

Identifying and Determining the Symptom Severity Associated With Polyvictimization Among Psychiatrically Impaired Children in the Outpatient Setting

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Abstract

Polyvictimization involves experiencing multiple forms of maltreatment or other interpersonal victimization, and places children at risk for severe psychosocial impairment. Children with psychiatric problems are at risk for polyvictimization, and polyvictimized child psychiatric inpatients have been found to have particularly severe psychiatric symptoms. Cluster analysis was used to identify a polyvictimized subgroup ($N = 22$, 8%) among 295 outpatient admissions in 2007–2009 to a child psychiatry outpatient clinic, based on chart review of documented maltreatment, parental impairment (history of arrest, psychiatric illness, and substance use), and multiple out-of-home placements. Polyvictimization was associated with severe parent-reported externalizing problems and clinician-rated psychosocial impairment, independent of demographics and psychiatric diagnoses. Posttraumatic stress disorder (PTSD) was the only psychiatric diagnosis associated with polyvictimization. Polyvictimization merits further clinical and research assessment with child psychiatry outpatients. Evidence-based PTSD assessment and treatment for polyvictimized children with adaptations to address their severe impairment and externalizing problems also warrants empirical evaluation.

Keywords

adolescent victims, adolescents, child PTSD/trauma, child victims, mental health services, adult retrospective reports

Child maltreatment is prevalent in the United States (Kaffman, 2009; Shipman & Taussig, 2009) and often co-occurs with other childhood adversities such as family violence, caregiver impairment due to psychiatric illness, substance abuse, or criminal justice involvement, and out-of-home (e.g., foster care) placements (Afifi, Boman, Fleisher, & Sareen, 2009; Anda et al., 2006) and revictimization (Finkelhor, Ormrod, Turner, & Hamby, 2005). When children are exposed to multiple forms of maltreatment or violence, this has been described as “polyvictimization” (Finkelhor, Ormrod, & Turner, 2007, 2009), multiple-type abuse (Higgins, 2004), or complex trauma (Cook et al., 2005). Studies of college student (Elliott, Alexander, Pierce, Aspelmeier, & Richmond, 2009; Richmond, Elliott, Pierce, Aspelmeier, & Alexander, 2009), community (Finkelhor et al., 2007; Ford, Elhai, Connor, & Frueh, 2010; Holt, Finkelhor, & Kantor, 2007; Turner, Finkelhor, & Ormrod, 2010a), and inpatient psychiatric (Ford, Connor, & Hawke, 2009) samples of children and young adults have shown that polyvictims are at risk of, and have very severe

symptoms of, anxiety, depression, anger/hostility, impulsivity, aggression, sexualized behavior, and dissociation.

While differing in their approach to measuring polyvictimization, the results of studies with a wide range of different subpopulations of children, adolescents, and young adults have been quite consistent in showing that cumulative exposure to multiple types of maltreatment or other severe adversities is more strongly associated with psychiatric and behavioral symptoms and impairment than exposure to any single type of maltreatment, abuse, or other traumatic adversity (Anda et al., 2006; Barnes, Noll, Putnam, & Trickett, 2009; Briere, Kaltman, & Green, 2008; Cloitre et al., 2009; Cuevas, Finkelhor,

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Ormrod, & Turner, 2009; Finkelhor et al., 2005, 2007, 2009; Margolin et al., 2009; Schumm, Briggs-Phillips, & Hobfoll, 2006; Shen, 2009). The present study therefore aimed to replicate and extend these prior findings by attempting to identify and characterize a polyvictimized subgroup in a clinical population in which polyvictimization has not been studied—children receiving outpatient psychiatric services.

Approaches to Defining and Assessing Polyvictimization

Polyvictimization has been defined a priori as either a categorical or dimensional variable. As a categorical variable, polyvictimization has been defined as having experienced at least four of 34 possible types of victimization in the past year (Finkelhor et al., 2007). A second example of the categorical approach was taken by the Adverse Childhood Experiences (ACE) study, in which 10 types of severe adversities were assessed retrospectively: (a) Sexual abuse; (b) Emotional abuse; (c) Emotional neglect; (d) Physical abuse; (e) Physical neglect; (f) Family substance abuse; (g) Family mental illness; (h) Incarceration of a family member; (i) Parental separation or divorce; and (j) Domestic violence. Individuals who reported experiencing at least three of the adversities were found to be significantly more likely to suffer from psychiatric or major physical illnesses as adults than those with fewer past adversities (Anda et al., 2006).

Alternately, in the dimensional approach, ordinal scores for polyvictimization have been created. For example, this was done using count of the number of specific types of victimization reported from a list of between 3 and 10 specific exemplars for each of several victimization categories (i.e., property crime, physical assault, physical abuse, victimization by peers or siblings, sexual assault or abuse, or witnessing community or family violence; Elliott et al., 2009; Richmond et al., 2009). In the ACE study, a dimensional score was created by counting the number of the 10 types of childhood adversity reported by respondents (Anda et al., 2006).

These studies used a priori categorical or dimensional definitions of polyvictimization. Other studies with the same or different data sets have defined polyvictimization *empirically* using statistical techniques such as cluster analysis (Ford et al., 2009; Higgins, 2004) or latent class analysis (Ford, Elhai, Connor, & Frueh, 2010). These analyses are designed to identify subgroups based on profiles of variables hypothesized to be of theoretical or clinical interest—in this case, empirically distinct profiles of the types of childhood adversity. Prior studies using an empirical approach to identify polyvictimization were done with community (Ford et al., 2010; Higgins, 2004) and inpatient psychiatric (Ford et al., 2009) samples, but not with samples from the large population of children in outpatient psychiatric services.

Statistically based empirical methods of classifying children as polyvictimized have two important advantages over a priori approaches. First, they do not rely upon a single threshold for number of types of adversity, but instead construct profiles

based upon actual interrelationships among different types of adversity. Second, they allow individuals who have different numbers of types of victimization or maltreatment to be included in the polyvictimization subgroup even though they might not have experienced “enough” types of adversity to meet the threshold set by an a priori categorical definition. Thus, they provide a potentially more precise way to identify subgroups of polyvictimized children (based on distinct profiles of adversity), rather than only testing whether children who have more types of victimizations are more adversely affected.

The Present Study

The goal of this study was to replicate the findings of a study of polyvictimization in severely psychiatrically impaired children (Ford et al., 2009) with a clinical population that is larger and less impaired (i.e., children in outpatient psychiatric treatment). Ford et al. (2009) used cluster analysis of chart review data in order to identify a polyvictimized subgroup and found that polyvictims had the most severe externalizing behavior problems and psychosocial impairment. They also found that the polyvictimization effect could not be accounted for fully by the children’s psychiatric diagnoses (i.e., major depression/dysthymia [MDD]; anxiety disorders; oppositional defiant disorder [ODD], attention deficit hyperactivity disorder [ADHD], or developmental and psychotic disorders) nor by their gender or ethnicity.

Childhood psychiatric disorders (Cuevas et al., 2009) and high levels of mental health problems (Turner, Finkelhor, & Ormrod, 2010b) or psychological distress (Cuevas, Finkelhor, Clifford, Ormrod, & Turner, 2010) have been found to place children and adolescents at risk for victimization and maltreatment. Conversely, children who are victimized or maltreated also are at risk for psychiatric disorders, including posttraumatic stress disorder (PTSD), other anxiety disorders, affective disorders, and externalizing disorders such as oppositional-defiant disorder in childhood and substance dependence in adulthood (Afifi et al., 2009; Anda et al., 2006; Conroy, Degenhardt, Mattick, & Nelson, 2009; Ford et al., 2000; Turner, Finkelhor, & Ormrod, 2006; Widom, DuMont, & Czaja, 2007).

Polyvictimization’s strong relationship to mental health problems and psychological distress suggest that it may be important to determine whether distinct subgroups of children with mental health problems or psychiatric disorders who have been polyvictimized can be identified. If so, it is important to determine if the combination of psychiatric morbidity and polyvictimization is associated with particularly severe symptoms or distress. Prior studies have used research data sets that assess between 10 (Anda et al., 2006) and > 30 types of victimization (Elliott et al., 2009; Finkelhor, et al., 2007; Higgins, 2004; Richmond et al., 2009). The present study and Ford et al. (2009) assessed a smaller set of variables from clinical data, in order to determine if these “real world” (i.e., ecologically valid) data can be used to identify polyvictims. The types of adversity assessed that were, with one exception, consistent

with those from the ACE study: past physical or sexual maltreatment, three types of parental impairment, and multiple out-of-home (e.g., foster, residential treatment, and incarceration) placements. The exception was that, unlike the ACE study, emotional abuse and neglect were not assessed in the Ford et al. (2009) study or the present study. The specific adversities used in the present study were selected based on prior research. Parental impairment and out-of-home placement have been shown to place children at risk of abuse (Anda et al., 2006; Rutter, Pickles, Murray, & Eaves, 2001) and neglect (Widom et al., 2007). Children of psychiatrically impaired (Rutter et al., 2001), substance abusing (Keller, Cummings, Davies, & Mitchell, 2008), or criminal justice-involved (Kinner, Alati, Najman, & Williams, 2007) parents have been found to be at risk of severe psychological and behavioral problems. Children in unstable out-of-home placements have been found to be at risk of adult psychiatric (Lu, Mueser, Rosenberg, & Jankowski, 2008) and criminal justice (DeGruet & Widom, 2009) problems.

Four hypotheses were tested in this study: (1) A distinct subgroup of children in outpatient psychiatric treatment, who have histories of multiple types of maltreatment and adversity was expected to be identified using cluster analysis. (2) The polyvictim subgroup was expected to be more severely psychiatrically and behaviorally symptomatic and impaired than other children in outpatient psychiatric treatment. (3) Based on prior studies' findings that polyvictimization was more predictive of symptoms and impairment than psychiatric diagnoses (Ford et al., 2009; 2010), polyvictimization's association with severe symptoms and impairment was expected to be independent of the effects of any psychiatric diagnosis except posttraumatic stress disorder (PTSD). (4) Because PTSD symptoms tend to be severe among polyvictims (Finkelhor et al., 2007; Ford et al., 2010) and could provide a focus for treatment for these children, the fourth hypothesis was that PTSD would be associated with severe symptoms and impairment even after controlling for the effect of other diagnoses and polyvictimization.

Method

Participants and Procedure

Study data were collected by chart review of all admissions from the 2007 opening of the University of Connecticut Health Center Child and Adolescent Outpatient Psychiatry Clinic whose cases were closed by February 2010. The only exclusion criterion was that only closed cases were included, in order to collect retrospective data following a protocol approved by the University of Connecticut Health Center Institutional Review Board. Participants' ($N = 295$; age $M(SD)$ age = 11.5(3.5), Range = 5–17 years old), gender, and ethnocultural backgrounds are described in Table 1. Most participants' families had either commercial insurance (55%, $N = 160$) or Medicaid, 40% ($N = 117$), with 5% ($N = 14$) self-paying. Family income was evenly distributed between those with <\$50,000 (49%, $N = 126$) and >\$50,000 (51%, $N = 132$). Most (85%,

$N = 244$) lived with one or both biological parents, 7% ($N = 20$) were adopted, 5% ($N = 14$) lived with another relative and 3% ($N = 8$) lived with nonrelatives. No participant was residing with a caregiver against whom charges of abuse had been confirmed by child protective services. Almost half (40%, $N = 114$) were in special education.

Every child (and at least one parent or caregiver) seen at the outpatient psychiatry clinic was interviewed in a 90-minute intake session by a board-eligible child psychiatrist. The intake followed a structured protocol designed to obtain a comprehensive psychiatric, developmental, and psychosocial history and to establish current psychiatric diagnoses and a treatment plan. The psychiatrist asked the parent and pediatric, school, mental health, or child welfare professionals involved in the case about child protective services reports regarding the family and obtained corroborating records if maltreatment had been investigated. Parent or caregiver ratings of the child's symptoms also were obtained (see below) and entered in the medical record.

Medical records were reviewed by a research assistant trained and supervised by the first author and the Clinic Director. De-identified study data were extracted. An independent chart review of a randomly selected 10% of the medical records found 100% agreement on each variable extracted for analysis (see Measures section below for definitions of each variable).

Measures

Demographics. Each child's age, gender, and ethnocultural background was obtained in the psychiatric intake interview and extracted from the medical record as described above.

Psychiatric diagnosis. Diagnoses were determined based on *Diagnostic and Statistical Manual* (4th ed.) criteria (American Psychiatric Association, 2000) by a consensus of the interviewing psychiatrist and (after independent review) a supervising board certified child psychiatrist (D. Connor, M.D.). Six diagnoses were included as study variables: ADHD ($N = 126$, 43%), conduct or oppositional defiant disorder (CD/ODD; $N = 64$, 21%), MDD ($N = 57$, 19%), anxiety disorder other than PTSD ($N = 36$, 12%), PTSD ($N = 24$, 8%), and bipolar disorder ($N = 13$, 5%).

Psychiatric impairment. The Clinical Global Impressions Severity Score (CGI; Guy, 1976) is a 7-point scale: 1 = *no psychiatric illness*; 2 = *borderline normal/ill*; 3 = *mildly ill*; 4 = *moderately ill*; 5 = *markedly ill*; 6 = *severely ill*; 7 = *extremely ill*. CGI ratings were determined by a consensus of the interviewing psychiatrist and (after independent review) a supervising board certified child psychiatrist (D. Connor, M.D.). In this sample, CGI ratings ranged from "2" (borderline ill; $N = 8$, 3%) to "5" (extremely ill; $N = 37$, 14%), with two extreme scores (one "1" and one "7" rating). The distribution was skewed toward high ratings (skewness = $-.142$, Standard Error = 0.146), with 42% of the ratings >4. Therefore, a CGI rating >4 ("markedly" to "extremely" ill) was used to identify participants with "clinically severe" psychiatric impairment.

Table 1. Demographic, Victimization, and Clinical Characteristics of the Sample and Subgroups

| Dichotomous Variables | Full Sample N (%) | Polyvictims N (%) | All Other Cases N (%) | Test Statistic |
|---|-------------------|-------------------|-----------------------|------------------------------|
| Gender | | | | $\chi^2 = 4.5^*$ |
| Male | 183 (62) | 9 (41) | 174 (64) | |
| Female | 112 (38) | 13 (59) | 99 (36) | |
| Ethnicity | | | | $\chi^2 = 3.6$ |
| Caucasian | 180 (63) | 10 (45) | 170 (66) | |
| Minority | 102 (37) | 12 (55) | 89 (34) | |
| Victimization variables | | | | |
| Physical abuse | 27 (11) | 14 (78) | 13 (6) | $\chi^2 = 91.1^*$ |
| No physical abuse | 225 (89) | 4 (22) | 221 (94) | |
| Sexual abuse | 29 (11) | 15 (83) | 14 (6) | $\chi^2 = 100.8^{***}$ |
| No sexual abuse | 229 (89) | 3 (17) | 226 (94) | |
| Other trauma history | 101 (34) | 19 (86) | 82 (30) | $\chi^2 = 28.7^{***}$ |
| No other trauma | 194 (66) | 3 (14) | 191 (70) | |
| Parent arrest history | 26 (9) | 8 (36) | 18 (7) | $\chi^2 = 22.5^{***}$ |
| No parent arrest history | 269 (91) | 14 (64) | 255 (93) | |
| Parent substance abuse | 97 (39) | 18 (100) | 79 (35) | $\chi^2 = 29.8^{***}$ |
| No parent substance abuse | 149 (61) | 0 | 149 (65) | |
| Parent psychiatric problems | 138 (55) | 10 (77) | 128 (54) | $\chi^2 = 2.7$ |
| No parent psych problems | 113 (45) | 3 (23) | 110 (46) | |
| Multiple past placements | 21 (11) | 13 (62) | 8 (3) | $\chi^2 = 97.9^{***}$ |
| 0 or 1 past placement | 255 (92) | 8 (38) | 247 (97) | |
| Continuous variables | M (SD) | M (SD) | M (SD) | |
| Number of types of adversity and maltreatment | 1.4 ± 1.5 | 4.4 ± 1.4 | 1.2 ± 1.2 | $t = 11.76^{***}$ $df = 271$ |
| Number of diagnoses | 1.47 ± 0.79 | 1.45 ± 0.67 | 1.47 ± 0.80 | $t = 0.1$, $df = 293$ |
| CBCL externalizing T score | 63.7 ± 10.5 | 68.8 ± 8.69 | 63.3 ± 10.6 | $t = 2.23^*$, $df = 245$ |
| CBCL internalizing T Score | 63.6 ± 10.8 | 65.2 ± 7.46 | 63.5 ± 11.0 | $t = 0.64$, $df = 245$ |
| Clinical global impression severity rating | 4.4 ± 1.0 | 4.8 ± 1.2 | 4.3 ± 1.0 | $t = 2.04^*$, $df = 273$ |

Note. CBCL = Child Behavior Checklist; $df = 1$ for all χ^2 statistics; Psych = psychiatric.

* $p < .05$.

*** $p < .001$.

The CGI has demonstrated convergent validity in relation to measures of depression, quality of life, and functional status with children and adolescents in outpatient psychiatric treatment, with “marked” or more severe impairment associated with clinically significant levels of symptoms and problems in psychosocial functioning (Endicott, Nee, Yang, & Wohlberg, 2006).

Physical and sexual maltreatment. Cases were classified as having a history of sexual or physical maltreatment if the medical record documented a legal charge against a caregiver because of suspected abuse, a court appearance regarding alleged abuse charges, or a protective services evaluation of abuse as mandated by state child protective service law.

Parental impairment. Parental impairment was defined as three variables, including problems with (a) alcohol or substance use disorders and (b) psychiatric illness (including affective, anxiety, or psychotic disorders). These two types of assessments were found to contribute to the risk of adverse psychiatric, medical, school, and psychosocial outcomes in the ACE study (Anda et al., 2006). The third parental impairment variable was defined as a history of (c) arrest on criminal

charges, based on studies showing that paternal (Kinner et al., 2007) and maternal (Forgatch, Patterson, Degarmo, & Beldavs, 2009) arrest are associated with externalizing and internalizing psychiatric and behavior problems in children and adolescents.

Out-of-home placements. Children’s histories of out-of-home placements were coded to represent the number of total placements (none, one, and more than one), including foster, adoptive, residential, inpatient, detention, or incarceration placements. A dichotomous variable reflecting multiple (vs. none or one) out-of-home placements was used, based on Ford et al.’s (2009) and DeGrue and Widom’s (2009) findings that multiple or unstable childhood placements were more deleterious than any other out-of-home placement variable.

Child Behavior Checklist (CBCL). The CBCL is a structured parent/caregiver-rating questionnaire for children’s psychiatric and behavioral problems. The CBCL has well-defined norms and has been shown to have retest reliability and content, construct, and criterion-related validity in studies with a wide variety of community and clinical samples (Achenbach, 1991). CBCL dimensional T-scores for externalizing problems

(i.e., delinquent behavior and aggressive behavior subscales) and internalizing problems (i.e., social withdrawal, somatic complaints, and anxiety/depression subscales) were used. Based on numerous normative and validation studies (Achenbach, 1991), T -scores ≥ 65 were used to identify cases with clinically severe problems.

Statistical Analyses

K -means cluster analysis was conducted to test Hypothesis 1, with the Statistical Package for the Social Sciences (SPSS Version 15.0), in order to identify subgroups with distinct profiles on the seven types of maltreatment and adversity. Although K -means analyses' results may not be generalizable to other data sets (Steinley, 2003), this method was selected because the study's purpose was to identify a subgroup whose members were distinct from all other participants based on a history of multiple types of maltreatment and adversity. K -Means cluster analysis was appropriate for this goal because it is designed to select cases that are maximally different from all other cases in a large sample. Cases are grouped iteratively until a convergence criterion is achieved. The criterion was set at the most conservative level, 0.01, such that iterations ceased when a complete iteration did not move any of the cluster centers by a distance of $>1\%$ of the smallest distance between any initial cluster centers. The number of clusters for the final solution was selected based upon two criteria: (a) each cluster included at least 5% of the sample, in order that subgroup N s were sufficient to permit between-group statistical comparisons; (b) clusters differed $p < .001$ on all classification (victimization) variables (Milligan & Cooper, 1988).

To test Hypothesis 2, after a polyvictimization subgroup was identified, bivariate analyses were done to compare its members with all other participants on demographics (age, gender, and ethnicity), histories of maltreatment or other adversities, and psychiatric symptoms and impairment. Hypotheses 3 and 4 were tested with multivariate logistic regression analyses, which regressed dichotomous measures of clinically severe symptoms or impairment on four blocks of sequentially entered variables: (a) demographics and psychiatric diagnoses; (b) polyvictimization (Hypothesis 3); and (c) PTSD diagnosis (Hypothesis 4).

Dichotomous outcome measures of symptoms and impairment were used rather than continuous scores for two reasons. First, continuous symptom severity and impairment scores in psychiatric samples are skewed toward high scores and have restricted ranges that tend to violate the requirements of linear regression. Second, it is important to determine if polyvictimization is associated not only with more severe symptoms and impairment but with clinically severe problems. Children often present for outpatient psychiatric treatment with symptoms and impairment that are of concern to caregivers but subclinical in severity (Endicott et al., 2006), so it is important to determine if polyvictim outpatients are particularly likely to have clinically severe problems.

Data were missing in between 1% (for psychiatric diagnoses) and 16% (for the CBCL) of the cases. No systematic pattern of missing data was detected using the SPSS missing data module. Data were missing primarily due to caregivers not completing the CBCL or clinical interviewers not recording information in the medical chart. All analyses were conducted with pairwise deletion of missing data cases, in order to maximize the N for each analysis.

Results

The first results column of Table 1 provides information on demographics, victimization, and problem behaviors for the full sample. Exposure to maltreatment or adversity was common in this outpatient psychiatry sample, with 69% ($N = 204$) of the children having experienced at least one of the seven types of adversity or maltreatment.

Cluster Analysis: Identifying a Polyvictimization Subgroup (Hypothesis 1)

K -means cluster analyses revealed that solutions with more than five clusters included small N clusters that did not meet the first selection criterion. Solutions with between two and five clusters yielded adequately sized clusters. A four-cluster solution was selected because it was the only one that met the second criterion (i.e., clusters differed, $F(3,242-291) = 8.8-65.0$, $p < .001$, on all classification variables) as well as the first criterion.

A cluster subgroup was identified for which all classification variables' final cluster center scores reflected definite or likely exposure to each form of maltreatment or adversity. Consistent with Hypothesis 1, this cluster was labeled a "polyvictimization" subgroup because its members ($N = 22$) had experienced at least two types of maltreatment or adversity (Range = 2-6; $M = 4.4$ of seven types, $SD = 1.4$). Five of the seven types of adversity had occurred to more than 75% of the participants (see Table 1), including substance abusing parents, exposure to violence or other trauma, sexual abuse, physical abuse, and parents with psychiatric problems. In addition, almost two thirds of the cluster members have had multiple out-of-home placements.

The remaining cluster subgroups' members had less extensive histories of adversity. The largest subgroup ($N = 170$) rarely had histories of abuse, parental arrests, multiple out-of-home placements, or exposure to violence or other traumas (2-5%). Half of these children had parents with mental health problems (48%) and one in five had parents with substance abuse problems (21%). The other two cluster subgroups were trauma-exposed due to often (73-84%) having histories of exposure to violence or other traumas. However, children in those clusters infrequently had parents with arrest histories (12-15%) or had histories of sexual or physical abuse (2-16%) or multiple out-of-home placements (0-7%). The trauma-exposed subgroups differed only in that one of clusters ($N = 62$) frequently had parents with histories of mental health

Table 2. Bivariate Relationships of Polyvictimization With PTSD and Clinical-Level Problems

| Diagnosis/Clinical-Level Problem | | Polyvictims (N = 18–22) N (%) | All Others (N = 228–270) N (%) | Relative Risk Ratio | 95% Confidence Interval | |
|--------------------------------------|-----|----------------------------------|-----------------------------------|------------------------|-------------------------|--------|
| PTSD Diagnosis | Yes | 9 (38) | 15 (5) | 11.769* | 4.344 | 31.888 |
| | No | 13 (62) | 255 (95) | | | |
| Severe ($T \geq 65$) internalizing | Yes | 9 (47) | 122 (53) | 0.782 | 0.306 | 1.997 |
| | No | 10 (53) | 106 (47) | | | |
| Severe ($T \geq 65$) externalizing | Yes | 16 (84) | 108 (48) | 5.926* | 1.681 | 20.896 |
| | No | 3 (16) | 120 (52) | | | |
| Marked/severe impairment | Yes | 15 (75) | 101 (39) | 4.574* | 1.612 | 12.977 |
| | No | 5 (25) | 154 (61) | | | |

Note. PTSD = posttraumatic stress disorder. Cell Ns differ due to missing data.

* $p < .05$.

problems (95%) or substance abuse (69%), while the other cluster's members ($N = 41$) infrequently (<15%) had parents with either mental health or substance abuse problems. The low adversity cluster and the two trauma-exposed cluster's members were combined into a "non-poly victim" cohort in order to test the remaining hypotheses that polyvictims would differ from all other child psychiatry outpatients. Including the two trauma-exposed subgroups in this non-polyvictim cohort provided a conservative test of the unique role of polyvictimization.

Bivariate Analyses: Characteristics of Polyvictims (Hypothesis 2)

Table 1 summarizes the results of the bivariate analyses for the demographic, trauma history, and symptom variables. Polyvictimization was associated with female gender, but the polyvictims did not differ from other child outpatients in age or ethnocultural background. As expected, sexual or physical abuse, other trauma, multiple out-of-home placements, and having a legally or substance abuse-impaired parent were associated with polyvictimization. However, having a psychiatrically impaired parent was not associated with polyvictimization. Polyvictims had almost four times as many *types* of maltreatment or adversity, on average, than other child outpatient participants. In support of Hypothesis 2, polyvictims had higher levels of externalizing problems and impairment than other child outpatients. However, polyvictims did not have higher internalizing symptom ratings than the other child psychiatry outpatients.

Table 2 summarizes bivariate findings comparing polyvictims to other child outpatients on dichotomous variables for clinically severe externalizing and internalizing problems, impairment, and PTSD diagnosis. Polyvictimization was associated with each severity variable except internalizing problems. Polyvictimization also was not associated with any other diagnosis, including CD/ODD (Odds Ratio [OR] = 1.1), other anxiety disorders (OR = 1.1), MDD (OR = 0.9), or ADHD (OR = 0.6; all $p > .05$). Bivariate analyses supported Hypothesis 2 except, consistent with results from the prior study with a child psychiatry inpatient sample (Ford et al.,

2009), polyvictimization was unrelated to internalizing symptom severity. Therefore, only externalizing symptoms and impairment were examined in the subsequent multivariate analyses.

Multivariate Analyses: Unique Effects of Polyvictimization and PTSD (Hypotheses 3 and 4)

Table 3 presents results from the two multivariate logistic regression analyses. The left side of Table 3 shows results of tests of the associations between demographics and psychiatric disorders (Block 1), polyvictimization (Block 2), and PTSD (Block 3) with severe psychosocial impairment. Impairment was unrelated to demographics but was associated with MDD, bipolar, and CD/ODD diagnoses (Nagelkerke $R^2 = .20$). When polyvictimization and PTSD were entered in Blocks 2 and 3, each was associated with severe impairment. Change in variance accounted for by the multivariate model increased statistically significantly at each step (Nagelkerke $R^2 = .25$, R^2 change = .05; and Nagelkerke $R^2 = .29$, R^2 change = .04, respectively). In the final model, polyvictimization was associated with clinically severe impairment after controlling for the statistically significant effects of diagnoses of PTSD, bipolar disorder, CD/ODD, and MDD.

A parallel regression analysis was conducted with clinically severe externalizing problems as the outcome variable, as shown in the right side of Table 3. Older age and MDD, bipolar disorder, and CD/ODD diagnoses were associated with clinically severe externalizing problems in Block 1 (Nagelkerke $R^2 = .22$, see Table 3). In Block 2, polyvictimization was associated with severe externalizing problems and the variance accounted for by the model increased statistically significantly (Nagelkerke $R^2 = .27$, R^2 change = .05). When PTSD was entered in Block 3, the variance accounted for did not increase significantly (Nagelkerke $R^2 = .28$, R^2 change = .01), and both PTSD and polyvictimization were unrelated to severe externalizing problems. In the final model, only older age, CD/ODD, and MDD were associated with an increased risk of clinically severe externalizing problems.

Table 3. Multivariate Correlates of Clinically Severe Psychosocial Impairment and Externalizing Problems

| | CBCL Severe Impairment (CGI > 4) (N = 260) | | | | | CBCL Severe Externalizing (T > 65) (N = 239) | | | | |
|--------------------|--|------|--------|--------|--------|--|------|--------|--------|--------|
| | Wald F | p | OR | 95% CI | | Wald F | p | OR | 95% CI | |
| Block 1 | Model $\chi^2 = 41.196, df = 8, p < .001$ | | | | | Model $\chi^2 = 44.465, df = 8, p < .001$ | | | | |
| Age | 0.004 | .951 | 0.997 | 0.909 | 1.094 | 17.363 | .000 | 1.284* | 1.132 | 1.411 |
| Female gender | 1.119 | .290 | 1.412 | 0.745 | 2.677 | 1.044 | .307 | 0.702 | 0.356 | 1.384 |
| Minority ethnicity | 0.770 | .380 | 0.869 | 0.635 | 1.189 | 1.050 | .305 | 1.194 | 0.850 | 1.677 |
| Depression | 9.838 | .002 | 3.553* | 1.609 | 7.845 | 6.622 | .010 | 3.079* | 1.307 | 7.252 |
| Bipolar disorder | 5.801 | .016 | 5.667* | 1.381 | 23.251 | 2.899 | .089 | 3.676* | 0.821 | 16.455 |
| Anxiety disorder | 1.143 | .285 | 0.559 | 0.193 | 1.622 | 1.779 | .182 | 0.427 | 0.122 | 1.491 |
| ADHD | 0.274 | .600 | 1.189 | 0.622 | 2.272 | 1.559 | .212 | 1.563 | 0.775 | 3.150 |
| CDD/ODD | 14.691 | .000 | 4.142* | 2.003 | 8.566 | 7.894 | .005 | 3.158* | 1.416 | 7.044 |
| Block 2 | Change $\chi^2 = 11.812, df = 1, p = .001$ | | | | | Change $\chi^2 = 10.213, df = 1, p = .001$ | | | | |
| Age | 0.111 | .739 | 0.984 | 0.894 | 1.083 | 15.955 | .000 | 1.256* | 1.123 | 1.404 |
| Female gender | 2.107 | .147 | 1.637 | 0.841 | 3.185 | 0.589 | .443 | 0.764 | 0.384 | 1.521 |
| Minority ethnicity | 1.824 | .177 | 0.795 | 0.570 | 1.109 | 0.483 | .487 | 1.132 | 0.798 | 1.606 |
| Depression | 9.372 | .002 | 3.613* | 1.587 | 8.222 | 6.312 | .012 | 3.088* | 1.281 | 7.443 |
| Bipolar disorder | 5.579 | .018 | 5.710* | 1.345 | 24.236 | 2.714 | .099 | 3.684 | 0.781 | 17.382 |
| Anxiety disorder | 0.493 | .483 | 0.679 | 0.231 | 1.998 | 1.167 | .280 | 0.499 | 0.141 | 1.762 |
| ADHD | 0.762 | .383 | 1.349 | 0.689 | 2.643 | 2.438 | .118 | 1.771 | 0.864 | 3.628 |
| CDD/ODD | 15.238 | .000 | 4.471* | 2.108 | 9.483 | 7.581 | .006 | 3.116* | 1.387 | 6.998 |
| Polyvictimization | 10.269 | .001 | 9.990* | 2.445 | 40.825 | 4.765 | .029 | 4.797* | 1.174 | 19.604 |
| Block 3 | Change $\chi^2 = 10.919, df = 1, p = .001$ | | | | | Change $\chi^2 = 1.090, df = 1, p = .30$ | | | | |
| Age | 0.017 | .896 | 0.994 | 0.902 | 1.095 | 16.418 | .000 | 1.263* | 1.128 | 1.414 |
| Female gender | 2.966 | .085 | 1.824 | 0.920 | 3.613 | 0.542 | .462 | 0.771 | 0.386 | 1.541 |
| Minority ethnicity | 2.882 | .090 | 0.743 | 0.528 | 1.047 | 0.183 | .669 | 1.081 | 0.758 | 1.541 |
| Depression | 11.150 | .001 | 4.252* | 1.818 | 9.945 | 7.040 | .008 | 3.325* | 1.369 | 8.079 |
| Bipolar disorder | 5.193 | .023 | 5.581* | 1.272 | 24.488 | 2.102 | .147 | 3.264 | 0.660 | 16.155 |
| Anxiety disorder | 0.713 | .398 | 0.618 | 0.202 | 1.889 | 1.506 | .220 | 0.449 | 0.125 | 1.614 |
| ADHD | 1.572 | .210 | 1.555 | 0.780 | 3.103 | 3.063 | .080 | 1.916 | 0.925 | 3.969 |
| CDD/ODD | 16.684 | .000 | 4.942* | 2.296 | 10.638 | 8.240 | .004 | 3.307* | 1.461 | 7.484 |
| Polyvictimization | 5.194 | .023 | 5.414* | 1.267 | 23.137 | 1.731 | .188 | 2.747 | 0.610 | 12.374 |
| PTSD | 6.555 | .010 | 6.707* | 1.562 | 28.789 | 2.572 | .109 | 3.600 | 0.752 | 17.233 |

Note. OR = Odds Ratio; CI = Confidence Interval

Discussion

Consistent with the study's first hypothesis, a polyvictimization subgroup consisting of approximately 1 in 12 children in a psychiatric outpatient treatment sample was identified. The polyvictims had extensive histories of maltreatment and other adversities—on average, having experienced almost 4.5 of 7 possible *types* of victimization. Consistent with the study's second hypothesis, clinically severe externalizing behavior problems, psychiatric impairment, and PTSD diagnosis were associated with polyvictimization. However, polyvictimization was not associated with clinical-level internalizing problems nor with any other psychiatric diagnosis.

Support for the third hypothesis was found in multivariate analyses in which polyvictimization was associated with a clinically severe impairment over and above the effects of demographics and psychiatric diagnoses including PTSD. Some weaker support was found for an association between polyvictimization and externalizing behavior problems, because this relationship held true after accounting for

demographics and diagnoses other than PTSD, but not after accounting for the effects of a diagnosis of PTSD. Hypothesis 4 was partially supported, in that a PTSD diagnosis was associated with clinically severe impairment in the multivariate analyses. Also, including PTSD diagnosis in the regression reduced the odds of clinically significant impairment attributable to polyvictimization by half, from 10-fold to 5-fold risk. However, PTSD diagnosis was not associated with clinically significant externalizing problems in the multivariate analysis. These findings replicate those from the child psychiatric inpatient sample studied by Ford and colleagues (2009), providing further evidence that polyvictimization is associated with particularly severe impairment and externalizing behavior problems among children who are in psychiatric treatment. Thus, not only children in intensive psychiatric care but also those who live in the community and receive outpatient psychiatric care appear to have particularly severe and psychosocial impairment, and possibly externalizing problems, if they are polyvictims.

Implications for Clinical Practice

Study findings have clinical relevance by suggesting that even among a symptomatic population of children receiving outpatient psychiatric services, assessment is needed to identify a subgroup comprised of polyvictims who are at high risk for severe impairment and severe externalizing symptoms. Although polyvictims may represent only a small fraction (i.e., 8% in the present study) of child psychiatry outpatients, their typically severe impairment seems to warrant attention in order to ensure their safety and to maximize their response to treatment.

Study findings also suggest that PTSD should be carefully assessed when polyvictimized child psychiatry outpatients are identified. Polyvictimized children may present for outpatient psychiatric services with more prominent externalizing behavior problems than internalizing symptoms such as anxiety or dysphoria—therefore, PTSD may be overlooked, and opportunities to address traumatic stress as a contributing factor to behavior problems may be missed (Ford et al., 2000). PTSD symptoms warrant careful assessment as a possible contributor to externalizing problems for polyvictimized children in outpatient psychiatric treatment. However, in order to address polyvictims' impairment and externalizing problems, adaptations to evidence-based treatments for pediatric PTSD such as trauma-focused cognitive behavior therapy (TF-CBT) may be needed, because traumatized children with externalizing behavior problems have been found to be difficult to treat for PTSD (Cohen, Berliner, & Mannarino, 2010). PTSD treatment also may need to address a broader range of sequelae than PTSD (e.g., emotion dysregulation, dissociation, and disorganized attachment; Cook et al., 2005; Ford, 2005) in order to reduce the severe psychosocial impairment characterizing polyvictimized child psychiatry outpatients.

Implications for Research

From a research perspective, the study replicates prior clinical (Ford et al., 2009) and epidemiological (Ford et al., 2010; Higgins, 2004) investigations, showing that empirically derived profiles of victimization can be used to identify distinct subgroups of polyvictims. The 8% prevalence of polyvictimization found in these studies is comparable to the 8% “high” polyvictimization subgroup identified by Finkelhor and colleagues (2007) and the 8–17% subgroups identified in empirical classification studies (Ford et al., 2009, 2010; Higgins, 2004). It appears that there is a subgroup of polyvictimized children, in clinical as well as community populations, which is characterized by revictimization across several domains of maltreatment and childhood adversity. Other studies have shown that even repeated or prolonged exposure to a single type of victimization does not appear to be as harmful psychologically and behaviorally as polyvictimization (Elliott et al., 2009; Finkelhor et al., 2007; Richmond et al., 2009). This was not assessed in the present study nor in a prior study with child psychiatric inpatients (Ford et al., 2009), so further studies are

needed with child psychiatry samples in which revictimization or prolonged victimization within a single domain of maltreatment or adversity are assessed as well as polyvictimization across multiple domains. Further research also is needed to determine if the patterns of co-occurrence of specific forms of victimization within broad victimization domains (e.g., different forms of sexual victimization such as harassment, rape, and non-penetration assault) that were identified in at-risk (Reid & Sullivan, 2009) and representative community (Finkelhor, Hamby, Ormrod, & Turner, 2005) samples of children can be replicated in clinical populations. Clinically, the specific nature of adversity or maltreatment is important to determine in order to individualize treatment, but research is needed to guide these decisions. For example, research could demonstrate if and how variants of polyvictimization with different specific victimization events (e.g., Teicher, Samson, Polcari, & McGreenery, 2006) or perpetrators (Higgins, 2004; Reid & Sullivan, 2009) lead to varied diagnostic profiles, impairments, and treatment outcomes.

Research on treatment of maltreated children has not systematically distinguished polyvictims in order to determine if their response to the various treatment options differs from that of children who have been maltreated but not polyvictimized (Ford, Steinberg, Hawke, Levine, & Zhang, in press; Harvey & Taylor, 2010). Studies with adults suggest that treatment requires adaptation to address the complex sequelae of polyvictimization (e.g., Ford & Kidd, 1998; Nemeroff et al., 2003). With both adults (Resick, Monson, & Gutner, 2007) and children (Saxe, MacDonald, & Ellis, 2007), although evidence-based cognitive behavior therapy has been shown to have benefits across a range of severity and complexity of trauma histories, adaptations for patients with polyvictimization histories are commonly recommended to avoid iatrogenesis and enhance therapeutic alliance, engagement, and retention (Ford & Cloitre, 2009).

Limitations of the Present Study

A convenience sample rather than a fully representative sample was utilized, restricted to patients from one child and adolescent psychiatric outpatient clinic; thus, the results cannot be assumed to be generalizable to the outpatient child psychiatry population in general or to more severely impaired (e.g., residential or inpatient psychiatric) populations. They included children with other psychiatric diagnoses than anxiety, affective, and behavioral disorders, but not in sufficient numbers to determine if the relationships hold for children with more severe psychiatric disorders (e.g., psychotic or autism spectrum disorders). Childhood adversity data were based on parent/caregiver's retrospective reports, although maltreatment data were based on documented child protection involvement so as to reduce retrospective reporting biases associated with self- or collateral-reported maltreatment (Widom et al., 2007). However, official maltreatment data may include false positives (e.g., allegations that are investigated but unsubstantiated) or false negatives (e.g., nondisclosure by parent/caregiver).

Psychometrically validated structured interviews might yield more accurate and valid diagnostic and victimization data, although the *DSM-IV*-guided approach of diagnosis by interviewer-expert consensus and the use of the CBCL and CGI measures enhanced the methodological rigor of those data. It also should be noted that the failure to find a relationship between clinically severe internalizing problems and polyvictimization may be an artifact of including only the parent/caregiver as the source of data on internalizing problems. Adults are likely to be better able to accurately identify overt psychosocial impairment or externalizing behavior problems than internalizing symptoms. Therefore, future studies should include children's self-reported internalizing symptoms before concluding that there is no relationship between polyvictimization and internalizing problems.

Although children characterized as polyvictims were identified empirically, based on a high likelihood of having a history of maltreatment and adversity, victimization was not assessed with the degree of specificity in some prior studies (e.g., Finkelhor et al., 2007; Higgins, 2004). The maltreatment and risk factor variables used in this study are consistent with prior studies on childhood adversity (e.g., Anda et al., 2006; Finkelhor et al., 2007; Rutter et al., 2001); however, it cannot be stated definitely that these variables specifically represent traumatic victimization. This is particularly true for parental impairment and multiple out-of-home placements that, although consistently associated with childhood maltreatment and adversity (Ford et al., 2009; Rutter et al., 2001), are not specific forms of victimization. Future studies should assess specific traumatic events (e.g., Ford et al., 2010), maltreatment characteristics (e.g., Higgins & McCabe, 2000; Reid & Sullivan, 2009; Teicher et al., 2006; e.g., perpetrator, developmental timing of onset, duration, victim vs. witness, emotional abuse, and neglect), and family characteristics related to maltreatment (e.g., parental suicidality, family conflict; Higgins & McCabe, 2000).

Although this report focused on identifying and examining characteristics and outcomes of polyvictimization, the two other trauma-exposed subgroups warrant further examination. A future report will compare those subgroups to the polyvictim and low adversity subgroups in order to more fully elucidate the types and impacts of victimization.

Conclusion

Polyvictims represent a subgroup of children in outpatient psychiatric treatment, who warrant particular clinical and research attention due to impairment and externalizing problems that, with one exception, do not appear to be accounted for by their documented psychiatric disorders. The exception was that PTSD may account for polyvictims' externalizing problems. Thus, polyvictims should be identified in child psychiatry samples, and treatment for PTSD and complex traumatic stress symptoms warrants further investigation to address these children's potentially severe psychosocial impairment and externalizing behavior problems.

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