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Concordance Between Self-Reported Childhood Maltreatment Versus Case Record Reviews for Child Welfare–Affiliated Adolescents: Prevalence Rates and Associations With Outcomes

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Abstract

The present study used data from an ongoing longitudinal study of the effects of maltreatment on adolescent development to (1) describe rates of maltreatment experiences obtained from retrospective self-report versus case record review for adolescents with child welfare–documented maltreatment histories, (2) examine self-reported versus child welfare–identified maltreatment in relation to mental health and risk behavior outcomes by maltreatment type, and (3) examine the association between the number of different types of maltreatment and mental health and risk behavior outcomes. Maltreatment was coded from case records using the Maltreatment Case Record Abstraction Instrument (MCRAI) and participants were asked at mean age = 18.49 about childhood maltreatment experiences using the Comprehensive Trauma Interview (CTI). Results showed that an average of 48% of maltreatment found by the MCRAI for each type of maltreatment were unique cases not captured by the CTI, whereas an average of 40% self-reported maltreatment (CTI) was not indicated by the MCRAI. Analyses with outcomes showed generally, self-reported maltreatment, regardless of concordance with MCRAI, was related to the poorest outcomes. The difference in associations with the outcomes indicates both self-report and case record review data may have utility depending on the outcomes being assessed.

Keywords

maltreatment; case records; self-report

Despite a substantial amount of research and public health attention devoted to the prevention of child maltreatment, prevalence rates are still unfortunately high. In the United States in 2013, 3.5 million children were referred to child welfare agencies for investigation

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and of those, 679,000 children were identified as victims of maltreatment by child welfare agencies (U.S. Department of Health and Human Services, 2015). The Fourth National Incidence Study of Child Abuse and Neglect (Sedlak et al., 2010) indicated incidence rates per 1,000 children of 6.5 for physical abuse, 2.5 for sexual abuse, 4.1 for emotional abuse, and 30.6 for neglect. However, many maltreated children never come to the attention of child welfare, therefore the prevalence rates using child welfare–documented maltreatment is likely an underestimate of the actual prevalence of child maltreatment (Gilbert et al., 2009). Self-reports of maltreatment tend to indicate higher prevalence. For example, in a nationally representative population of young adults, self-report of childhood maltreatment prior to the sixth grade indicated rates of physical abuse at 28.4%, physical neglect at 11.8%, and contact sexual abuse at 4.5% (Hussey, Chang, & Kotch, 2006). This study also found that 41.5% of respondents stated that they were left alone when they should not have been, which may represent supervisory neglect. However, prevalence of multitype maltreatment was not reported. Higher maltreatment prevalence via self-report may be a result of maltreatment instances that would not reach the severity standards for referral to child protection. Overall, these data indicate that estimates of the prevalence of child maltreatment can vary depending on how child maltreatment information is obtained, which has implications for the ability of researchers to clearly delineate the effects of maltreatment experiences.

Given the discrepancies in incidence rates between sources, a number of studies have examined concordance between reporting methods to determine which may be more “accurate.” An analysis of adult retrospective reports of childhood maltreatment found a considerable rate of false negatives and substantial measurement error when self-reports were compared to sibling reports, parent reports, and official records from hospitals, courts, and schools, although the authors concluded that it was unlikely there were many false positive reports (Hardt & Rutter, 2004). In a study of sexually abused children, researchers found that children’s report of a false negative was found in 57% of confirmed sexual abuse cases, and disclosure was more likely if the caretaker expressed an attitude that their child had possibly been sexually abused (Lawson & Chaffin, 1992). In two studies that compared adult recollections of victimizations to child welfare records, there was underreporting of physical abuse and sexual abuse experiences compared to court-substantiated maltreatment (Widom & Morris, 1997; Widom & Shepard, 1996).

It is possible that the length of time between the retrospective recall of child maltreatment and the actual experience may affect the validity of self-reported maltreatment. For example, adolescent reports of childhood physical abuse prior to 12 years old had moderate agreement with their parents’ report of physical discipline (Tajima, Herrenkohl, Huang, & Whitney, 2004). Although another study found that when self-report of maltreatment experiences during adolescence was compared to caretaker report and child welfare records, there was substantial disagreement in severity and type of maltreatment experienced (McGee, Wolfe, Yuen, Wilson, & Carnochan, 1995). In this study, adolescents concurred with the agency reports regarding existence of sexual abuse, but there was less agreement in physical abuse and neglect cases. It may be that adolescents fail to recognize certain behaviors as maltreatment. For example, punitive punishment may be the norm for a particular family and not understood as excessive and thus constituting maltreatment. A study by Wekerle and colleagues (2001) found that a substantial number of youth (18% of a Child Protective

Services (CPS) sample) who positively endorsed the item “people in my family hit me so hard it left bruises or marks” did not self-label as being physically abused. Therefore, self-report may be an equally valid source of maltreatment data as case record review, but the evidence indicates the perception of maltreatment experiences may contribute to the discrepancies between official and self-report. Whether one method is more valid than the other cannot be determined because self-report is based on subjective perception of experiences. The key question becomes whether one method is a better predictor of the negative outcomes that have been consistently linked with childhood maltreatment.

It has been well established that there is poor concordance between self-reported versus case record reports. Therefore, it is important to delineate whether retrospective self-report or information from official case records is the best indicator of how maltreated children fare in the short- and long term. A number of studies have considered this question, with mixed results. An analysis of 160 adolescents with open CPS cases showed that adolescent self-report was a better predictor of internalizing and externalizing problems relative to social workers’ rating of case records (McGee et al., 1995). In a sample of 170 participants followed from birth to age 19, those with concordance between self-reported and prospective maltreatment (CPS involvement and parent interviews) reported the most emotional and behavioral problems in adolescence (Shaffer, Huston, & Egeland, 2008). Widom, Weiler, and Cottler (1999) compared official substantiated reports of maltreatment to self-report as predictors of drug use in adulthood. They found the highest rates of drug use for those individuals with concordance between self- and official report, but the lowest levels for those with official report but no self-report. Similarly, Smith, Ireland, Thornberry, and Elwyn (2008) found that concordance between official and self-report of maltreatment was associated with nonviolent delinquency and drug use, whereas official report was related to violent offending and arrest. Adding protective services information to parent and child reports of trauma history allowed researchers to diagnosis significantly more cases of post-traumatic stress disorders (PTSDs) in school-age and young adolescent children. Without information from the child protective records, 50% of physical and sexual abuse experiences were missed (Grasso et al., 2009). Determining whether one source of maltreatment data is more informative in predicting outcomes is integral for assessing and treating victims of maltreatment, yet the data indicate both self-report and case records may be necessary to predict outcomes.

A limitation of these prior studies is that multiple types of maltreatment were combined into one variable. Few studies have examined the source of maltreatment information by maltreatment type, most likely due to small cell sizes for each type in most samples, limiting the ability to analyze all maltreatment types within one study. Cohen, Brown, and Smailes (2001) found that participants with only self-reported physical abuse were the least symptomatic whereas those with official physical abuse cases showed an increasing pattern of externalizing problems and substance use in adulthood (Cohen, Brown, & Smailes, 2001). In a study of sexual abuse, the associations with psychiatric diagnoses (major depression, anxiety, and PTSD) were slightly stronger with self-reported childhood sexual abuse (CSA) than with child welfare agency-notified CSA (Mills, Kisely, Alati, Strathearn, & Najman, 2016). On the other hand, McGee, Wolfe, and Wilson (1997) examined all maltreatment types and found that concordance between self- and official report for sexual and

psychological abuse was the best predictor of externalizing and internalizing symptoms, respectively. There were no differences by report method for neglect or physical abuse.

Overall, the extant evidence indicates that official reports may be capturing more serious maltreatment experiences, lending support to the use of both sources of information to obtain complete maltreatment histories (Smith, Ireland, Thornberry, & Elwyn, 2008). Additionally, concordance between official and self-report seems to be the best predictor of negative outcomes, although this may vary by type of maltreatment or outcome variable. As of yet, only one study examined report methodology for all maltreatment types (i.e., sexual abuse, physical abuse, emotional abuse, neglect) but did not examine multi-type maltreatment (McGee, Wolfe, & Wilson, 1997). There is still a gap in knowledge as to the concordance between maltreatment data obtained from self-report versus case record review for individual maltreatment types and how each data source relates to the prediction of outcomes based on the type of maltreatment experienced. Additionally, we know little about the association between self-report versus case record reported multi-type maltreatment and outcomes. The present study used data from a large-scale longitudinal study using a well-validated method of abstracting information from case records. In addition, outcomes in both mental health and risk behavior were considered, as they may have different associations with specific maltreatment types. For example, physical abuse in particular is associated with delinquency and substance use (Smith et al., 2008; Widom, Weiler, & Cottler, 1999).

The purpose of the present study was to (1) compare the rates of self-reported maltreatment types to child welfare–identified maltreatment types (i.e., sexual abuse, physical abuse, emotional abuse, neglect), for adolescents with child welfare–documented maltreatment histories, (2) examine differences in mental health and risk behavior outcomes associated with the method of maltreatment assessment (i.e., self-report vs. case record review) by type of maltreatment, and (3) examine the association between the number of different types of maltreatment and mental health and risk behavior outcomes. Based on the existing literature, we expected that agreement between data sources would be highest for sexual abuse and lowest for the less obvious types such as emotional abuse and neglect. Rates of maltreatment would be highest when combining data from both sources. Those adolescents with concordance between self-report and case records would have the highest levels of mental health symptoms and risk behaviors. There is not enough extant data to develop hypotheses regarding associations by maltreatment types. Lastly, those with more types of maltreatment would have poorer functioning. Although the literature agrees that each type of reporting method provides unique information, the current study examines the prediction of outcomes by each reporting source by type of maltreatment and by multi-type maltreatment. Identifying the best predictors for various outcomes will help reconcile disparate findings and clarify the methods for assessing at-risk individuals.

Method

Participants

Data were from the first and fourth assessments ($M = 7.2$ years after baseline) of an ongoing longitudinal study examining the effects of maltreatment on adolescent development. The enrolled sample was 303 adolescents aged 9–13 years (152 males and 151 females). Of the

original sample, 73% completed the Time 4 assessment ($N = 221$). At Time 4, the participants were at mean age of 18.49 years ($SD = 1.41$), approximately evenly split between males and females, and primarily African American (43%) or Latino (34%). Sample demographics can be found in Table 1. Attrition analyses indicated participants not seen at Time 4 were more likely to be male (odds ratio = 1.86, $p < .01$).

Recruitment—Participants were recruited from active cases in the Children and Family Services (CFS) of a large U.S. west coast city. The inclusion criteria were (1) a new substantiated referral to CFS in the preceding month for any type of maltreatment; (2) child age of 9–12 years (note some children turned 13 years old between when they were enrolled and interviewed); (3) child identified as Latino, African American, or Caucasian (non-Latino); and (4) child residing in 1 of the 10 zip codes in a designated county at the time of referral to CFS. With the approval of CFS and the institutional review board of the affiliated university, potential participants were contacted. Of the families referred by CFS, 77% agreed to participate.

Procedures

Assessments were conducted at an urban research university. After assent and consent were obtained from the adolescent and caretaker, respectively, the adolescent was administered questionnaires and tasks during a 4-hr protocol. Both the child and caretaker were paid for their participation according to the National Institutes of Health standard compensation rate for healthy volunteers.

Measures

Case record maltreatment classification—Computerized case records were obtained to determine the various types of maltreatment experienced by participants. Five previous years of case records were available for abstraction from the CFS system, although for some children, the first report was more proximal to their study entry. The Maltreatment Case Record Abstraction Instrument (MCRAI), a comprehensive database using SPSS Data Entry Builder 3.0, was developed to collect the information in the case records. The MCRAI is based on the Maltreatment Classification System (MCS; Barnett, Manly, & Cicchetti, 1993) and the LONGSCAN Modified Maltreatment Classification System (MMCS; English & the LONGSCAN Investigators, 1997). These classification system categorizations for each type of maltreatment were congruent with the definitions for the local child welfare department but also included characterizations of maltreatment from the extant research. The MCRAI was designed to include specific data on a child's experience as detailed in official records to allow the categorization of maltreatment experiences in quantifiable terms (a copy of the MCRAI is available upon request). The MCRAI descriptions differ from the MCS and the MMCS in that the MCRAI describes the details of the child's experiences and the MCS and MMCS use the child's experiences to categorize the severity of the maltreatment. The MCRAI codes four major forms of maltreatment (i.e., physical abuse, sexual abuse, emotional abuse, and neglect) and is based on maltreatment acts experienced by the child rather than on child outcomes from the maltreatment acts, for example, a child's injury. Furthermore, along with the four forms of maltreatment, three more categories were included in MCRAI. One category included caretaker incapacity (e.g., due to hospitalization,

unknown whereabouts, incarceration) and another category included caretaker's inability to provide adequate care for the child (e.g., due to caregiver's mental illness, substance use, or physical illness). The substantial risk designation was also included, because it applied to instances in which no clear allegation of maltreatment existed for the child but circumstances put the child at risk of maltreatment (e.g., a sibling was abused or neglected). For this analysis, we dropped caretaker incapacity, caretaker inability to provide adequate care for the child, and substantial risk designations, as they were not present in the self-report measure.

The database for the MCRAI included the original CFS categorization of each report of maltreatment, all CFS allegations of maltreatment, and the investigation status (i.e., whether or not the allegations were confirmed). A new record was created for each new report of maltreatment that included relevant data for that particular report. Unsubstantiated cases of maltreatment have been found to differ little from substantiated cases; thus all maltreatment allegations were included to more accurately reflect the child's experience (Drake, 1996; Hussey et al., 2005).

Procedures for abstracting child maltreatment case records—Agency records, including emergency referral information, screener descriptions, investigation narratives, contact sheets, and court reports were reviewed by two retired CFS supervisors. The records included any maltreatment reports in the case records prior to entrance into the study and the case record that led to entrance into the study. The CFS supervisors provided a summary of each youth's case along with the full case records. Trained social work master's students and psychology undergraduate students entered the data from the CFS case records into the MCRAI database. When there were multiple types of maltreatment, the abstractors entered the details of each type of maltreatment in the corresponding section for that type of maltreatment. The child was the unit of analysis; thus even if the same maltreatment occurred for siblings, each youth's experience was entered individually.

Trained PhD students checked the summary provided by the CFS consultants and any inconsistencies were resolved by reviewing the original case records. Group decision-making occurred to modify entries when needed. Interrater agreement was checked for the five abstractors using 80 randomly chosen records. These 80 records were coded by two abstractors. This yielded good κ statistics of .82, .82, .79, and .75 for physical abuse, sexual abuse, emotional abuse, and neglect, respectively.

Self-Reported Comprehensive Trauma Interview (CTI)

The CTI (Noll, Horowitz, Bonnano, Trickett, & Putnam, 2003) was used to at Time 4 to assess self-reported lifetime maltreatment experiences. The CTI assesses 19 different potentially traumatic experiences including sexual abuse, physical abuse, emotional abuse, and neglect. The definitions are primarily based on extant research but incorporate definitional standards from child welfare agencies. The CTI is administered via interview by a trained research assistant. For any experience the participant indicated occurred to them, follow-up questions were asked detailing the perpetrator (if applicable), frequency, age(s), and duration. Sexual abuse was assessed with 1 item "Has anyone ever done something

sexually to you that you didn't want?" (this question was not restricted to adult perpetrators and may include sexual assault by peers). Physical abuse was assessed with one question "Have you ever been hit or beaten by any adults?" Emotional abuse was assessed with 5 items covering different facets of emotional abuse such as "Have there been times when adults said mean or insulting things to you?" or "Have you ever felt rejected by your family?" Lastly, neglect was assessed with six questions assessing different facets of neglect such as "Have there been times when you did not have enough to eat; did not have clothes, medicine, or medical attention; or didn't have a place to sleep?" or "Have there been times when grown-ups have given you drugs or alcohol?" For those scales with more than one question if the participant indicated affirmative on any 1 item, they were coded as having experienced that type of maltreatment. Therefore, for each type of maltreatment, every participant received a final code of 0 for absent and 1 for present. Additionally, to better compare the self-reported maltreatment experiences with case record data, we selected only those maltreatment experiences that occurred prior to entry into the study up until within 1 year of enrollment. This method is limited by accuracy of recall but is the best representation of the maltreatment experiences that occurred during the same time period as the maltreatment data abstracted from the case records. All mental health and risk behavior measures were collected at Time 4.

Mental Health

Depressive symptoms at Time 4 were measured using the 27-item Children's Depression Inventory (Kovacs, 1992). The range of possible scores is 0–54. Test–retest for the Children's Depression Inventory has been adequate in various samples and the instrument has been shown to correlate strongly with other measures of childhood depressive symptoms.

PTSD symptoms at Time 4 were assessed using the Youth Symptom Survey Checklist (Margolin, 2000), a 17-item self-report measure of the PTSD symptoms such as hyperarousal, avoidance/numbness, and reexperiencing (e.g., had bad dreams or nightmares). The total score is used for this analysis (39 items; $\alpha = .88$) and can range from 17 to 68.

Anxiety at Time 4 was measured with the 39-item Multidimensional Anxiety Scale for Children (March, Parker, Sullivan, Stallings, & Conners, 1997). Test–retest reliability ranged from .70 to .93 and the measure has shown good discriminant validity.

Risk Behavior

Adolescents reported their substance use and delinquency at Time 4 using the Adolescent Delinquency Questionnaire (adapted from Huizinga & Elliott, 1986). Marijuana use was captured by 1 item that asked about frequency of marijuana or hashish use during the previous 12 months. Similarly, alcohol use was a single item that asked about the frequency in the past 12 months. Response options were 0, 1, 2, 3, 4, and 5 or more times.

Delinquency was assessed using two scales from the original questionnaire: person offenses (7 items, e.g., "attacked someone with a weapon or with the idea of seriously hurting them," $\alpha = .74$) and property offenses (10 items, e.g., "damaged or destroyed someone else's

property on purpose,” $\alpha = .92$). All questions had six possible answers: 0, 1, 2, 3, 4, and 5 or more times during the previous 12 months. Scores had a possible range of 0–35 on the person offense scale and 0–50 on the property offense scale.

Data Analyses

χ^2 tests were used to examine whether there were significant differences in the percentage within the maltreated sample that had MCRAI-identified maltreatment compared to self-reported maltreatment experiences. Agreement between self-reported and MCRAI-identified maltreatment was calculated using Cohen’s κ for each type of maltreatment.

To examine associations with the outcomes, we used multivariate analysis of covariance (MANCOVA) to examine differences for each maltreatment type (i.e., neglect, emotional abuse, sexual abuse, physical abuse) between those participants with (a) only CTI reported maltreatment, (b) only MCRAI reported maltreatment, (c) both CTI and MCRAI reported maltreatment, and (d) no maltreatment of that type. Two models were calculated, one with mental health outcomes (depression, PTSD, and anxiety) and the second with risk behavior outcomes (marijuana use, alcohol use, delinquency). Post hoc pairwise comparisons were examined using the Sidak adjustment for multiple comparisons. Similarly, MANCOVA was also used to examine differences between number of maltreatment types (i.e., 0 types, 1 type, 2 types, 3 types, 4 types) for the mental health (depression, PTSD, and anxiety) and risk behavior outcomes (marijuana use, alcohol use, delinquency). All multivariate models controlled for age at Time 4 and sex.

Results

Comparing Rates of Maltreatment Types From the MCRAI Versus the CTI

Crosstab calculations are shown in Table 2 comparing the number of participants on the MCRAI versus CTI reporting each type of maltreatment for the maltreated group. Based on the χ^2 tests, a similar proportion of participants had maltreatment reported on the MCRAI as well as on the CTI (for any type). However, when examining the cells, of those who were identified by the MCRAI as experiencing sexual abuse ($n = 46$), only 23 (50% of those who had MCRAI sexual abuse) self-reported sexual abuse on the CTI. Therefore, there were 23 adolescents who did not self-report sexual abuse but an incident of sexual abuse was in their administrative record. Of those with MCRAI-identified physical abuse ($n = 112$), only 50 (44%) reported physical abuse on the CTI. For MCRAI-identified emotional abuse ($n = 117$), only 75 (64%) also reported emotional abuse on the CTI. Lastly, for MCRAI-identified neglect ($n = 166$), only 84 (51%) self-reported neglect on the CTI. (Note these data include allegations as well as substantiated cases.)

We also examined those who reported maltreatment on the CTI and overlap with the MCRAI. Of those who self-reported sexual abuse ($n = 47$), 48% had sexual abuse identified by the MCRAI. Thus, there were 26 adolescents who self-reported sexual abuse that was not in the case records. For self-reported physical abuse ($n = 86$), 57% overlapped with physical abuse from the MCRAI. Of those who self-reported emotional abuse ($n = 130$), 56% were

also captured by the MCRAI data. Lastly, for those who reported neglect ($n = 108$), 78% were also identified by the MCRAI as experiencing neglect.

Agreement between maltreatment reported on the CTI versus the MCRAI was low, with Cohen's κ s of .37 for sexual abuse, .11 for physical abuse, .09 for emotional abuse, and .05 for neglect. These results indicate there is substantial discrepancy between maltreatment reported in case records and self-report. Overall, an average of 48% of the maltreatment found by the MCRAI for each type were unique cases not captured by the CTI, whereas an average of 40% across all maltreatment types that were self-reported on the CTI were unique and not indicated by the MCRAI. Combining the rates of each maltreatment type from the MCRAI and the CTI self-report resulted in higher prevalence of each type than either one alone. The combined prevalence rates for sexual abuse, physical abuse, emotional abuse, and neglect were 33%, 68%, 80%, and 87%, respectively.

Number of Maltreatment Types

When each of the maltreatment types from the MCRAI was summed, 96% of the maltreated group had experienced one of the main four types of maltreatment (i.e., sexual, physical, emotional, neglect). There were nine cases that were identified by the MCRAI as “at-risk” and therefore did not have a main maltreatment type. Of the total maltreated sample, 29% experienced 1 type, 34% experienced 2 types, 25% experienced 3 types, and 8% experienced 4 types. Therefore, according to data from case records, 67% experienced multiple types of maltreatment (see Table 3).

For the self-report of maltreatment types on the CTI, 25% of the maltreated sample said they did not experience any maltreatment. Twenty-four percent experienced 1 type, 19% experienced 2 types, 20% experienced 3 types, and 12% experienced 4 types. Summarizing this data, 51% self-reported that they experienced multiple types of maltreatment.

Association Between Maltreatment Report Methodology and Mental Health Outcomes

Sexual abuse—For youth with sexual abuse histories, the results of the MANCOVA showed a significant main effect of group on depressive symptoms, $F(3, 210) = 3.54, p < .05$, and PTSD, $F(3, 210) = 3.62, p < .05$. Post hoc pairwise comparison indicated that the CTI-only group reported significantly higher depressive symptoms ($M_{\text{adj}} = 11.12, SE = .78$) than the group with no sexual abuse ($M_{\text{adj}} = 8.96, SE = .54$). For PTSD, the CTI-only group reported the highest levels of PTSD ($M_{\text{adj}} = 35.18, SE = 2.10$), followed by the MCRAI-only group ($M_{\text{adj}} = 33.12, SE = 2.08$), both of which were significantly different from the group without sexual abuse ($M_{\text{adj}} = 28.63, SE = .85$).

Physical abuse—The results showed only a significant main effect of group on PTSD, $F(3, 210) = 2.90, p < .05$. Post hoc analyses indicated the group with both CTI and MCRAI-reported physical abuse had the highest levels of PTSD ($M_{\text{adj}} = 33.31, SE = .149$), which was significantly different from the MCRAI-only group ($M_{\text{adj}} = 29.56, SE = 1.31$).

Emotional abuse—There were no significant main effects of emotional abuse on mental health, there was only a trend effect on PTSD, $F(3, 210) = 2.62, p < .08$, with the MCRAI

and CTI group ($M_{adj} = 32.22$, $SE = .1.20$) being higher than the MCRAI-only ($M_{adj} = 27.29$, $SE = .1.57$) and no emotional abuse groups ($M_{adj} = 28.22$, $SE = 1.52$).

Neglect—There were no significant main effects of neglect on mental health, there was only a trend effect on anxiety, $F(3, 210) = 2.62$, $p < .08$, with the MCRAI and CTI group ($M_{adj} = 34.32$, $SE = .1.255$) being higher than the MCRAI-only group ($M_{adj} = 29.47$, $SE = .1.53$; see Table 4).

Association Between Maltreatment Report Methodology and Risk Behavior Outcomes

Sexual abuse—There were significant main effects of sexual abuse on marijuana use, $F(3, 210) = 4.05$, $p < .01$, person offenses, $F(3, 210) = 3.09$, $p < .05$, and property offenses, $F(3, 210) = 3.19$, $p < .05$. For marijuana use, the MCRAI-only group ($M_{adj} = 2.54$, $SE = .44$) and the MCRAI and CTI group ($M_{adj} = 2.91$, $SE = .46$) were higher than the no sexual abuse group ($M_{adj} = 1.46$, $SE = .18$). For both types of delinquency, there was a similar pattern, the CTI-only group and the MCRAI-only group were higher than the no sexual abuse group (for adjusted means, see Table 5).

Physical abuse—There were significant main effects of physical abuse on alcohol use, $F(3, 210) = 5.20$, $p < .01$, person offenses, $F(3, 210) = 5.63$, $p < .01$, and property offenses, $F(3, 210) = 3.79$, $p < .05$. For alcohol use, the CTI-only group ($M_{adj} = 3.09$, $SE = .36$) and the MCRAI and CTI group ($M_{adj} = 2.48$, $SE = .30$) were significantly higher than the MCRAI-only group ($M_{adj} = 1.49$, $SE = .27$). The pattern for person and property offenses was similar, with the CTI-only group and the MCRAI and CTI group being significantly higher than the no physical abuse group (for adjusted means, see Table 5).

Emotional abuse—The results showed a significant main effect on alcohol use, $F(3, 210) = 4.40$, $p < .01$, with the CTI only group ($M_{adj} = 2.62$, $SE = .29$) and the MCRAI and CTI group ($M_{adj} = 2.26$, $SE = .25$) being higher than the MCRAI-only group ($M_{adj} = 1.09$, $SE = .33$). There was a trend effect for person offenses, $F(3, 210) = 2.31$, $p < .08$, with the CTI-only group ($M_{adj} = 1.71$, $SE = .17$) being significantly higher than the MCRAI-only group ($M_{adj} = 1.02$, $SE = .20$).

Neglect—There were no significant results for neglect on the risk behavior outcomes.

Number of Maltreatment Types and Mental Health Outcomes

Self-report CTI—There were significant main effects of number of maltreatment types on depressive symptoms, $F(4, 218) = 3.81$, $p < .01$, and PTSD, $F(4, 218) = 3.81$, $p < .01$. For both outcomes, the groups with 3 and 4 self-reported maltreatment types had significantly higher scores compared with the groups with 0, 1, or 2 maltreatment types (for adjusted means, see Table 6).

MCRAI-coded maltreatment—There were no significant effects of number of maltreatment types on any of the mental health outcomes.

Number of Maltreatment Types and Risk Behavior Outcomes

Self-report CTI—There were significant main effects of number of maltreatment types on alcohol use, $F(4, 218) = 3.66, p < .01$, and person offenses, $F(4, 218) = 2.55, p < .05$. For both outcomes, the groups with 2, 3, and 4 self-reported maltreatment types had significantly higher scores compared with the group with no self-reported maltreatment types (see Table 6).

MCRAI-coded maltreatment—There were no significant effects of number of maltreatment types on any of the risk behavior outcomes.

Discussion

Self-reported maltreatment experiences are often used in research as a predictor of child and adolescent functioning. However, few studies examine the concordance of self-report with information gathered from official case records to evaluate whether one methodology yields better predictive power regarding outcomes. The purpose of the current study was to compare prevalence rates indicated by self-reported maltreatment experiences versus data abstracted from case records for child welfare-involved youth and examine the association between the method of maltreatment identification and mental health and behavioral outcomes in adolescence.

Concordance Between Case Record and Self-Reported Maltreatment

Results showed that an average of 48% of the maltreatment found by the MCRAI for each type of maltreatment were unique cases not captured by the CTI, whereas an average of 40% of self-reported maltreatment on the CTI for each type were unique and not indicated by the MCRAI. Concordance between CTI and MCRAI was highest for neglect and emotional abuse and lowest for physical and sexual abuse. This was counter to our expectations and may be due to less stigma associated with the experiences that encompass emotional abuse and neglect (Mennen, Kim, Sang, & Trickett, 2010; Trickett, Mennen, Kim, & Sang, 2009). Adolescents may be less willing to disclose sexual abuse or physical abuse, as those experiences are often associated with feelings of shame or guilt (Feiring & Taska, 2005; Hoglund & Nicholas, 1995; Stuewig & McCloskey, 2005).

Overall, these results show that for child welfare-involved youth, there is substantial discrepancy between maltreatment information abstracted from case records versus self-report. This demonstrates that not all maltreatment is known by CFS and prevalence rates may be higher than indicated by official statistics (Gilbert et al., 2009). The low agreement between the CTI and MCRAI on all maltreatment types also indicates that information from case records and self-report may provide unique data not captured by the other source. It is possible that those who fail to report maltreatment that was coded as present by the MCRAI may have forgotten the experiences, may not recognize the experience as maltreatment, or may be ashamed to disclose (Paine & Hansen, 2002). The MCRAI identified more individuals with at least one type of maltreatment and more cases of polyvictimization compared to the CTI. Not surprisingly, the most cases of maltreatment were identified using a combination of self-report and case record reviews which is consistent with other studies

(Brown, Cohen, Johnson, & Salzinger, 1998; Smith et al., 2008). In at least one study, the prospective method of identifying child maltreatment with child welfare records proved to be the most comprehensive for identifying the most cases of childhood physical abuse, sexual abuse, and neglect (Shaffer et al., 2008). However, in the same Shaffer, Huston, and Egeland (2008) study, using self-report of maltreatment during late adolescence combined with case record review found the most incidences of maltreatment, indicating that the use of only retrospective self-report or official case record review may underestimate actual prevalence rates. Official reports of maltreatment may contain more severe experiences than self-report or maltreatment instances that may not reach the criteria for reportable events, thus the use of both methods may capture a more complete spectrum of the variation in maltreatment experiences.

Maltreatment Report Methodology and Outcomes

Contrary to our hypothesis, concordance between CTI and MCRAI did not unequivocally portend the worst outcomes. In general, when the adolescents self-identified physical, sexual, or emotional abuse, their outcomes were poorer. This differs from Cohen et al.'s (2001) study of physical abuse where those with self-report were the least symptomatic and those with official physical abuse cases showed an increasing pattern of externalizing problems and substance use in adulthood. In our sample, the group with concordance between CTI and MCRAI-reported physical abuse had higher PTSD symptoms than the group with physical abuse only recorded by the MCRAI. For the risk behavior outcomes, the group that self-reported physical abuse and the group with concordance between the CTI and MCRAI had the highest levels of delinquency and alcohol use.

Our findings regarding sexual abuse were also discordant with extant evidence. We found those participants with either self-reported or MCRAI-reported sexual abuse had higher PTSD than those with no sexual abuse, whereas Elliot and Briere (1994) found that an official report of sexual abuse (without self-report) was related to lower PTSD symptomatology compared to those who disclosed the abuse. In this instance, the authors suggest that denial was protective in term of trauma symptoms (Elliott & Briere, 1994). We also found those participants with only self-report of sexual abuse had more depressive symptoms than those with no sexual abuse. Delinquency followed a similar pattern, whereas marijuana use was highest for the groups with only MCRAI report or concordance between CTI and MCRAI. The relationship of sexual abuse to outcomes in this study was convoluted, with little discernable pattern between report methodology and outcomes. In general, these results indicate that any report of sexual abuse (regardless of the source) will result in poorer outcomes than other types of maltreatment.

The results for emotional abuse and neglect only reached trend level for mental health. However, participants with only self-reported emotional abuse and the group with concordance between methods had the highest levels of alcohol use compared with the MCRAI-only group. Also, self-report but not child welfare documentation of more total types of maltreatment was associated with poorer mental health and behavioral outcomes. This self-identification of polyvictimization is powerful and may have long-term effects (Arata, Langhinrichsen-Rohling, Bowers, & O'Brien, 2007). Perhaps in our study, self-

report actually indicates more severe instances of these maltreatment types or more easily recognized as abuse by the victim. Adolescents' self-identification of sexual abuse and physical abuse experiences may be associated with poorer outcomes because of the distinctiveness of those types of maltreatment and potential pain as the result of the experience (McGee et al., 1995). The literature on disclosure finds that revealing traumatic experiences are generally beneficial (Pennebaker, 1997); however, lab and field studies of disclosure of sexual assault have not shown positive effects (Ullman, 2011). Studies have also shown that it may be healthier to forget early adverse experiences (Widom & Morris, 1997), but that intentional concealment may be harmful (Larson & Chastain, 1990).

Limitations

There are limitations that need to be considered. First, the population is urban and primarily composed of minority youth, which restricts generalizability. Although the definition of each maltreatment type was similar between our self-report measure and the MCRAI, the case reports included a wider variety of circumstances that may have been classified as physical or sexual abuse whereas the self-report only included 1 item each. However, much of the literature has used single-item measures for these constructs (e.g., McGee et al., 1997). The single items for self-reported physical and sexual abuse were not as specific as those in the MCRAI, and thus may have increased positive endorsement of these items relative to the standardized coding used for the MCRAI. These differences may in part explain the higher self-report prevalence for those types of maltreatment. The MCRAI was developed based on agency definitions as well as research definitions, whereas the CTI was developed from maltreatment definitions in published research studies (Noll et al., 2003). Although there is some consistency in definitions, the match is not perfect and may have led to the prevalence differences between MCRAI and CTI. Self-report is also inherently biased due to adolescents' recall of when the maltreatment occurred in their lifetime and thus it may be that the time frame of the self-reported maltreatment and case records do not match exactly. There may also be shared method variance between self-report of the maltreatment and outcomes inflating the association between the two. However, self-report of maltreatment still clearly has utility in the prediction of outcomes. Lastly, at the time these analyses were completed neither the MCRAI nor CTI had a severity or chronicity scoring system developed. Current efforts are underway to address this for future studies.

Conclusion

In conclusion, this study found that using both child welfare case reviews and self-report identifies substantially higher prevalence rates of maltreatment experiences for child welfare-affiliated youth than either method alone. Although the child welfare records do not include all of a child's experiences of maltreatment, reticence to disclose maltreatment is a significant hurdle when attempting to use self-report. Thus, both methods have drawbacks and integrating data from multiple sources may derive the best estimates of maltreatment experiences. The low agreement between the CTI and MCRAI indicates that information from case records and self-report may provide unique data not captured by the other source. The association of mental health and risk behavior outcomes to maltreatment was shown to differ by the type of maltreatment as well as by co-occurrence. Therefore, the examination

of all types of maltreatment along with polyvictimization is important for a more nuanced understanding of the effects of maltreatment on mental health and risk behavior.

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Table 1

Sample Characteristics for Time 4 Maltreated Sample.

Demographic Variable	Maltreated Sample
<i>N</i>	221
Age (standard deviation)	18.28 (1.41)
Gender (%)	
Male	47
Female	53
Ethnicity (%)	
African American	43
Latino	34
White	10
Mixed biracial	13

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Table 2

Crosstabs Comparing MCRAI to CTI Reported Maltreatment for Each Type.

CTI Self-Reported Maltreatment		MCRAI-Indicated Maltreatment		
		No	Yes	Total
Sexual abuse	No	147 (68%) ^a	23 (11%)	170
	Yes	24 (11%)	23 (11%)	47
	Total	171	46	217
Physical abuse	No	69 (32%)	62 (29%)	131
	Yes	36 (17%)	50 (23%)	86
	Total	105	112	217
Emotional abuse	No	45 (21%)	42 (19%)	87
	Yes	55 (25%)	75 (35%)	130
	Total	100	117	217
Neglect	No	28 (13%)	82 (38%)	110
	Yes	23 (25%)	84 (39%)	107
	Total	51	166	217

Note. $n = 221$. Column proportions are not significantly different for any maltreatment types except as denoted by superscript. $n = 217$ due to some participants missing data on one of the measures. MCRAI = Maltreatment Case Record Abstraction Instrument; CTI = Comprehensive Trauma Interview.

Table 3

Number of Maltreatment Types From the CTI and MCRAI for the Maltreated.

Number of maltreatment types	Maltreated		
	MCRAI	CTI	Combined
0	9 (4%)	55 (25%)	3 (1%)
1	63 (29%)	54 (24%)	41 (19%)
2	75 (34%)	41 (19%)	65 (29%)
3	56 (25%)	44 (20%)	72 (33%)
4	17 (8%)	27 (12%)	40 (18%)
Any maltreatment	212 (96%)	166 (75%) ^a	218 (99%)
More than one maltreatment type	148 (67%)	112 (51%) ^a	200 (90%)

Note. $n = 221$. MCRAI numbers only add up to 220 because of a missing case; nine cases from the MCRAI have no maltreatment type because they were recorded as “at-risk”; combined numbers include the unique cases for the MCRAI and CTI with no overlap. MCRAI = Maltreatment Case Record Abstraction Instrument; CTI = Comprehensive Trauma Interview.

^aSame superscript indicates significant group difference by χ^2 test at $p < .01$.

Table 4

Results From MANCOVA for Mental Health Outcomes by Maltreatment Report Method.

Maltreatment Type	Depressive Symptoms	PTSD	Anxiety
Sexual abuse			
<i>F</i>	3.54*	3.62*	0.87
None (<i>n</i> = 141)	8.96 (0.54) ^a	28.63 (0.85) ^{a,b}	31.28 (1.18)
CTI only (<i>n</i> = 23)	13.31 (1.35) ^a	35.18 (2.10) ^a	34.42 (2.92)
MCRAI only (<i>n</i> =23)	11.32 (1.33)	33.12 (2.08) ^b	35.54 (2.88)
Both CTI and MCRAI (<i>n</i> = 23)	10.92 (1.38)	30.96 (2.14)	33.24 (2.97)
Physical abuse			
<i>F</i>	1.71	2.90*	0.4
None (<i>n</i> = 68)	8.56 (0.76)	27.87 (1.21)	30.89 (1.68)
CTI only (<i>n</i> = 36)	10.34 (1.10)	31.41 (1.70)	33.00 (2.35)
MCRAI only (<i>n</i> =60)	10.38 (0.85)	29.56 (1.31) ^a	32.91 (1.82)
Both CTI and MCRAI (<i>n</i> = 45)	11.16 (0.69)	33.31 (1.49) ^a	33.42 (2.07)
Emotional abuse			
<i>F</i>	1.5	2.62 [†]	0.86
None (<i>n</i> = 44)	9.04 (0.98)	28.22 (1.52) ^b	30.85 (2.10)
CTI only (<i>n</i> = 53)	9.99 (0.89)	31.03 (1.38)	32.96 (1.90)
MCRAI only (<i>n</i> =42)	8.67 (1.01)	27.29 (1.57) ^a	30.10 (2.16)
Both CTI and MCRAI (<i>n</i> = 71)	11.12 (0.78)	32.22 (1.20) ^{a,b}	34.03 (1.66)
Neglect			
<i>F</i>	1.82	0.64	2.26 [†]
None (<i>n</i> = 28)	7.51 (1.23)	28.23 (1.93)	31.42 (2.59)
CTI only (<i>n</i> = 22)	11.33 (0.139)	30.64 (2.18)	35.53 (2.93)
MCRAI only (<i>n</i> = 81)	9.81 (0.73)	29.61 (1.14)	29.47 (1.53) ^a
Both CTI and MCRAI (<i>n</i> = 79)	10.47 (0.73)	31.10 (1.15)	34.32 (1.55) ^a

Note. *F*-statistic from MANCOVA; Sidak adjustment for multiple post hoc pairwise comparisons; groups with same superscript are significantly different at $p < .05$; control variables were age at Time 4 and sex. MANCOVA = multivariate analysis of covariance; PTSD = post-traumatic stress disorder; MCRAI = Maltreatment Case Record Abstraction Instrument; CTI = Comprehensive Trauma Interview.

* $p < .05$.

[†] $p < .08$.

** $p < .01$.

Table 5

Results From MANCOVA for Risk Behavior Outcomes by Maltreatment Report Method.

	Marijuana Use	Alcohol Use	Person Offenses	Property Offenses
Sexual abuse				
<i>F</i>	4.05 **	0.76	3.09 *	3.19 *
None (<i>n</i> = 144)	1.46 (.18) ^{a,b}	1.93 (.18)	1.25 (.11) ^{a,b}	1.38 (.13) ^{a,b}
CTI only (<i>n</i> = 24)	1.99 (.44)	2.11 (.44)	1.95 (.26) ^a	2.25 (.32) ^a
MCRAI only (<i>n</i> = 23)	2.54 (.44) ^a	2.45 (.45)	1.85 (.26) ^b	2.09 (.31) ^b
Both CTI and MCRAI (<i>n</i> = 23)	2.91 (.46) ^b	2.51 (.46)	1.51 (.27)	1.41 (.33)
Physical abuse				
<i>F</i>	1.99	5.20 **	5.63 **	3.79 *
None(<i>n</i> =69)	1.38 (.26)	1.78 (.25) ^a	1.01 (.15) ^{a,b}	1.12 (.18) ^{a,b}
CTI only (<i>n</i> = 35)	2.38 (.37)	3.09 (.36) ^{a,b}	1.90 (.21) ^a	2.02 (.26) ^a
MCRAI only (<i>n</i> = 61)	1.74 (.28)	1.49 (.27) ^{b,c}	1.37 (.16)	1.56 (.20)
Both CTI and MCRAI (<i>n</i> = 48)	2.08 (.31)	2.48 (.30) ^c	1.77 (.18) ^b	1.91 (.22) ^b
Emotional abuse				
<i>F</i>	1.39	4.40 **	2.31 †	0.27
None(<i>n</i> =45)	1.86 (.32)	2.01 (.31)	1.45 (.19)	1.52 (.23)
CTI only (<i>n</i> = 53)	2.25 (.30)	2.62 (.29) ^a	1.71 (.17) ^a	1.63 (.21)
MCRAI only (<i>n</i> = 42)	1.39 (.34)	1.09 (.33) ^{a,c}	1.02 (.20) ^a	1.38 (.24)
Both CTI and MCRAI (<i>n</i> = 74)	1.66 (.25)	2.26 (.25) ^c	1.43 (.15)	1.64 (.18)
Neglect				
<i>F</i>	1.21	1.05	0.63	0.63
None(<i>n</i> =28)	1.30 (.41)	1.89 (.40)	1.36 (.24)	1.52 (.29)
CTI only (<i>n</i> = 22)	2.45 (.46)	2.75 (.46)	1.44 (.27)	1.27 (.33)
MCRAI only (<i>n</i> = 82)	1.72 (.24)	1.87 (.24)	1.30 (.14)	1.50 (.17)
Both CTI and MCRAI (<i>n</i> = 82)	1.86 (.24)	2.14 (.24)	1.57 (.14)	1.73 (.17)

Note. *F*-statistic from MANCOVA; Sidak adjustment for multiple post hoc pairwise comparisons; groups with same superscript are significantly different at $p < .05$; control variables were age at Time 4 and sex. MANCOVA = multivariate analysis of covariance; PTSD = post-traumatic stress disorder; MCRAI = Maltreatment Case Record Abstraction Instrument; CTI = Comprehensive Trauma Interview.

* $p < .05$.

† $p < .08$.

** $p < .01$.

Table 6

Main Effects of Number of Self-Reported Maltreatment Types and Outcomes.

Number of Maltreatment Types	Depressive Symptoms	PTSD	Anxiety	Marijuana Use	Alcohol Use	Person Offenses	Property Offenses
<i>F</i>	3.82 ^{**}	3.81 ^{**}	1.81	1.64	3.66 ^{**}	2.55 [*]	1.37
0 types (<i>n</i> = 55)	8.89 (0.88) ^{abd}	27.83 (1.38) ^a	30.22 (1.91)	1.32 (.30)	1.26 (.28) ^{abc}	1.09 (.17) ^{abc}	1.31 (.22)
1 type (<i>n</i> = 54)	9.28 (0.86) ^{b,e}	27.97 (1.34) ^b	29.30 (1.85)	1.55 (.29)	1.83 (.28)	1.23 (.17)	1.45 (.21)
2 types (<i>n</i> = 41)	7.96 (0.99) ^{c,f}	29.58 (1.53) ^c	34.80 (2.13)	2.00 (.34)	2.66 (.32) ^d	1.50 (.20) ^d	1.54 (.24)
3 types (<i>n</i> = 44)	12.53 (1.03) ^{abc}	35.08 (1.60) ^{abc,e}	35.49 (2.23)	2.34 (.34)	2.57 (.33) ^b	1.64 (.20) ^b	1.67 (.24)
4 types (<i>n</i> = 27)	12.36 (1.25) ^{def}	32.15 (1.94)	33.76 (2.69)	2.17 (.42)	2.45 (.41) ^e	1.97 (.25) ^e	2.17 (.31)

Note. Groups with different superscripts are significantly different from each other at *p* < .05. Controlling for Time 4 age and sex. PTSD=post-traumatic stress disorder.

* *p* < .05.

[†] *p* < .08.

** *p* < .01.