnaire-Adult Retrospective Version is a 34-item self-report measure designed to gather information regarding a broad range of childhood victimizations (Hamby, Finkelhor, Ormrod, & Turner, 2004). The adult retrospective version contains behaviorally specific questions regarding 34 individual types of victimization that participants may have experienced during their childhood. For example, a question regarding physical abuse reads, "Not including spanking on your bottom, when you were a child, did a grown-up in your life hit, beat, kick, or physically hurt you in any way?" The JVQ assesses a broad range of victimizations, which vary in terms of both the frequency and the severity of the experience. For example, some questions assess relatively common yet potentially lower severity experiences (e.g., theft of personal items), whereas others assess relatively infrequent yet higher severity events (e.g., exposure to war). Although some of the victimizations assessed would not be regarded as a crime and might not be considered serious by many people (e.g., assaults by peers or siblings), Finkelhor et al. (2005a) report that they are included on the JVQ in light of evidence that such victimization experiences may nonetheless have serious consequences for some children. Participants report the number of times they experienced each offense from the time they were born until 17 years of age on a 6-point scale (*None*, *1 time*, *2 times*, *3 times*, *4 times*, or *5 or more times*). In Study 1, the researchers modified the age range to include experiences that occurred between the ages of 0 and 16 to facilitate comparison of the prevalence rates

obtained with the JVQ to those obtained in our previous studies of sexual victimization prior to age 16.

Six aggregate categories of victimization described by Finkelhor et al. (2007b) were constructed to indicate whether participants had experienced any victimization within each category (i.e., property crime, physical assault, child maltreatment, peer/sibling victimization, sexual victimization, and witnessed/indirect victimization). Although a variety of different methods for assigning participants to victimization categories have been reported in the literature, we adopted the approach used by Finkelhor et al. (2007b). Scoring was dichotomized into 1 (the participant answered *yes* one time or more to at least one of the questions making up the aggregate) or 0 (the participant answered *no* to all questions making up the aggregate). This dichotomous scoring approach reports the occurrence of *any* victimization within each aggregate and was used by Finkelhor et al. (2005) "because of potential overlap among items within an aggregate domain" (p. 393). Although one limitation of this approach to classifying victimization categories is that it does not allow for examination of the severity of the victimization experience as has been reported in some studies (e.g., Higgins & McCabe, 2000a), it was chosen because it allows a direct comparison of the results of this study with the results obtained by Finkelhor et al. (2007b).

Finally, a primary variable of interest in the present study was polyvictimization. For all analyses examining the relationship between polyvictimization and trauma symptoms, we used a continuous measure of polyvictimization which was calculated by adding the total number of the 34 different types of victimization that each participant reported. McGee et al. (1997) argue that continuous measures of victimization are preferable to arbitrarily dichotomizing children into categories such as "low abuse" versus "high abuse," because such broad categorizations "obscure the heterogeneity, severity, and co-occurrence of maltreatment experiences" (p. 132). Finkelhor, Ormrod, Turner, and Hamby (2005b) have described several possible ways of measuring polyvictimization. The method used in the present study is referred to as the *screeener sum version*, which simply counts the number of endorsed screener items and does not attempt to differentiate whether or not victimizations occurred as part of the same episode/incident (e.g., a robbery and assault occurring during the same incident would be counted as two victimizations).

To assess construct validity of the JVQ, Finkelhor et al. (2005) obtained correlations between the Trauma Symptom Checklist for Children and the JVQ. Moderate significant correlations were observed between the

trauma symptoms and each of the aggregate categories. Internal consistency for the aggregate categories, as measured by Cronbach's alpha, ranged from .35 for peer/sibling assault to .64 for physical assault, although one would not expect high alphas given that the items measure actual life events, rather than a psychological construct that reflects a unitary dimension. The internal reliability data for the present study using the adult retrospective version of the JVQ were comparable (range .54-.70) to those reported by Finkelhor et al. (2005) for the child version of the JVQ.

### Procedure

All aspects of the study were approved by the university's Institutional Review Board for the Protection of Human Subjects. Participants were recruited from introductory and upper-level psychology courses, for which they received extra credit. They were provided with an explanation of their role in the study and informed that their participation was voluntary and that they were free to leave at any time without penalty. Informed consent was then obtained. As part of a larger study which examined both physical health variables and psychological distress, participants completed the Demographics Questionnaire, several physical health measures, the JVQ, a Childhood Sexual Experiences Questionnaire, the SCL-90-R, and the IASC.

## Results

### Descriptive analyses

As seen in the first column of Table 1, 97% ( $N = 303$ ) of women who participated in this study endorsed at least one of the 34 behaviorally specific questions regarding individual types of childhood victimization assessed by the JVQ. The mean number of victimizations experienced by the women in our sample was 7.8 (ranging from 0 to 28). When the 34 individual types of victimization were collapsed into the six aggregate categories, participants' responses indicated that many had experienced at least one type of peer/sibling abuse (88.1%), physical assault (80.4%), property crime (77.5%), witnessed/indirect victimization (74.6%), sexual victimization (46.3%), or child maltreatment (29.6%). Because two or more of the 34 individual types of victimization on the JVQ experienced by a single participant could come from the same aggregate category (e.g., they experienced two types of property crime), we also examined the number of participants who had experienced victimization from more than one of the six aggregate

**Table 1**  
**Frequency Table for the 34 Types of Childhood Victimization on the JVQ for Study 1 and Study 2**

Victimization Type	Study 1 N = 311 Frequency (%)	Study 2 N = 321 Frequency (%)
34 types of childhood victimization (endorsed at least one type)	303 (97.4)	314 (97.8)
Property crime aggregate (endorsed at least one type)	241 (77.5)	255 (79.4)
Robbery	125 (40.2)	138 (43.0)
Theft (steal something from you)	176 (56.6)	197 (61.4)
Vandalism (break or ruin something of yours)	176 (56.6)	188 (58.6)
Physical assault aggregate (endorsed at least one type)	250 (80.4)	258 (80.4)
Assault with a weapon	64 (20.6)	73 (22.7)
Assault without a weapon	132 (42.4)	149 (46.4)
Attempted assault	58 (18.6)	69 (21.5)
Kidnap, attempted or completed	19 (6.1)	18 (5.6)
Bias attack	14 (4.5)	14 (4.4)
Physical abuse (not spanking)	56 (18.0)	66 (20.6)
Assault by group or gang of peers	8 (2.6)	9 (2.8)
Peer/sibling assault	210 (67.5)	229 (71.3)
Genital assault	20 (6.4)	24 (7.5)
Dating violence	38 (12.2)	50 (15.6)
Child maltreatment aggregate (endorsed at least one type)	92 (29.6)	132 (41.1)
Physical abuse (not spanking)	56 (18.0)	49 (33.8)
Psychological or emotional abuse	63 (20.3)	51 (35.2)
Neglect	11 (3.5)	11 (7.6)
Custodial interference or family abduction	28 (9.0)	25 (17.2)
Peer/sibling victimization aggregate (endorsed at least one type)	274 (88.1)	282 (87.9)
Assault by group or gang of peers	8 (2.6)	9 (2.8)
Peer/sibling assault	210 (67.5)	229 (71.3)
Genital assault	20 (6.4)	24 (7.5)
Bullying	174 (55.9)	182 (56.7)
Teasing, emotional bullying	166 (53.4)	170 (53.0)
Dating violence	38 (12.2)	50 (15.6)
Witnessed/indirect victimization aggregate (endorsed at least one type)	232 (74.6)	138 (73.2)
Witness domestic violence	56 (18.0)	46 (20.9)
Witness physical abuse	41 (13.2)	35 (15.0)
Witness assault with a weapon	95 (30.5)	74 (27.4)
Witness assault without a weapon	170 (54.7)	111 (48.9)
Household theft	86 (27.7)	57 (31.5)
Someone close murdered	44 (14.1)	36 (16.8)
Witness murder	3 (1.0)	2 (1.6)
Exposure to shooting, bombs, riots	40 (12.9)	30 (11.8)
Exposure to war	6 (1.9)	6 (0.6)
Sexual victimization aggregate (endorsed at least one type)	144 (46.3)	183 (57.0)
Sexual assault, known adult	17 (5.5)	25 (7.8)
Sexual assault, unknown adult	11 (3.5)	8 (2.5)
Sexual assault, with peer	60 (19.3)	77 (24.0)
Rape, attempted or completed	55 (17.7)	83 (25.9)
Flashing or sexual exposure	84 (27.0)	106 (33.0)
Sexual harassment	60 (19.3)	88 (27.4)

categories. More than 40% of the women in our sample had experienced victimization in 5 or 6 aggregate categories. Specifically, 15.4% had experienced victimization across all six aggregate categories, 26.7% from five categories, 25.7% from four, 13.8% from three, 10.3% from two, and 5.5% experienced victimization from only one aggregate category.

Correlations among the six aggregate categories of victimization were all significant and all but one fell between .15 and .29. The only exception was for peer/sibling abuse and physical assault ( $r = .57$ ), although the high correlation between these two categories is not surprising given that four of the six items that make up the Peer/Sibling Abuse Scale are also included in the broader 10-item physical

assault scale. All correlations between polyvictimization and the six categories of victimization also were significant, ranging from .39 for peer/sibling abuse to .55 for the child maltreatment category.

### **Hierarchical Regression Analyses Using Polyvictimization and Individual Categories of Childhood Victimization as Predictors of Psychological Distress**

*Data analysis and organization of Tables 2 to 4.* A series of hierarchical multiple regression analyses were conducted to examine the relative contributions of polyvictimization and each of the six childhood victimization aggregate categories in predicting psychological distress. Specifically, two sets of multiple regression analyses were conducted involving each child victimization category. The first set of analyses examined whether the continuous measure of polyvictimization would contribute significantly to a multiple regression model predicting psychological distress after the individual childhood victimization category had already been entered separately as a predictor in the first block of the analysis. The second set of analyses separately examined whether each category of childhood victimization contributed significantly to a multiple regression model predicting psychological distress when polyvictimization had already been entered as a predictor in the first block of the analysis. Reversing the order of entry for the hierarchical models allows for comparison of (a) the unique contribution of polyvictimization when each individual category of victimization was entered first to (b) the unique contributions of each individual victimization category when polyvictimization was entered first. These analyses also make it possible to compare (a) the proportion of variability accounted for by each child victimization predictor when entered alone to (b) the proportion of variability accounted for by polyvictimization alone. No problems with multicollinearity were detected for any multiple regression analysis.

Given that the results of these analyses across the six JVQ categories were quite similar, illustrative tables are presented for only three categories (child maltreatment, sexual victimization, peer/sibling victimization). Readers may contact the corresponding author for the additional tables. The organization for Tables 2 to 4 is as follows. The first column shows the proportion of variability ( $R^2$ ) accounted for by each individual child victimization category alone when it is entered into the multiple regression model first. The second column indicates the proportion of variability that polyvictimization accounts for beyond the variability accounted for by the individual child

victimization category ( $R^2$ -change). For example, as seen in Table 2, the child maltreatment aggregate accounted for 5% of the variability on the Global Severity Index of the SCL-90-R when entered into the model by itself. When polyvictimization was added to the model, it added an additional 9% beyond the variance accounted for by child maltreatment.

The third column begins the presentation of separate multiple regression models and shows the proportion of variability accounted for by polyvictimization alone when it is entered into the multiple regression model first. The fourth column indicates the proportion of variability that each child victimization category accounts for, beyond the variance accounted for by polyvictimization. As seen in the third column of Table 2, when polyvictimization was entered into the model first, it accounted for 14% of the variance on the GSI. When the child maltreatment aggregate was entered into the model second, it did not account for any additional variance beyond that accounted for by polyvictimization. Finally, the fifth column in Tables 2 to 4 lists the total variance accounted for by both polyvictimization and the child victimization category together, regardless of the order in which they were entered into the model.

*Unique contribution of polyvictimization in predicting psychological distress.* Hierarchical regression analyses revealed that, when entered into the multiple regression model first, the percentages of variability accounted for by each of the six categories of victimization was significant for the vast majority of SCL-90-R subscales and a large number of IASC scales (see Column 1 for Study 1 in Tables 2 to 4). Overall, the percentage of variability accounted for across the six categories of victimization ranged from 0% to 7% for the SCL-90-R and from 0% to 6% for the IASC. As predicted, when polyvictimization was added to the regression model second, it contributed a significant proportion of variability beyond that accounted for by any single aggregate category for all SCL-90-R and IASC scales (ranging from 1% to 13% for the SCL and from 3% to 16% for the IASC; see Column 2 of Tables 2 to 4).

*Unique contributions of individual childhood victimization categories in predicting psychological distress.* Polyvictimization accounted for 3% to 14% of the variability across SCL-90-R subscales and for 5% to 19% across IASC scales (see Column 3 of Tables 2 to 4). In most cases, this was at least twice as much variance as that accounted for by any of the aggregate categories of victimization. In addition, the six aggregate categories accounted for little to no variability beyond polyvictimization on most subscales (ranging from .00 to .01 in Column 4).

**Table 2**  
**Hierarchical Regression Analyses Examining the Relative Contributions of the**  
**Child Maltreatment Aggregate Category and Polyvictimization**

	Start Model:	Add: Polyvict	Start Model:	Add:	Total Variance <sup>a</sup>
	Childmaltx		Polyvict	Childmaltx	
	<i>R</i> <sup>2</sup>	<i>R</i> <sup>2</sup> -Change	<i>R</i> <sup>2</sup>	<i>R</i> <sup>2</sup> -Change	
Study 1					
SCL-90-R subscales					
Global Severity Index	.05**	.09**	.14**	.00	.14**
Somatization	.03**	.07**	.09**	.00	.09**
Obsessive-Compulsive	.04**	.09**	.13**	.00	.13**
Interpersonal Sensitivity	.05**	.05**	.09**	.01	.10**
Depression	.04**	.06**	.09**	.00	.09**
Anxiety	.04**	.05*	.09**	.00	.09**
Hostility	.02*	.08**	.10**	.00	.10**
Phobic Anxiety	.01	.02*	.03**	.00	.03*
Paranoid Ideation	.06**	.08**	.14**	.00	.14**
Psychoticism	.04**	.05**	.09**	.00	.09**
IASC subscales					
Interpersonal Conflicts	.05**	.05**	.10**	.01	.11**
Idealization-Disillusioned	.03**	.09**	.11**	.00	.11**
Abandonment Concerns	.05**	.06**	.11**	.00	.11**
Identity Impairment	.05**	.05**	.10**	.00	.10**
Self-Awareness	.03**	.04*	.08**	.00	.08**
Identity Diffusion	.05**	.05**	.09**	.01	.10**
Susceptibility to Influence					
Affect Dysregulation	.04**	.07**	.11**	.00	.11**
Affect Skills Deficits	.03**	.06**	.09**	.00	.09**
Affect Instability	.04**	.07**	.11**	.00	.11**
Tension-Reduction Activities	.05**	.14**	.19**	.00	.19**
Study 2					
SCL-90-R subscales					
Global Severity Index	.06**	.12**	.18**	.00	.17**
Somatization	.03**	.08**	.11**	.00	.11**
Obsessive-Compulsive	.06**	.11**	.17**	.00	.17**
Interpersonal Sensitivity	.05**	.07**	.12**	.00	.12**
Depression	.05**	.08**	.12**	.00	.12**
Anxiety	.04**	.07**	.12**	.00	.12**
Hostility	.03**	.08**	.11**	.00	.11**
Phobic Anxiety	.03**	.02*	.04**	.00	.05**
Paranoid Ideation	.06**	.12**	.18**	.00	.18**
Psychoticism	.05**	.10**	.14**	.00	.15**
TSI factor scores					
Trauma factor	.05**	.16**	.21**	.00	.22**
Self factor	.05**	.16**	.20**	.00	.20**
Dysphoria factor	.06**	.08**	.14**	.00	.14**

a. The proportions of variability accounted for in steps 1 and 2 of each set of hierarchical regression analyses should sum to the value reported in the total variance column. Minor differences from this expected pattern in the table are due to the rounding of values to 2 decimal places.

\* $p < .05$ . \*\* $p < .01$ .

*Total variance in psychological distress accounted for by polyvictimization and six categories of childhood victimization.* The total variance accounted for by the combination of polyvictimization with each individual

category of childhood victimization was significant across all measures of psychological distress (ranging from 3% to 15% for the SCL-90-R and from 5% to 19% for the IASC; see Column 5 of Tables 2 to 4).

**Table 3**  
**Hierarchical Regression Analyses Examining the Relative Contributions of the**  
**Sexual Victimization Aggregate Category and Polyvictimization**

	Start Model:	Add: Polyvict	Start Model:	Add:	Total Variance <sup>a</sup>
	Sexual Vict		Polyvict	Sexual Vict	
	<i>R</i> <sup>2</sup>	<i>R</i> <sup>2</sup> -Change	<i>R</i> <sup>2</sup>	<i>R</i> <sup>2</sup> -Change	
Study 1					
SCL-90-R subscales					
Global Severity Index	.06**	.09**	.14**	.01	.15**
Somatization	.02*	.08**	.09**	.00	.09**
Obsessive-Compulsive	.03*	.10**	.13**	.00	.13**
Interpersonal Sensitivity	.07**	.04*	.09**	.02*	.11**
Depression	.04**	.05*	.09**	.01	.10**
Anxiety	.02*	.07*	.09**	.00	.09*
Hostility	.04**	.06*	.10**	.00	.10**
Phobic Anxiety	.03*	.01*	.03*	.01	.04*
Paranoid Ideation	.06*	.09**	.14**	.00	.14**
Psychoticism	.05**	.05**	.09**	.01	.10**
IASC subscales					
Interpersonal Conflicts	.03*	.07**	.10**	.00	.10**
Idealization-Disillusioned	.03*	.09**	.11**	.00	.11**
Abandonment Concerns	.03**	.07**	.11**	.00	.11**
Identity Impairment	.06**	.05**	.10**	.01	.11**
Self-Awareness	.05**	.04**	.08**	.01	.09**
Identity Diffusion	.05**	.05**	.09**	.01	.10**
Susceptibility to Influence	.02*	.03**	.05**	.00	.05**
Affect Dysregulation	.03*	.08**	.11**	.00	.11**
Affect Skills Deficits	.03*	.06*	.09**	.01	.09**
Affect Instability	.03*	.08**	.11**	.00	.11**
Tension-Reduction Activities	.06*	.13**	.19**	.00	.19**
Study 2					
SCL-90-R subscales					
Global Severity Index	.07**	.11**	.18**	.00	.18**
Somatization	.05**	.06**	.11**	.01	.11**
Obsessive-Compulsive	.08**	.10**	.17**	.00	.18**
Interpersonal Sensitivity	.06**	.06**	.12**	.00	.12**
Depression	.06**	.07**	.12**	.00	.13**
Anxiety	.03**	.09**	.12**	.00	.12**
Hostility	.06**	.06**	.11**	.01	.11**
Phobic Anxiety	.01	.03**	.04**	.00	.04**
Paranoid Ideation	.06**	.12**	.18**	.00	.18**
Psychoticism	.05**	.10**	.15**	.00	.15**
TSI factor scores					
Trauma factor	.10**	.12**	.21**	.01	.22**
Self factor	.09**	.12**	.20**	.01	.20**
Dysphoria factor	.05**	.09**	.14**	.00	.14**

a. The proportions of variability accounted for in steps 1 and 2 of each set of hierarchical regression analyses should sum to the value reported in the total variance column. Minor differences from this expected pattern in the table are due to the rounding of values to 2 decimal places.

\* $p < .05$ . \*\* $p < .01$ .

**Table 4**  
**Hierarchical Regression Analyses Examining the Relative Contributions of the**  
**Peer/Sibling Assault Aggregate Category and Polyvictimization**

	Start Model:	Add:	Start Model:	Add: Peer/	Total Variance <sup>a</sup>
	Peer/Sibling Abuse	Polyvict	Polyvict	Sibling Abuse	
	<i>R</i> <sup>2</sup>	<i>R</i> <sup>2</sup> -Change	<i>R</i> <sup>2</sup>	<i>R</i> <sup>2</sup> -Change	
Study 1					
SCL-90-R subscales					
Global Severity Index	.03*	.11**	.14**	.00	.14**
Somatization	.02*	.07**	.09**	.00	.09**
Obsessive-Compulsive	.05**	.09**	.13**	.01	.14**
Interpersonal Sensitivity	.03*	.07**	.09**	.01	.10**
Depression	.02*	.07**	.09**	.00	.09**
Anxiety	.01*	.08**	.09**	.00	.09**
Hostility	.02*	.08**	.10**	.00	.10**
Phobic Anxiety	.01	.03**	.03**	.00	.03*
Paranoid Ideation	.02*	.13**	.14**	.00	.14**
Psychoticism	.02*	.07**	.09**	.00	.09**
IASC subscales					
Interpersonal Conflicts	.01	.09**	.10**	.00	.10**
Idealization-Disillusioned	.02*	.09**	.11**	.00	.11**
Abandonment Concerns	.01	.10**	.11**	.00	.11**
Identity Impairment	.01	.10**	.10**	.00	.10**
Self-Awareness	.00	.08**	.08**	.00	.08**
Identity Diffusion	.01	.08**	.09**	.00	.09**
Susceptibility to Influence	.02*	.04**	.05**	.00	.05**
Affect Dysregulation	.01	.10**	.11**	.00	.11**
Affect Skills Deficits	.01	.08**	.09**	.00	.09**
Affect Instability	.01	.10**	.11**	.00	.11**
Tension-Reduction Activities	.03*	.16**	.19**	.00	.19**
Study 2					
SCL-90-R subscales					
Global Severity Index	.06**	.13**	.18**	.01	.19**
Somatization	.02**	.09**	.11**	.00	.11**
Obsessive-Compulsive	.07**	.11**	.17**	.01*	.19**
Interpersonal Sensitivity	.06**	.07**	.12**	.02*	.13**
Depression	.06**	.08**	.12**	.01*	.13**
Anxiety	.04**	.08**	.12**	.00	.12**
Hostility	.04**	.08**	.11**	.01	.12**
Phobic Anxiety	.02*	.03**	.04**	.00	.05**
Paranoid Ideation	.05**	.13**	.18**	.00	.19**
Psychoticism	.02**	.13**	.15**	.00	.15**
TSI factor scores					
Trauma factor	.05**	.16**	.21**	.00	.22**
Self factor	.05**	.16**	.20**	.00	.20**
Dysphoria factor	.06**	.09**	.14**	.01	.15**

a. The proportions of variability accounted for in steps 1 and 2 of each set of hierarchical regression analyses should sum to the value reported in the total variance column. Minor differences from this expected pattern in the table are due to the rounding of values to 2 decimal places.

\* $p < .05$ . \*\* $p < .01$ .

## Hierarchical Regression Analyses Examining the Unique Contribution of Polyvictimization After Simultaneously Entering All Six Aggregate Categories of Victimization as a Predictor Variable

Given that individuals often experience multiple categories of victimization rather than a single category, a separate set of regression analyses was conducted in which all six childhood victimization aggregates were entered simultaneously as the first block of predictors, and the unique contribution for each predictor was examined. The second step of this analysis examined whether polyvictimization accounted for any unique variance in psychological distress, beyond that accounted for by the initial block of six predictors. A summary of results is provided in Tables 5 and 6. Regression models using all six aggregate categories of victimization as predictors accounted for significant proportions of variability in virtually all SCL-90-R and IASC scales. As seen in Step 1, the proportion of variability accounted for ranged from .04 to .11 ( $M = .08$ ) for SCL-90-R subscales (Table 5) and from .05 to .12 ( $M = .08$ ) for IASC scales (Table 6). Squared semi-partial correlations were used to identify the unique contribution for each individual predictor variable. Results indicated that the unique contribution for child maltreatment was significant for six SCL-90-R subscales and nine IASC scales. Sexual victimization made a significant unique contribution to regression models predicting seven SCL-90-R subscales and seven IASC scales. Finally, peer/sibling assault made a significant unique contribution to one SCL-90-R subscale, and property crime made a significant unique contribution to one IASC subscale.

In Step 2, polyvictimization was added as a seventh predictor to each regression model (results are presented in the bottom half of Tables 5 and 6). As seen in Column 1,  $R^2$ -change values indicated that polyvictimization contributed a significant proportion of variability beyond that previously accounted for by the combined six aggregate categories for 8 out of 10 SCL-90-R subscales and for 10 out of 11 IASC scales. These unique contributions for polyvictimization ranged from .01 to .06 for the SCL-90-R subscales and from .01 to .07 for the IASC scales. Examination of the  $R^2$  values in Column 2 reveals that when polyvictimization was included as a predictor with all six aggregate categories, the total proportion of variability accounted for ranged from .04 to .15 for SCL-90-R subscales and from .06 to .19 for IASC scales. These predictor variables accounted for significant proportions

of variability for all but 1 of the 10 SCL-90-R subscales (phobic anxiety) and for all 11 IASC scales.

Finally, to determine which predictor variables made a significant unique contribution to the multiple regression models, squared semipartial correlations for the six aggregates and polyvictimization were examined. For 8 out of the 10 SCL-90-R subscales and 10 out of the 11 IASC scales, polyvictimization was the only predictor variable making a significant unique contribution (see Column 4). Unique contributions for polyvictimization ranged from .02 to .06 for the SCL-90-R subscales and from .02 to .07 for the IASC scales (see Column 3).

### Discussion of Study 1

High levels of childhood victimization were experienced by our sample of 311 college women, with 97% experiencing at least 1 type of victimization and more than 40% experiencing at least one type of victimization in five or more of the six aggregate categories (i.e., property crime, physical assault, child maltreatment, peer/sibling victimization, sexual victimization, and witnessed/indirect victimization). This provides strong support for the position that individuals who experience one category of childhood victimization are at increased risk for experiencing multiple categories of victimization.

The results of this study with female college students were highly consistent with those obtained in Finkelhor et al.'s (2007b) study examining the effects of polyvictimization on the psychological functioning of children. Specifically, the results indicated that although polyvictimization accounted for a significant proportion of the variability in psychological distress, each aggregate category alone added little to no additional variance beyond that accounted for by polyvictimization alone. This provides further evidence that studies which examine only one category of victimization may exaggerate the strength of the relationship between that particular category of victimization and the outcome being measured.

Finally, in a complimentary set of regression analyses with the six categories of childhood victimization considered simultaneously, only the child maltreatment and sexual victimization categories made significant unique contributions in predicting psychological distress. However, when polyvictimization was included as a seventh predictor, it was the only predictor variable in the model whose unique contribution was significant for the majority of outcome measures. Thus, not only was the unique contribution of polyvictimization significant but it also accounted for much of the unique variability formerly attributed to individual aggregate categories.

**Table 5**  
**Study 1 Hierarchical Regression Analyses Examining the Unique Contribution of Polyvictimization After Simultaneously Entering All Six Aggregate Categories of Victimization as a Predictor Variable**

SCL-90-R Subscales	$R^2$ for 6 Categories Combined	Signif. Squared Semipartial Correl. for 6 Categ. Combined	Unique Predictor	
Step 1				
Global Severity Scale	.11**	.02**	Sexual vict	
		.02**	Childmaltx	
Somatization	.05*	None	None	
Obsessive Compulsive	.09**	.01*	Peer/sibling	
Interpersonal Sensitivity	.11**	.04*	Sexual vict	
		.02**	Childmaltx	
Depression	.07**	.02*	Sexual vict	
		.01*	Childmaltx	
Anxiety	.06**	.02**	Childmaltx	
Hostility	.08**	.01*	Sexual vict	
Phobic Anxiety	.04*	.01*	Sexual vict	
Paranoid Ideation	.11**	.02**	Sexual vict	
		.02**	Childmaltx	
Psychoticism	.08**	.02*	Sexual vict	
		.02**	Childmaltx	
Mean for SCL subscales	.08**			
SCL-90-R Subscales	$R^2$ -Change With Polyvict Added in Block 2	$R^2$ for 6 Categ. Plus Polyvict	Significant Squared Semipartial Correl. for 6 Categ. Plus Polyvict	Unique Predictor
Step 2				
Global Severity Scale	.04**	.15**	.04**	Polyvict
Somatization	.06**	.11**	.06**	Polyvict
Obsessive Compulsive	.05**	.14**	.05**	Polyvict
Interpersonal Sensitivity	.01	.12**	.02*	Sexual vict
Depression	.03**	.10**	.03**	Polyvict
Anxiety	.05**	.11**	.05**	Polyvict
Hostility	.03**	.11**	.03**	Polyvict
Phobic Anxiety	.01	.04	None	None
Paranoid Ideation	.04**	.15**	.04**	Polyvict
Psychoticism	.02**	.10**	.02*	Polyvict
Mean for SCL subscales	.03	.11		

\* $p < .05$ . \*\* $p < .01$ .

## Study 2

Study 1 was the first study to use the adult version of the JVQ to examine the relative contributions of polyvictimization and each childhood victimization category in predicting psychological distress in a college sample. The purpose of Study 2 was to replicate and extend the findings of Study 1. To replicate Study 1, we administered the SCL-90-R to a new sample of female college students. Due to concerns that (a) the SCL-90-R and IASC might not tap the full range of trauma-related psychological distress experienced by participants, and (b) several subscales of the SCL-90-R were likely to have floor effects in a college sample (e.g., paranoid ideation,

psychoticism), the Trauma Symptom Inventory (Briere, 1995) replaced the IASC in the battery of questionnaires used in Study 2. The TSI was specifically designed to assess posttraumatic stress and other psychological sequelae of traumatic events.

## Method

### Participants

Three hundred and twenty-nine female undergraduates were recruited as participants for this study during the 2006-2007 academic year. Data from 8 participants were excluded from analyses because they had extensive

**Table 6**  
**Study 1 Hierarchical Regression Analyses Examining the Unique Contribution of Polyvictimization After Simultaneously Entering All Six Aggregate Categories of Victimization as a Predictor Variable**

IASC Subscales	$R^2$ for 6 Categ. Combined	Significant Squared Semipartial Correl. for 6 Categ. Combined	Unique Predictor	
<b>Step 1</b>				
Interpersonal Conflicts	.09**	.02**	Childmaltx	
Idealization-Disillusioned	.08**	.01*	Property crime	
Abandonment Concerns	.08**	.03**	Childmaltx	
Identity Impairment	.09**	.01*	Sexual vict	
		.03**	Sexual vict	
		.02**	Childmaltx	
Self-Awareness	.07**	.03*	Sexual vict	
Identity Diffusion	.09**	.01**	Childmaltx	
		.02**	Sexual vict	
Susceptibility to Influence	.06**	None	None	
Affect Dysregulation	.07**	.02*	Childmaltx	
		.01*	Sexual vict	
		.01*	Childmaltx	
Affect Skills Deficits	.05**	.01*	Sexual vict	
Affect Instability	.07**	.01*	Childmaltx	
		.02*	Childmaltx	
Tension-Reduction Activities	.12**	.02*	Sexual vict	
		.02**	Childmaltx	
Mean for IASC subscales	.08			
IASC Subscales	$R^2$ -Change With Polyvict Added in Block 2	$R^2$ for 6 Categ. Plus Polyvict	Significant Squared Semipartial Correl. for 6 Categ. Plus Polyvict	Unique Predictor
<b>Step 2</b>				
Interpersonal Conflicts	.02**	.11**	.02**	Polyvict
Idealization-Disillusioned	.04**	.12**	.04**	Polyvict
Abandonment Concerns	.04**	.12**	.04**	Polyvict
Identity Impairment	.03**	.12**	.03**	Polyvict
			.02**	Polyvict
Self-Awareness	.02**	.09**	.02**	Polyvict
Identity Diffusion	.02*	.11**	.02*	Polyvict
Susceptibility to Influence	.01	.06**	None	None
Affect Dysregulation	.05**	.12**	.05**	Polyvict
			.04**	Polyvict
			.04**	Polyvict
Affect Instability	.04**	.11**	.04**	Polyvict
Tension-Reduction Activities	.07**	.19**	.07**	Polyvict
Mean for SCL subscales	.03	.11		

\* $p < .05$ . \*\* $p < .01$ .

missing or incomplete data. In the final sample of 321 women, participants ranged in age from 18 to 24 years ( $M = 19$ ,  $SD = 1.32$ ). The majority were White (85.0%), followed by African American (5.0%), Hispanic, Latino, or Chicano (2.5%), Asian or Pacific Islander (1.9%), American Indian (0.9%), and Other (4.7%). Almost half (49.2%) of the participants were first year students, 19.9% were second year, 16.5% were third year, 13.1% were fourth year, 0.9% were fifth year or higher and one had missing data.

### Measures

The Demographics Questionnaire included questions about background factors such as age, year in school, high school GPA, current GPA, ethnic background, relationship status, and level of education completed by the participant's mother and father.

The JVQ-Adult Retrospective Version described in Study 1 also was used in Study 2, with one modification. In the present study, to better establish comparability

with the growing polyvictimization literature, participants reported the number of times they experienced each type of victimization from the time they were born until 17 years of age, rather than 16 years of age as reported in Study 1.

The Symptom Checklist 90–Revised (SCL-90-R; Derogatis, 1994) described above also was used in Study 2. The internal consistency reliability for the GSI in Study 2 was .96.

The Trauma Symptom Inventory (TSI; Briere, 1995) is a 100-item self-report inventory that assesses symptoms of post-traumatic stress disorder (PTSD) and acute stress disorder (ASD), as well as intra- and interpersonal difficulties commonly associated with more chronic psychological trauma. Psychological distress was assessed using the three-factor scores identified by Briere. The trauma factor score is comprised of the Intrusive Experiences, Defensive Avoidance, Dissociation, and Impaired Self-Reference scales. The self factor score is comprised of the Impaired Self-reference, Sexual Concerns, Dysfunctional Sexual Behavior, Tension Reduction, and Anger/Irritability scales and the dysphoria factor score is comprised of the Anger/Irritability, Depression, and Anxious Arousal scales. Participants rated each question using a 4-point scale ranging from 0 (*Hasn't happened at all in the last 6 months*) to 3 (*Has happened often in the last 6 months*). In the present study, the internal consistency reliability for the three-factor scores ranged from .93 to .95.

### Procedure

All remaining aspects of this study were identical to those described in Study 1.

## Results

### Descriptive Analyses

As seen in the second column of Table 1, approximately 98% of participants endorsed at least 1 of the 34 behaviorally specific questions regarding various individual types of childhood victimization on the JVQ. The mean number of victimizations experienced by women in our sample was 8.7 (ranging from 0 to 26). When the 34 types of victimization were collapsed into the six aggregate categories, participants' responses to these questions indicated that many had experienced at least one type of peer/sibling abuse (87.9%), physical assault (80.4%), property crime (79.4%), witnessed/indirect victimization (73.2%), sexual victimization (57%), or child maltreatment (41.1%). We then examined the percentage of participants who experienced victimization from one

or more of the six aggregate categories and found that almost half (49.2%) experienced abuse in five or six categories. Specifically, 24.6% reported experiencing victimization in all six aggregate categories, 24.6% in five, 21.8% in four, 14% in three, 6.9% in two, and 5.3% experienced victimization in only one category.

Correlations among the six aggregate categories of victimization were all significant, and all but one ranged from .16 to .35. The only exception was for peer/sibling abuse and physical assault ( $r = .54$ ). Similarly, all correlations between polyvictimization and the six categories of victimization were significant, ranging from .39 for peer/sibling abuse to .59 for the child maltreatment category.

## Hierarchical Regression Analyses Using Polyvictimization and Individual Categories of Childhood Victimization as Predictors of Psychological Distress

*Data analysis and organization of tables.* Data analysis and organization of Tables 2 to 4 were identical to those described above for Study 1. No problems with multicollinearity were present for any multiple regression analysis.

*Unique contribution of polyvictimization in predicting psychological distress.* Hierarchical regression analyses revealed that, when entered into the multiple regression model first, the percentage of variability accounted for by each of the six categories of victimization was significant for the vast majority of outcome measures of psychological distress (see Column 1 for Study 2 in Tables 2 to 4). Overall, the percentage of variability accounted for across the six categories of victimization ranged from 1% to 8% for the SCL-90-R and from 3% to 10% for the TSI. As predicted, when polyvictimization was added into the regression model second, it contributed a significant proportion of variability beyond that accounted for by any single aggregate category for virtually all measures (ranging from 2% to 14% for the SCL-90-R and from 8% to 17% for the TSI; see Column 2 of Tables 2 to 4).

*Unique contributions of individual childhood victimization categories in predicting psychological distress.* As seen in Column 3 of Tables 2 to 4, polyvictimization accounted for 4% to 18% of the variability across SCL-90-R subscales and for 14% to 21% across TSI factors. In most cases, this was at least twice as much variance as that accounted for by any of the aggregate categories of victimization. In addition, the six aggregate categories accounted for little to no variability beyond

polyvictimization on most subscales (ranging from .00 to .02; see Column 4 of Tables 2 to 4).

*Total variance in psychological distress accounted for by polyvictimization and six categories of childhood victimization.* The total variance accounted for by the combination of polyvictimization with each individual category of childhood victimization was significant across all measures of psychological distress (ranging from 4% to 19% for the SCL-90-R and from 14% to 22% for the TSI; see Column 5 of Tables 2 to 4). In addition, it is noteworthy that victimization consistently accounted for larger proportions of variability in two of the TSI factors (i.e., trauma factor: 21%-22%; self factor: 20%).

*Hierarchical regression analyses examining the unique contribution of polyvictimization after simultaneously entering all six aggregate categories of victimization as a predictor variable.* In a separate set of regression analyses, the six childhood victimization variables were entered as the first block of predictors and the unique contribution of each category to the prediction of psychological distress was examined. The second step of this model examined whether polyvictimization contributed uniquely to the prediction of psychological distress beyond that accounted for by simultaneously entering all six aggregate categories as predictor variables. A summary of results is provided in Tables 7 and 8. Regression models using all six aggregate categories of victimization as predictors accounted for significant proportions of variability in all SCL-90-R and TSI factors. In Step 1, the proportions of variability accounted for ranged from .05 to .16 ( $M = .12$ ) for the SCL-90-R and from .13 to .17 ( $M = .15$ ) for the TSI. Squared semipartial correlations indicated that child maltreatment uniquely predicted scores for 7 of the 10 SCL-90-R subscales, sexual victimization uniquely predicted 8 SCL-90-R subscales, and the peer/sibling aggregate uniquely predicted 4 SCL-90-R subscales. For the TSI, sexual victimization made significant unique contributions to the prediction of all three-factor scores. The property crime and witnessed/indirect aggregates accounted for significant unique variance in the trauma factor, and the child maltreatment and peer/sibling aggregates made significant unique contributions to the prediction of the dysphoria factor.

In Step 2, polyvictimization was added as a seventh predictor to each regression model. Results are presented in the bottom half of Tables 7 and 8. As seen in Column 1,  $R^2$ -change values indicate that polyvictimization accounted for a significant proportion of variability beyond that previously accounted for by the combined six aggregate measures for 9 out of 10 SCL-90-R subscales and for all three

TSI factors scores. The unique contributions for polyvictimization ranged from .02 to .06 ( $M = .03$ ) for the SCL-90-R subscales and from .02 to .06 ( $M = .04$ ) for the TSI factors. As seen by the  $R^2$  values in Column 2, when polyvictimization was included as a predictor with all six aggregate categories, the total proportions of variance accounted for ranged from .05 to .19 for the SCL-90-R and .15 to .23 for the TSI. These predictor variables accounted for significant proportions of variability in all 10 SCL-90-R subscales and all three TSI factors.

Finally, to determine which predictor variables made a significant unique contribution to the multiple regression models, squared semipartial correlations for the six aggregates and polyvictimization were examined. For 6 out of 10 SCL-90-R subscales and all three TSI factors, polyvictimization was the only predictor variable making a significant unique contribution (see Column 4). Both polyvictimization and the peer/sibling aggregate made significant unique contributions for an additional three SCL 90-R subscales. Unique contributions for polyvictimization ranged from .01 to .06 for the SCL-90-R subscales and from .02 to .06 for the TSI factors (see Column 4).

## Discussion of Study 2

The results of Study 2 were highly consistent with those of Study 1, with high levels of victimization across multiple categories reported. The vast majority of participants (98%) reported exposure to at least one category of victimization assessed using the JVQ, with 49% experiencing at least one type of victimization in five or more of the six major aggregate categories. Hierarchical regression analyses indicated that polyvictimization contributed significantly to the prediction of psychological distress beyond that accounted for by any aggregate category alone, whereas the six aggregate categories accounted for little to no variability beyond that accounted for by polyvictimization. Also consistent with the pattern of results obtained in Study 1, when the six categories of victimization were considered simultaneously, sexual victimization and child maltreatment emerged as unique predictors for a large number of outcomes. However, when polyvictimization was included as a seventh predictor, it was again the only unique predictor for the vast majority of outcome measures, although both peer/sibling and polyvictimization made a significant unique contribution for three SCL-90-R subscales (Obsessive Compulsive, Interpersonal Sensitivity, and Depression).

Finally, due to concern that the general measures of psychological distress used in Study 1 (i.e., SCL-90-R and IASC) might not tap the full range of symptoms

**Table 7**  
**Study 2 Hierarchical Regression Analyses Examining the Unique Contribution of Polyvictimization After Simultaneously Entering All Six Aggregate Categories of Victimization as a Predictor Variable**

SCL-90-R Subscales	$R^2$ for 6 Categ. Combined	Significant Squared Semipartial Correl. for 6 Categ. Combined	Unique Predictor	
Step 1				
Global Severity Scale	.15**	.02* .02* .01**	Sexual vict Childmaltx Peer/sibling	
Somatization	.10**	.02* .01*	Sexual vict Witness	
Obsessive Compulsive	.16**	.02* .01* .01**	Sexual vict Childmaltx Peer/sibling	
Interpersonal Sensitivity	.12**	.02* .02** .02**	Sexual vict Childmaltx Peer/sibling	
Depression	.12**	.02* .02* .01**	Sexual vict Peer/sibling Childmaltx	
Anxiety	.10**	.01*	Childmaltx	
Hostility	.10**	.02**	Sexual vict	
Phobic Anxiety	.05*	None	None	
Paranoid Ideation	.15**	.02* .02** .01	Sexual vict Childmaltx Property crime	
Psychoticism	.10**	.02** .02**	Sexual vict Childmaltx	
Mean for SCL subscales	.12**			
SCL-90-R Subscales	$R^2$ -Change With Polyvict Added in Block 2	$R^2$ for 6 Categ. Plus Polyvict	Significant Squared Semipartial Correl. for 6 Categ. Plus Polyvict	Unique Predictor
Step 2				
Global Severity Scale	.04**	.19**	.04**	Polyvict
Somatization	.02*	.12**	.02*	Polyvict
Obsessive Compulsive	.03**	.19**	.03* .01**	Polyvict Peer/sibling
Interpersonal Sensitivity	.02**	.14**	.02** .02**	Polyvict Peer/sibling
Depression	.02**	.14**	.02* .01**	Polyvict Peer/sibling
Anxiety	.03**	.12**	.03**	Polyvict
Hostility	.02**	.12**	.02**	Polyvict
Phobic Anxiety	.01	.05*	None	None
Paranoid Ideation	.04**	.19**	.04**	Polyvict
Psychoticism	.06**	.16**	.06**	Polyvict
Mean for SCL subscales	.03	.14		

\* $p < .05$ . \*\* $p < .01$ .

associated with polyvictimization, a trauma-specific measure of psychological distress (i.e., TSI) was added to the assessment battery for Study 2. Results indicated that polyvictimization accounted for large proportions of variability on the trauma factor (21%) and the self factor

(20%) of the TSI, as well as on the GSI (18%) of the SCL-90-R. High scores on the trauma and self factors reflect a variety of psychological difficulties including intrusive experiences, defensive avoidance, dissociation, impaired self-reference, sexual concerns, dysfunctional

**Table 8**  
**Study 2 Hierarchical Regression Analyses Examining the Unique Contribution of Polyvictimization After Simultaneously Entering All Six Aggregate Categories of Victimization as a Predictor Variable**

TSI Factor Scores	$R^2$ for 6 Categ. Combined	Significant Squared Semipartial Correl. for 6 Categ. Combined	Unique Predictor	
Step 1				
Trauma factor	.17**	.03* .01** .01*	Sexual vict Property crime Witness/indirect	
Self factor	.15**	.04**	Sexual vict	
Dysphoria factor	.13**	.02* .01* .01*	Childmaltx Peer/sibling Sexual vict	
Mean for TSI subscales	.15			
TSI Factor Scores	$R^2$ -Change With Polyvict Added in Block 2	$R^2$ for 6 Categ. Plus Polyvict	Significant Squared Semipartial Correl. for 6 Categ. Plus Polyvict	Unique Predictor
Step 2				
Trauma factor	.05**	.23**	.05**	Polyvict
Self factor	.06**	.21**	.06**	Polyvict
Dysphoria factor	.02**	.15**	.02**	Polyvict
Mean for TSI subscales	.04	.20**		

\* $p < .05$ . \*\* $p < .01$ .

sexual behavior, and tension-reduction behaviors not commonly assessed on general measures of psychological distress. The presence of large effect sizes for these measures is consistent with symptoms commonly associated with more chronic forms of abuse and PTSD. For example, numerous child maltreatment researchers (e.g., Briere, 2002; Briere & Scott, 2006; Herman, 1992) have reported that correlates associated with complex PTSD and more chronic psychological trauma include difficulties with identity, interpersonal relatedness, boundary awareness, and affect regulation, as well as dissociative symptoms. Furthermore, Briere and Scott (2006) have suggested that individuals who have difficulty regulating their affect may rely on external means of reducing abuse-related distress (i.e., tension-reduction behaviors). As indicated above, it is noteworthy, however, that polyvictimization also accounted for a large proportion of variability on the Global Severity Index (18%), which is generally regarded as the best single indicator of current-level psychological distress on the SCL-90-R and is recommended for use in most cases where a single summary measure is needed (Derogatis, 1994). However, this index reflects a summary of a variety of general psychological symptoms in community, medical, and psychiatric settings (e.g., depression, anxiety, somatic complaints, hostility) rather than trauma-specific symptoms.

Taken together, these results suggest that although general measures of psychological distress may tap a variety of psychological symptoms commonly associated with a history of childhood maltreatment, they may not assess the full range of intra- and interpersonal difficulties commonly associated with more chronic psychological trauma. Thus, these findings highlight the importance for both clinicians and researchers to use assessment instruments which assess both general and trauma-related psychological distress.

## General Discussion

### *Polyvictimization*

Despite growing interest concerning long-term correlates associated with exposure to high cumulative levels of childhood victimization, to the authors' knowledge, the present studies are the first which have examined polyvictimization in college women using a comprehensive measure which assessed six broad categories of childhood maltreatment and other forms of juvenile victimization. In both studies, exposure to at least 1 of the 34 individual types of childhood victimization was reported for the vast majority of participants (97% and 98%, respectively), with almost half (40% and 49%) in

each sample experiencing at least one type of victimization in five or more of the six aggregate categories (e.g., property crime, physical assault, child maltreatment, peer/sibling victimization, sexual victimization, and witnessed/indirect victimization). These prevalence rates are consistent with previous studies (e.g., Arata et al., 2005; Finkelhor, 2005a; Higgins & McCabe, 1998, 2000b, 2001) which have found that individuals who experience one category of childhood victimization are likely to have experienced additional categories as well. Although high levels of victimization might be expected in clinical samples, it is particularly noteworthy that such high levels were found in our sample of nonclinical, presumably high-functioning, college students.

### **Relative Contributions of Polyvictimization and Six Aggregate Categories of Childhood Victimization in Predicting Psychological Distress**

Although a variety of studies have examined simultaneously the relationship between several different categories of childhood maltreatment in predicting psychological distress in college students (e.g., Arata et al., 2005; Higgins & McCabe, 2001), the studies described in this article are the first which have examined the relative contributions of both polyvictimization and six broad aggregate categories of childhood victimization in predicting psychological distress in college students. The pattern of results was highly consistent across both studies. Whereas individual categories of victimization typically accounted for less than 7% of the variance on all outcome measures, polyvictimization often accounted for between 9% and 21% of the variance. In addition, polyvictimization accounted for a significant proportion of the variability in psychological distress beyond that accounted for by any of the individual categories of victimization alone, whereas each individual aggregate category added little to no additional variance beyond that which was accounted for by polyvictimization alone (typically 0% to 1%). The findings of the present studies are generally consistent with Finkelhor et al.'s (2007b) study examining the effects of polyvictimization on the psychological functioning of children and suggest that studies which examine only one type of victimization may exaggerate the strength of the relationship between that particular type of victimization and the outcome being measured.

Finally, in both studies we first examined the unique contribution for each aggregate category when all six were simultaneously entered into a regression equation

and then examined whether polyvictimization contributed any unique variance, beyond that accounted for by the simultaneous entry of all six aggregate categories as a predictor variable. Overall, the pattern of results across studies was similar. In Study 1, the Sexual Victimization and Child Maltreatment aggregate categories uniquely predicted the majority of SCL-90-R and IASC scales. In Study 2, Sexual Victimization and Child Maltreatment uniquely predicted the majority of SCL-90-R and TSI factors, although the peer/sibling aggregate also emerged as a unique predictor for a number of SCL-90-R subscales. It is not clear why the effect for peer/sibling victimization was limited to Study 2. Future research is needed to determine whether this finding reflects (a) a theoretically meaningful pattern, (b) the presence of cohort effects (e.g., Study 1 was conducted during the 2005-2006 academic year, and participants reported their history of victimization prior to age 16, whereas Study 2 was conducted in 2006-2007, and participants reported victimization prior to age 17), (c) methodological artifact (e.g., different measures were included in Study 1 and Study 2), or (d) some unknown random variation across the two samples.

More important, in both studies, polyvictimization contributed uniquely to the amount of variance accounted for, beyond that accounted for by the combination of the six aggregate categories of victimization. It is important to note that these results do not imply that the individual categories are irrelevant but that polyvictimization has an impact beyond the six categories of victimization. This finding is consistent with the growing body of literature concerning cumulative adversity or cumulative risk (e.g., Lloyd & Turner, 2003; Turner & Lloyd, 1995; Turner, Wheaton, & Lloyd, 1995) which suggests there is a relationship between the number of lifetime adversities a person experiences and subsequent mental health problems. According to Masten and Wright (1998), it is possible that "risk factors interact and the effects are magnified when they co-occur or pile-up, such that the overall effect is greater than the sum of the individual risk factors" (p. 9). Results of previous studies have suggested that cumulative stress is a significant risk factor for psychological distress and a variety of psychiatric disorders (e.g., Follette, Polusny, Bechtel, & Naugle, 1996; Kessler, Davis, & Kendler, 1997; Turner & Lloyd, 1995) and that higher lifetime exposure to adversity increases the risk that subsequent stressors will result in PTSD (Breslau, Chilcoat, Kessler, & Davis, 1999; Lloyd & Turner, 2003). It is also important to note that, in addition to childhood victimization, a variety of nonviolent and nonvictimization experiences (e.g., parental divorce, failing a grade in school, poverty,

homelessness, death of a relative or close friend, learning of a friend's suicide, parental psychopathology, natural disasters) may be significantly associated with psychological distress in adults. For example, a study by Turner, Finkelhor, and Ormrod (2006) found that cumulative exposure to multiple forms of victimization, as well as nonvictimization adversities, showed independent effects as predictors of mental health.

## Implications for Practice and Research

Results strongly support the contention that to more fully understand children's experience with violence, clinicians and researchers should study several categories of childhood victimization rather than a single category in isolation (Arata et al., 2005; Briere & Runtz, 1988; Finkelhor et al., 2007a; Higgins & McCabe, 1998, 2000b; Saunders, 2003). Both generalists and traumatologists should have a basic grounding in all the main forms of trauma, and those who specialize in a particular category of trauma should be aware that many of their clients have likely experienced other categories of victimization as well. Given the high rates of multiple types of victimization reported by this nonclinical sample of participants, the results emphasize the importance of continued efforts geared toward the prevention of multiple types of childhood victimization. Results also suggest that many college students have experienced a broad range of victimization experiences, and thus it is important for clinicians who work at university counseling centers to screen for exposure to all types of victimization. The adult retrospective version of the JVQ appears to be a promising new measure for assessing numerous childhood victimization categories as well as polyvictimization. Clinicians should pay particular attention to the total number of different lifetime victimizations their clients have experienced because it appears to be highly predictive of current psychological distress. In fact, results from these studies provide preliminary evidence that the total number of lifetime victimizations is at least as important, if not more important, than individual categories of victimization. Finally, measures designed specifically to assess trauma-related symptoms and intra- and interpersonal difficulties often associated with more chronic psychological trauma and complex PTSD may be particularly beneficial for identifying problem areas and establishing treatment goals.

## Limitations of the Present Study

The present studies have several limitations. Specifically, our nonclinical samples consisted primarily of White,

female college students between the ages of 18 and 24 which limits generalizability to participants who may be older, non-White, or male. It is also possible that college students represent a more resilient and well-adjusted subgroup of individuals who have experienced childhood victimization, and thus the results of these studies may underestimate the effects of victimization experienced by other individuals, particularly those in a clinical setting. In addition, given the correlational nature of these studies, cause and effect conclusions cannot be drawn. It is possible, for example, that the psychological distress reported by participants was influenced by a variety of negative family characteristics (e.g., Higgins & McCabe, 2001; Higgins, McCabe, & Ricciardelli, 2003) or other nonvictimization or adverse life experiences (e.g., Lloyd & Turner, 2003; Turner et al., 2006) also associated with a history of childhood victimization. Similarly, if polyvictimization in childhood increases the likelihood of new victimization experiences in adulthood, then levels of psychological distress observed in the present studies may be attributable to the recency of the victimization experiences, rather than to the number of lifetime victimizations.

Another limitation concerns the fact that all measures in these studies used a self-report format; therefore, the data represent participants' perceptions of their psychological distress rather than objective reports. In addition, as with all studies that rely on participant's retrospective recall, the accuracy of participants responses may be called into question since it is possible that some participants have either forgotten or intentionally failed to report various types of childhood victimization or may over- or underreport their symptoms of distress. Finally, although the large number of tests conducted raises the possibility of an inflated family-wise risk for Type I error, the high proportion of significant effects speaks strongly to the presence of real, rather than chance, findings. Moreover, we have focused our interpretation and discussion of the results on the overall pattern of findings, across combinations of predictor and criterion variables, rather than on specific individual effects.

## Future Research

Future studies which examine the relationship between polyvictimization and psychological distress should use a larger, more diverse sample of participants (e.g., men, clinical vs. nonclinical, college-bound vs. non-college bound, first semester vs. upper-level students, those who have accessed counseling for abuse-related issues vs. those who have not).

Research is also needed in the area of polyvictimization with both child and adult samples, using an assessment

instrument such as the JVQ that can assess numerous types of childhood victimization. Research examining the psychometric properties of the adult version of the JVQ is strongly needed, with particular attention paid to addressing how to best determine a suitable polyvictimization cut-off score for use with clinical and college-age samples. Future studies also should examine whether lifetime prevalence of polyvictimization (as measured in the current study) or past year incidence of polyvictimization (as measured in studies by Finkelhor et al.) is a better predictor of psychological symptoms, as well as whether trauma severity or trauma frequency is a better predictor. Future studies are also needed to explore the mechanisms through which prior adversities and victimization are linked to subsequent psychological functioning and the factors that may moderate or mediate these relationships (e.g., Aspelmeier, Elliott, & Smith, 2007; Turner & Butler, 2003; Whiffen, Judd, & Aube, 1999). For example, early exposure to one category of victimization (e.g., child maltreatment) could then put children at risk to experience other categories of victimization. Similarly, further victimization experiences may adversely impact general interpersonal trust and/or the ability to garner and use social support which may exacerbate the number of life stressors individuals experience and the impact that such stressors can have on psychological functioning. Finally, additional research is needed to examine the impact of polyvictimization on other potential correlates of childhood victimization (e.g., physical health variables, adjustment to college).

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