

UC Irvine

UC Irvine Previously Published Works

Title

Unpacking the Associations Among Maltreatment, Disengagement Coping, and Behavioral Functioning in High-Risk Youth

Permalink

<https://escholarship.org/uc/item/1q23d02d>

Journal

Child Maltreatment, 23(4)

ISSN

1077-5595

Authors

Milojevich, Helen M
Russell, Michael A
Quas, Jodi A

Publication Date

2018-11-01

DOI

10.1177/1077559518778805

Peer reviewed



HHS Public Access

Author manuscript

Child Maltreat. Author manuscript; available in PMC 2021 March 23.

Published in final edited form as:

Child Maltreat. 2018 November ; 23(4): 355–364. doi:10.1177/1077559518778805.

Unpacking the Associations among Maltreatment, Disengagement Coping, and Behavioral Functioning in High-Risk Youth

Helen M. Milojevich,

Center for Developmental Science, University of North Carolina at Chapel Hill.

Michael A. Russell,

Department of Psychology and Social Behavior, University of California, Irvine.

Jodi A. Quas

The Methodology Center, The Pennsylvania State University.

Abstract

Given the association between child maltreatment and a host of negative behavioral consequences, there remains a need to continue to identify mechanisms underlying this association as a means of improving intervention efforts. The present study examined one potential mechanism, namely disengagement coping. We asked 6- to 17-year-old maltreated ($n = 249$) and comparison ($n = 133$) youth questions about emotional experiences that induced sadness and anger, strategies they used to cope with those emotions, and behavioral functioning (i.e., behavioral problems and aggression). Maltreated adolescents reported higher levels of behavioral problems and aggression relative to comparison adolescents, and adolescents who disengaged from emotional situations reported more behavioral problems relative to those who did not disengage. Tests of mediation suggested that, for adolescent-age youth, part of the association between maltreatment status and behavioral problems was explained by disengagement. In children, maltreatment was not associated with disengagement or behavioral problems. Results have implications for understanding age-related differences in the emotional and behavioral consequences of maltreatment.

Keywords

youth; maltreatment; adjustment; aggressive behavior

Child maltreatment represents one of the gravest violations of child welfare and safety, leading to a host of consequences to society as a whole, families, and individuals. At an individual level, maltreatment (i.e., any form of physical, emotional, or sexual abuse or neglect of a child under 18 years by a parent or adult in a custodial role; Centers for Disease Control and Prevention, 2013) is associated with deleterious effects in almost every domain, including behavioral, cognitive, and socio-emotional functioning (Manly, Oshri, Lynch,

Correspondence concerning this article should be addressed to Helen M. Milojevich, Center for Developmental Science, University of North Carolina at Chapel Hill, 100 East Franklin St., Chapel Hill, NC, 27514. hmilojev@email.unc.edu.

Herzog, & Wortel, 2013; Richey, Brown, Fite, & Bortolato, 2016). These effects are pervasive, having been documented early in development as well as through late adulthood (Nikulina & Widom, 2013; Pears & Fisher, 2005). The magnitude and longevity of consequences have led researchers to direct considerable attention toward identifying the mechanisms that play pivotal roles in the effects. Of particular interest are potentially *malleable* mechanisms that could serve as targets for interventions. In the current research, we tested one such possible mechanism, namely disengagement coping. We specifically focused on its links to negative behavioral functioning (e.g., aggression) in maltreated youth and potential variations in these links across age.

Maltreatment and Behavioral Functioning

Although individual differences in the consequences of maltreatment exist, in general, maltreated children display higher levels of externalizing (e.g., conduct problems) and internalizing (e.g., depression and anxiety) problems than non-maltreated children (Manly et al., 2013; Mills et al., 2013). Maltreatment is also linked to delinquency, truancy, and running away in adolescence (Negri & Trickett, 2010), and to later criminal behavior in adulthood (Heck & Walsh, 2000). Maltreated children also show more aggression, particularly reactive aggression (Shields & Cicchetti, 1998), and, according to longitudinal findings, are more likely in adolescence and adulthood to be diagnosed with substance abuse problems, suicidal behavior, and anxiety disorders (Herrenkohl, Hong, Klika, Herrenkohl, & Russo, 2013).

Coping and Maltreatment

When considering why maltreated children (and later adolescents and adults) exhibit such a broad range of problems, difficulties with coping emerges as one likely source. Multiple factors within maltreating families can undermine children's ability to learn and practice effective coping strategies. For instance, maltreating parents often mask emotional expression, disengage from emotional situations, and interact in hostile and aggressive ways with family members (Wilson, Rack, Shi, & Norris, 2008). Furthermore, when interacting with their children maltreating parents also tend to rely on punitive interaction styles that include yelling, expressions of anger, and physical threats and aggression, which can occur with adolescents as well as young preschoolers (Wilson et al., 2008). As a result, children are unlikely to be exposed to consistent or appropriate displays of coping (Shipman et al., 2007) that they can then model. Moreover, due to high unpredictability in parent-child interactions and in the home (Coulton, Korbin, & Su, 1999), maltreated children, and especially adolescents (who have greater understanding of environment and coping skills) may learn or come to believe that they cannot control what happens to them, leading to feelings of helplessness (Renner & Slack, 2006). In combination, these experiences may lead maltreated children and adolescents (i.e., "youth") to turn to disengagement coping strategies, or attempts to distance themselves when confronted with stress, conflict, or negative emotional experiences (Griffith, Dubow, & Ippolito, 2000; Silk, Steinberg, & Sheffield Morris, 2003). Although disengagement may not change the youth's underlying emotions and, therefore, may not be effective at facilitating their regulation of their emotions, disengagement may help them distance themselves psychologically from the

immediate situation (Snyder et al., 2016). Moreover, without adequate skills to cope with emotions, disengagement may become a common coping reaction, especially as youth get older (Arslan, 2017), given increases in the range of social situations, such as interactions with peers, parents, and others, that may require coping (Young et al., 2002).

Coping, Behavioral Functioning, and Age

Across the coping literature, disengagement strategies have been repeatedly and strongly associated with poor behavioral outcomes (Connor-Smith et al., 2000; Langrock et al., 2002; Sontag & Graber, 2010; Wolff et al., 2010). For example, more frequent use of disengagement (e.g., avoidance or escaping) in children is linked to greater depressive symptomatology and problem behaviors (Langrock et al., 2002). This association seems to be particularly strong later in development, specifically during adolescence. Disengagement coping in adolescents is associated with greater substance use (Wills et al., 2001), more internalizing and externalizing symptoms (Wolff et al., 2010), and elevated aggression (Sontag & Graber, 2010), with these associations being particularly strong in high-risk populations (Wolff et al., 2010). Theoretically, as already alluded to, disengagement may be effective in helping youth separate themselves from an emotional situation, yet not effective in reducing the experience of negative emotions or in coping with emotions over time. Thus, negative emotions may linger and remain unresolved, perhaps creating angry outbursts, contributing to substance abuse, or leading to other problematic behaviors (Downey, Johnston, Hansen, Birney, & Stough, 2010).

Somewhat surprisingly, given the consistent associations between disengagement coping and poor behavioral functioning, relatively few studies have examined these links among maltreated samples (Arslan, 2017; Bal, Van Oost, De Bourdeaudhuij, & Crombez, 2003; Shapiro & Levendosky, 1999), particularly across development. Among studies that have evaluated the relations among maltreatment, coping, and behavioral functioning, several significant associations have emerged, though primarily in early and middle childhood. For instance, in maltreated children up to 12, coping and regulation deficits are related to internalizing and externalizing problems (Kim-Spoon, Cicchetti, & Rogosch, 2013).

Whether these associations exist – or perhaps are strongest – during adolescence, has not yet been systematically investigated. Such an investigation is important given that adolescence marks a time of tremendous change, including, for example, in parent-child relationships, school structure, and peer dynamics (Steinberg, 2001), and is when exposure to juvenile delinquency, sexual encounters, drugs and alcohol also all increase (Gardner, & Steinberg, 2005) – the latter especially among maltreated youth (Finkelhor, Turner, Shattuck, & Hamby, 2015). All of these experiences place demands on youths' coping capabilities. For maltreated youth (Authors, 2017; Shapiro & Levendosky, 1999), facing these changes may be especially difficult, leading to a sharper increase in negative behavioral outcomes relative to non-maltreated youth. Stated another way, disengagement is a particularly problematic coping strategy in general, however it is perhaps even more so in adolescence, a time when effective coping becomes increasingly important (Sontag & Graber, 2010; Wills et al., 2001; Wolff et al., 2010). Since maltreated youth tend toward disengagement coping, the problems linked to disengagement coping in adolescents may be especially robust.

Present Study

In the study, we investigated the links between disengagement coping and negative behavioral functioning in maltreated and comparison youth across age, expecting to find both mediating and moderating relations among these variables. Our hypotheses built on earlier findings in these data, which revealed that maltreated youth report more disengagement strategies than comparison youth (Authors, 2017).

First, overall group differences were predicted. Maltreated youth were anticipated to report higher levels of behavior problems and aggression relative to comparison youth. Second, these associations were expected to be moderated by age, such that, in adolescents, the links between maltreatment status and negative behavioral functioning would be stronger than in children, due in part to maltreated adolescents having considerable difficulty navigating the challenges that accompany this transitional period of development. Third, across samples, greater disengagement was expected to be associated with poorer functioning (e.g., more aggression), with a fourth prediction, though, proposing that age would again serve as a moderator: At younger ages, those who reported disengaging may not differ in behavioral functioning from those who do not report disengaging; while in adolescents, those who report disengagement as a coping strategy should report significantly poorer functioning than those who do not. Fifth and finally, regarding differences between the maltreated and comparison youth, a moderated mediational association was anticipated, such that, for older youth, part of the association between maltreatment status and behavioral functioning would be explained by disengagement. Conversely, in younger children, no evidence of mediation was anticipated.

Method

Participants

A total of 382 6- to 17-year-olds was included: 249 ($M = 12.99 \pm .26$) maltreated and 133 ($M = 12.19 \pm .21$) comparison (113 and 68 boys, respectively) youth. Self-reported ethnicity varied: 19% identified as Caucasian, 46% as Hispanic, 22% as multiethnic, and 8% as other (5% did not report on race or ethnicity). Participants were taking part in a larger study of development and functioning in high-risk youth (e.g., see Authors, 2017). Inclusion criteria were participants had to be fluent in English (parents could be Spanish-speaking) and free from serious medical conditions that could compromise their ability to understand and complete the study measures.

Maltreated youth were recruited from a local temporary residential facility for youth removed from caregivers following maltreatment. All cases had been substantiated by Child Protective Services and were deemed severe enough to warrant removal. The type of maltreatment (per case files) included the following: 12% sexual abuse, 16% physical abuse, and 61% neglect, without substantiated instances of sexual or physical abuse¹. Maltreated

¹Of note, 11% of the sample was either missing a court record or contained only ambiguous documentation. Those who had experienced multiple maltreatment types were classified into categories based on the following hierarchy: sexual abuse then physical abuse then neglect (Pears & Fisher, 2005). Of note, all cases involving emotional abuse included substantiated neglect, and neglect was cited as the reason for removal and were thus classified as neglect.

youth had to be at the facility for at least 3 days to be eligible. For approximately 40% of the maltreated sample ($N = 97$), this was their first formal removal in their current case. Comparison youth were recruited from advertisements posted at local community centers and other community locations. To reduce the likelihood of the comparison youth having endured maltreatment, the youth must have been residing with at least one parent at the time of participation.

Five additional maltreated youth who had completed the study were excluded due to a diagnosis of autism or other chronic condition being noted in their file, and one additional maltreated youth was excluded because his English was not deemed adequate. Finally, 13 additional maltreated youth ($M = 12.75$ years) elected not to complete the coping task and were excluded. No comparison youth were excluded due to any of these criteria.

Procedure

The study was approved by the relevant university Institutional Review Board, the county Presiding Juvenile Judge, and the local Social Service Agency. Sessions were conducted in a quiet, private location at the residential facility for the maltreated youth and at home or in a university laboratory testing space for the comparison youth. For the maltreated sample, the judge provided general approval for us to approach youth, and, on the days of testing, facility staff provided approval prior to our inviting individual youth to take part. Parental consent was not appropriate for these youth. For the comparison sample, parents provided consent. In both samples, all youth provided written assent. Questions were read aloud, and cue cards containing the response options were provided. Measures relevant to the current report are described here. At the end of the session, the youth were thanked and debriefed. Youth in the comparison group received a small compensation in thanks for their participation; the residential facility requested that the maltreated youth not receive any compensation.

Measures

Youth completed a demographic questionnaire regarding their age, ethnicity, spoken language, and grade in school. Youth then completed the Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997), a well-validated measure of behavioral functioning in at-risk youth. The questionnaire includes 25 items about children's thoughts, feelings, and behaviors (e.g., "I worry a lot", "I get very angry and often lose my temper"), and youth rate how often ("never", "sometimes", or "always") each item has applied to them over the past 6 months. Responses are averaged to create separate mean scores for five domains of functioning: emotional problems, conduct problems, hyperactivity, peer problems, and prosocial behaviors. These scores are further averaged (prosocial excluded) to create a total problem score (domain scores were significantly correlated; $r_s = |.12 - .53|$, $p_s < .023$). The SDQ has high internal consistency and test-retest reliability (Goodman, 2001; $\alpha = .67$ in current sample).

Next, the Child Aggression Questionnaire (CAQ), a well-established modification of the Reactive-Proactive Aggression Questionnaire (Raine et al., 2006), was administered. This measure provides scores for reactive (e.g., "Gotten angry when others threatened you") and

pro-active (e.g., “Yelled at others so that they would do things for you”) aggression. Youth respond “never”, “sometimes”, or “always” to 23 questions. Responses to questions about reactive and proactive aggression were averaged separately. However, the two domains were highly correlated, $r = .62$, $p < .001$, and thus were combined to create a total aggression score. The CAQ has strong reliability and validity (Raine et al., 2006; $\alpha = .77$ in current sample).

Finally, a coping narrative task (Davis et al., 2010) was administered. Youth first described one time when they felt really sad and one time that they felt really mad and then described any and all things that they did to make their sad or mad feelings go away. Scripted follow-up prompts (e.g., “Tell me anything else you can about that time?”) elicited additional details. Responses were reliably scored for type of event and reported coping strategies (Connor-Smith et al., 2000; Davis et al., 2010). Details about the coding system, reliability, and types of events are provided in Authors (2017). For the present study, we focused on disengagement coping, as this has been consistently linked to poor behavioral outcomes and is used more often by maltreated than comparison youth, including the youth studied here (Authors, 2017; Shapiro & Levendosky, 1999). Disengagement was defined as efforts to escape or actively avoid a situation, including avoidance, sleep, generally disengaging, or “doing nothing” (Connor-Smith et al., 2000; Griffith et al., 2000; Silk et al., 2003). For each event, youth received a dichotomous score indicating whether they reported using a disengagement strategy (1) or not (0)².

Results

Statistical Plan

Our analyses proceeded in four steps. First were preliminary analyses, testing for normalcy of study variables, group differences in demographics, and potential confounds and covariates that needed to be included in subsequent analyses. Second, we established group differences in disengagement coping and behavioral functioning. Third, we estimated mediation models in a structural equation modeling (SEM) framework to examine the direct effect of maltreatment on behavioral functioning and the indirect effect of maltreatment on behavioral functioning via disengagement. Analyses were conducted in Mplus 7.31 (Muthén & Muthén, 2012). We estimated simple mediation models testing whether the relation between maltreatment (the predictor, mean centered) and behavioral functioning (the outcome) was explained by disengagement (the mediator). Fourth, we tested whether age moderated the direct association between maltreatment and behavioral functioning (path c') and the association between disengagement and behavioral functioning (path b). To do so, we added an age x maltreatment and age x disengagement interactions to the analyses (thus moderating paths c' and b respectively). Moderation was determined based on the statistical significance of these interaction terms.

²A small number of youth (14% to the sad event prompt, and 21% to the mad event prompt, percentages nearly identical between the maltreated and comparison youth) did not report an event. Their reasons for not doing so included they never experienced the emotion, could not recall a specific event, or did not want to discuss an event with the researcher. They are not included in the coping analyses (see Authors, 2017 for further details).

Preliminary Analyses

Skewness and kurtosis estimates for all study indicators revealed that all fell in acceptable ranges (skew < 2.0, kurtosis < 7.0), suggesting no violation of the assumption of normally distributed indicators. The two groups (maltreated v. comparison) did not differ in age, $F(1, 393)=1.48, p = .21$, gender, or ethnicity (0 = non-Hispanic v. 1=Hispanic), $\chi^2(1) < 2.80, ps > .10$, and gender and ethnicity were unrelated to negative behavioral functioning, $ts < 1.85, ps > .52$. Neither is considered further. Within the maltreated group, no differences in disengagement coping or behavioral functioning emerged based on maltreatment type (sexual abuse, physical abuse, or neglect); $Bs < -.186, ps > .066, Fs(2, 206) < 2.100, ps > .104$. Placement length (days since removal) was positively associated with both measures of behavioral functioning, $rs > .15, ps < .017$, but unrelated to disengagement coping use, $B = .000, p = .529$.

Descriptive statistics on the main study variables are shown in Table 1. Two sets of preliminary analyses laid the foundation for the study's hypotheses. One established group differences in disengagement coping and the other tested for group differences in behavioral functioning. Analyses were conducted separately for disengagement to sad and mad events because these two types of experiences may tap different approach and avoidance tendencies (Blanchard-Fields, & Coats, 2008) and youths' strategy use differed between them.

Regarding group differences in the use of disengagement coping, binary logistic regressions were conducted with age and group (comparison youth served as the reference group) entered (Model 1) followed by the age x group interaction (Model 2). Age was centered on its mean prior to inclusion (Aiken & West, 1991). For sad events, maltreated youth were more likely to report disengagement strategies relative to comparison youth ($OR = 2.45$). No differences in coping strategy by maltreatment status were found for mad events. See Authors (2017) for details about other age- and group-related differences in coping tendencies.

Next, linear regressions were conducted predicting total behavioral problems and aggression from age and maltreatment status (dichotomous) (Model 1), and the age x maltreatment interaction (Model 2). For both total problems and aggression, in Model 1, maltreatment status was significant. Maltreated youth reported more total problems and aggression relative to comparison youth (Table 2). However, these main effects were subsumed by significant age by maltreatment status interactions. Plots, using a median-age split, revealed that, at the younger ages (i.e., < 13 years), the maltreated and comparison youth did not differ in either problems or aggression, $ts(167) < .53, ps > .59$, whereas, at older ages (i.e., 13 years), maltreated youth reported significantly more problems and aggression, $ts(167) > -4.21, ps < .001$ (Figure 1). Together, these results reveal that maltreated youth were more likely to report using disengagement coping and poorer behavioral functioning. In the latter case, though, this trend only emerged with age. Whereas maltreated and comparison children did not differ in behavioral functioning, maltreated adolescents reported more problems than comparison adolescents.

Main Analyses

Our primary goal was to examine the links between disengagement coping and negative behavioral functioning, directly and in conjunction with maltreatment status and age. The latter was particularly important given the evident age-related differences in behavioral functioning between the maltreated and comparison group. In our analyses, we focused on disengagement from sad events, given that our preliminary findings revealed group differences in disengagement coping specifically for sad events, suggesting that this coping strategy could indeed serve as a mediator.

Disengagement as a mediator.—Mediation models were run separately for SDQ total behavior problems and CAQ aggression. In each, three associative paths were estimated: *path a*, between maltreatment (the predictor) and disengagement (the mediator); *path b*, between disengagement (the mediator) and behavioral functioning (the outcome); and *path c'*, between maltreatment (the predictor) and behavioral functioning (the outcome), adjusted for disengagement (the mediator). Because disengagement was dichotomous, we used probit regression (via estimator=WLSMV and parameterization=theta commands in Mplus), which models the observed dichotomous disengagement variable as an indicator of a latent continuous variable. The probit linking function models the associated *Z*-score of the predicted probability at all levels of the predictor, thereby assuming that the predicted probability of the outcome follows a standard normal distribution (Agresti, 2007). Significance of the indirect effect was estimated using bias-corrected bootstrapped confidence intervals (BCBCIs) to account for the non-normal distribution of indirect effects using 1,000 bootstrap draws to calculate the standard error of the indirect effect. Such effects were significant when the BCBCI did not include 0 (Hayes, 2009).

SDQ total behavior problems.: Results of the simple mediation models (no moderation) are shown in Figure 2. Regarding total behavior problems, as shown in Panel A, the direct effect of maltreatment on behavior problems (*path c'*) was significant. Thus, maltreated youth reported a greater number of total problems than did comparison youth, adjusting for disengagement. The indirect effect (*path a*path b*) was also significant, suggesting that the association between maltreatment and behavior problems was partially explained by disengagement. Maltreated youth were more likely to report disengagement strategies, and youth who reported disengagement strategies in turn reported a greater number of behavior problems.

Aggression.: Results for aggression diverged slightly from those concerning the SDQ (Panel B). The direct effect of maltreatment (*path c'*) was again significant, with maltreated youth reporting higher levels of aggression, adjusted for disengagement. However, the indirect effect of maltreatment on aggression through disengagement (*path a*path b*) was not. Thus, disengagement coping did not mediate the links between maltreatment and aggression.

Age as a moderator.—We next tested whether the two paths in the model differed by age. We added the age x maltreatment and age x disengagement interactions (moderating *paths c'* and *b* respectively). Figure 3 shows these results (Panel A = total behavior problems, Panel B = aggression).

SDQ total behavior problems.: As shown, for behavior problems, the age x maltreatment (path w) and age x disengagement (path v) interactions were significant, suggesting that paths c' and b differed by age, respectively. In addition, direct effects (and their standard errors) were calculated at 1 standard deviation (SD) above and below the mean age using the formula $c' \pm SD_{age} * w$ to estimate the direct associations between maltreatment and behavior problems at ages 9.26 (M-SD) and 15.76 (M+SD).

At 1 SD below mean age (Age = 9.26), the direct association between maltreatment and total problems was not significant (estimate = 0.27, SE = 0.68, $p = 0.69$). Thus, for children, maltreatment was not directly associated with behavior problems after adjusting for disengagement. At 1 SD above mean age (Age = 15.76), the direct association between maltreatment and behavior problems was significant (estimate = 3.25, SE = 0.74, $p < .001$), suggesting that for adolescents, experiencing maltreatment was associated with higher self-reported behavior problems, after adjusting for disengagement.

Next, we estimated the indirect effects and their 95% BCBCIs at 1 SD above and below mean age using the formula $a*(b \pm (SD_{age} * v))$, which allowed us to estimate the indirect effect at ages 9.26 and 15.76 respectively. For children, the 95% BCBCI included 0, suggesting that the indirect effect was not significant (estimate = -0.48, 95% BCBCI: -1.64, 0.51). However, for adolescents, the 95% BCBCI did not include 0, suggesting that the indirect effect was significant (estimate = 1.36, 95% BCBCI: 0.50, 2.47), such that for adolescents, but not for children, the association between maltreatment and total problems was partly explained by disengagement.

Aggression.: Regarding aggression, both the age x maltreatment (path w) and the age x disengagement (path v) interactions were significant (Panel B of Figure 3). The direct effects by age showed that, for children (1 SD below mean age, age = 9.26), the association between maltreatment and aggression adjusted for disengagement was not significant (estimate = -0.33, SE = 0.95, $p = 0.73$), but, this same association was significant for adolescents (1 SD above mean age, age = 15.76; estimate = 3.94, SE = 0.98, $p < .001$). The indirect effects showed that, for adolescents (estimate = 1.40, 95% BCBCI: 0.30, 3.23), but not for children (estimate = -1.00, 95% BCBCI: -2.95, 0.31), the association between maltreatment and aggression was partly explained by disengagement.

Discussion

The present study took a much-needed step toward unpacking processes that contribute to negative behavioral outcomes commonly observed among maltreated youth, particularly adolescent-age youth. Overall, findings highlight the significance of disengaging from sad events as a potentially maladaptive coping strategy with implications for youth behavior problems, again especially adolescent-age youth. Next, we turn to a more detailed discussion of our hypotheses and findings, with an eye toward their theoretical and practical importance.

Our first two hypotheses, namely that maltreated and comparison youth would differ in behavioral functioning and that age would moderate these differences, were supported by

our data. Among older youth, those who had experienced maltreatment reported more problems, namely higher levels of general adjustment problems and aggressive tendencies, than did comparison youth, whereas among younger youth, the group differences were minimal. Given that maltreatment exposure places individuals at heightened risk for a range of problems, including internalizing and externalizing symptomatology (Manly et al., 2013; Mills et al., 2013; Richey et al., 2016), our findings in many ways were unsurprising. However, the more robust differences between the maltreatment and comparison samples at older ages may be reflective of a form of cumulative risk common in this population. The cumulative risk hypothesis posits that the accumulation of risk factors impacts developmental outcomes, such that the greater number of risk factors, the greater the prevalence of behavioral problems (Lamela & Figueiredo, 2015). Maltreated youth are often exposed to a range of stressors, including neglect and/or abuse, violence, poverty, separation from loved ones, and legal system involvement (Finkelhor et al., 2015; Quas, Wallin, Horwitz, Davis, & Lyon, 2009). These may increase in frequency and intensity over time, leading to correspondingly stronger behavioral differences as a result.

We also anticipated that greater use of disengagement strategies would be associated with poorer functioning (e.g., more aggression), with age again serving as a moderator. The use of disengagement strategies was associated with poorer behavioral functioning, again exclusively for the older youth. Moreover, while maltreated youth were more likely to report disengagement strategies relative to the comparison youth, for younger children, maltreatment was not directly associated with behavioral problems either before or after adjusting for disengagement. We speculate that the association between disengagement and poorer behavioral functioning may stem from disengagement being passive and therefore ineffective at actually reducing emotional distress that results from negative event exposure. This ineffectiveness may be particularly problematic for adolescents, who have likely endured chronic stress for a longer period and who have seemingly failed to learn more adaptive methods of coping with negative experiences, such as problem-solving or social support seeking (Sontag & Graber, 2010). Behavior problems that involve acting out may increase, perhaps in response to the inability to reduce or regulate experiences of emotion (Downey et al., 2010).

A point worth mentioning concerns the divergent pattern of findings for the two valences of emotion—sad and mad. Specifically, the significant disengagement findings we uncovered involved youths' reported use of this strategy in relation to sad but not mad events. The types of sad events the maltreated youth reported experiencing often focused on loss, abuse, or removal, all of which are psychologically intense events that likely elicit strong feelings of distress. In contrast, the types of mad events reported by the maltreated youth involved what one might consider more normative daily stressors, such as interpersonal conflict and not getting one's wants met. Perhaps maladaptive coping during psychologically taxing events may be a particularly informative indicator of broader problematic tendencies compared to such coping to less intense events or daily challenges. Alternatively, youth with generally high levels of behavior problems may simply think more about intense negative experiences and hence be constantly attempting to disengage from those thoughts. The causal direction is not possible to disentangle in the current work, although given differences in the underlying goals of sad versus mad emotions (Blanchard-Fields, & Coats, 2008), and given common

differences in maltreated children's sensitivity to and understanding of discrete negative emotions (Pollak, Cicchetti, Hornung, & Reed, 2000), further work on the underlying meaning of these differences and their implications, across age, is warranted.

Limitations and Future Directions

The present study provides novel insight into emotion-related mechanisms that may contribute to long-term consequences of maltreatment, however it is not without limitations. For one, we did not ask about maltreatment history in our comparison sample, therefore any maltreatment in this group would attenuate differences and make our findings somewhat conservative. Also, as mentioned, the cross-sectional nature of our design precludes causal interpretations. Longitudinal investigations that examine developmental changes in coping and functioning would enable clearer insight into developmental trends in their directional links.

Third, although we asked the youth numerous types of questions across the independent and dependent variables (e.g., open-ended narrative prompts, scaled response close-ended questionnaires), thereby reducing the potential problem of shared-method variance, we relied exclusively on self-report measures. On the one hand, during the interviews the youth reported a range of personal and sensitive information (self-injurious behavior, engagement in illegal activities, sexual behavior). Thus, the youth did not uniformly paint themselves or their actions in an idealistic, socially-acceptable light. However, a small set of youth elected not to report on an event when given the emotion prompt, stating that they did not wish to discuss it with the researcher. Given this, plus often reported discrepancies between child- and other-report measures (Lagattuta, Sayfan, & Bamford, 2012), multi-informant designs and designs that assess coping or problematic behavior directly (e.g., via laboratory-based tasks, for instance, that induce anger or retaliatory tendencies) would be worthwhile additions to the current work.

Implications

An impressive body of work already exists on intervention programs designed to enhance behavioral functioning in at-risk community samples of children (Schuppert et al., 2009) and in children exposed to maltreatment (Cohen et al., 2006; Fisher et al., 2006; Skowron & Reinemann, 2005). While the details of the implementation strategies of the interventions vary widely across research, core components of many include teaching children to (1) recognize their emotions, (2) improve self-control, (3) de-escalate when confronted with negative emotions, and (4) problem-solve during stressful or emotional situations rather than disengage. All of these components could, as well, easily be labeled as forms of effective coping and regulation. Tests of the various programs' effectiveness have targeted preschool and school-age children, with very few being geared toward adolescents (see Schuppert et al., 2009 for an exception). Our results stress the need for much greater attention toward enhancing coping in adolescents, especially those who have been maltreated, as this age group's deficits, or at least use of disengagement coping, may be especially important for their functioning.

In closing, the present study sheds new light on the links between disengagement coping and negative behavioral functioning in maltreated youth across age. While maltreated and comparison youth did not differ greatly in their behavioral functioning at younger ages, maltreated adolescents demonstrated poorer behavioral functioning relative to comparison adolescents, with at least some of this poorer functioning being accounted for by the former adolescents' tendency to use disengagement to cope with intense feelings of sadness. The next step is to determine how these associations change over time, and whether interventions that target coping in maltreated adolescents can be useful in reducing problems and possibly longer term negative outcomes.

This research was supported by a U.S. Department of Health and Human Services Fellowship for Doctoral Candidates and Faculty for Research in Child Maltreatment. This work was also supported by a postdoctoral fellowship provided by the National Institute of Child Health and Human Development (T32-HD07376) through the Center for Developmental Science, University of North Carolina at Chapel Hill, to H. M. Milojevich.

References

- Agresti A (2007). An introduction to categorical data analysis: Second edition. Hoboken, NJ: John Wiley & Sons.
- Aiken LS & West SG (1991). Multiple regression: Testing and interpreting interactions. Thousand Oaks, CA, US: Sage Publications, Inc.
- Arslan G. (2017). Psychological maltreatment, coping strategies, and mental health problems: A brief and effective measure of psychological maltreatment in adolescents. *Child Abuse & Neglect*, 68, 96–106. DOI: 10.1016/j.chiabu.2017.03.023 [PubMed: 28427000]
- Bal S, Van Oost P, De Bourdeaudhuij I, & Crombez G. (2003). Avoidant coping as a mediator between self-reported sexual abuse and stress-related symptoms in adolescents. *Child Abuse & Neglect*, 27, 883–897.
- Blanchard-Fields F, & Coats AH (2008). The experience of anger and sadness in everyday problems impacts age differences in emotion regulation. *Developmental Psychology*, 44, 1547–1556. DOI: 10.1037/a0013915 [PubMed: 18999321]
- Maltreatment Child (2013). In Centers for Disease Control and Prevention online. Retrieved from <http://www.cdc.gov/ViolencePrevention/childmaltreatment/index.html>.
- Cohen JA, Mannarino AP, Murray LK, & Igelman R. (2006). Psychosocial interventions for maltreated and violence-exposed children. *Journal of Social Issues*, 62, 737–766. DOI: 10.1111/j.1540-4560.2006.00485.x
- Connor-Smith JK, Compas BE, Wadsworth ME, Thomsen AH, & Saltzman H. (2000). Responses to stress in adolescence: Measurement of coping and involuntary stress responses. *Journal of Consulting and Clinical Psychology*, 68, 976–992. DOI: 10.1037/0022-006X.68.6.976 [PubMed: 11142550]
- Coulton CJ, Korbin JE, & Su M. (1999). Neighborhoods and child maltreatment: A multi-level study. *Child Abuse & Neglect*, 23, 1019–1040. DOI: 10.1016/S0145-2134(99)00076-9
- Davis EL, Levine LJ, Lench HC, & Quas JA (2010). Metacognitive emotion regulation: Children's awareness that changing thoughts and goals can alleviate negative emotions. *Emotion*, 10, 498–510. DOI: 10.1037/a0018428 [PubMed: 20677867]
- Downey LA, Johnston PJ, Hansen K, Birney J, & Stough C. (2010). Investigating the mediating effects of emotional intelligence and coping on problem behaviours in adolescents. *Australian Journal of Psychology*, 62, 20–29. DOI: 10.1080/00049530903312873
- Finkelhor D, Turner HA, Shattuck A, & Hamby SL (2015). Prevalence of childhood exposure to violence, crime, and abuse: Results from the National Survey of Children's Exposure to Violence. *JAMA Pediatrics*, 169, 746–754. DOI: 10.1001/jamapediatrics.2015.0676 [PubMed: 26121291]

- Fisher PA, Gunnar MR, Dozier M, Bruce J, & Pears KC (2006). Effects of therapeutic interventions for foster children on behavioral problems, caregiver attachment, and stress regulatory neural systems. *Annals of the New York Academy of Sciences*, 1094, 215–225. DOI: 10.1196/annals.1376.023 [PubMed: 17347353]
- Gardner M, & Steinberg L. (2005). Peer influence on risk taking, risk preference, and risky decision making in adolescence and adulthood: An experimental study. *Developmental Psychology*, 41, 625–635. DOI: 10.1037/0012-1649.41.4.625 [PubMed: 16060809]
- Goodman R. (1997). The Strengths and Difficulties Questionnaire: A research note. *Journal of Child Psychology and Psychiatry*, 38, 581–586. DOI: 10.1111/j.1469-7610.1997.tb01545.x [PubMed: 9255702]
- Goodman R. (2001). Psychometric properties of the Strengths and Difficulties Questionnaire (SDQ). *Journal of the American Academy of Child and Adolescent Psychiatry*, 40, 1337–1345. DOI: 10.1097/00004583-200111000-00015 [PubMed: 11699809]
- Griffith MA, Dubow EF, & Ippolito MF (2000). Developmental and cross-situational differences in adolescents' coping strategies. *Journal of Youth and Adolescence*, 29, 183–204. DOI: 10.1023/A:1005104632102
- Hayes AF (2009). Beyond Baron and Kenny: Statistical mediation analysis in the new millennium. *Communication Monographs*, 76, 408–420.
- Heck C, & Walsh A. (2000). The effects of maltreatment and family structure on minor and serious delinquency. *International Journal of Offender Therapy and Comparative Criminology*, 44, 178–193. DOI: 10.1177/0306624X00442004
- Herrenkohl TI, Hong S, Klika JB, Herrenkohl RC, & Russo MJ (2013). Developmental impacts of child abuse and neglect related to adult mental health, substance use, and physical health. *Journal of Family Violence*, 28, 191–199. DOI: 10.1007/s10896-012-9474-9
- Kim-Spoon J, Cicchetti D, & Rogosch FA (2013). A longitudinal study of emotion regulation, emotion lability-negativity, and internalizing symptomatology in maltreated and nonmaltreated children. *Child Development*, 84, 512–527. DOI: 10.1111/j.1467-8624.2012.01857.x [PubMed: 23034132]
- Lagattuta KH, Sayfan L, & Bamford C. (2012). Do you know how I feel? Parents underestimate worry and overestimate optimism compared to child self-report. *Journal of Experimental Child Psychology*, 113, 211–232. DOI: 10.1016/j.jecp.2012.04.001 [PubMed: 22727673]
- Lamela D, & Figueiredo B. (2015). A cumulative risk model of child physical maltreatment potential findings from a community-based study. *Journal of Interpersonal Violence*, 1–19. DOI: 10.1177/0886260515615142
- Langrock AM, Compas BE, Keller G, Merchant MJ, & Copeland ME (2002). Coping with the stress of parental depression: Parents' reports of children's coping, emotional, and behavioral problems. *Journal of Clinical Child and Adolescent Psychology*, 31, 312–324. [PubMed: 12149969]
- Manly JT, Oshri A, Lynch M, Herzog M, & Wortel S. (2013). Child neglect and the development of externalizing behavior problems: Associations with maternal drug dependence and neighborhood crime. *Child Maltreatment*, 18, 17–29. DOI: 10.1177/1077559512464119 [PubMed: 23136210]
- Mills R, Scott J, Alati R, O'Callaghan M, Najman JM, & Strathearn L. (2013). Child maltreatment and adolescent mental health problems in a large birth cohort. *Child Abuse & Neglect*, 37, 292–302. DOI: 10.1016/j.chiabu.2012.11.008 [PubMed: 23380430]
- Muthén LK, & Muthén BO (2012). *Mplus user's guide*. Seventh edition. Los Angeles, CA: Muthén & Muthén.
- Negriff S, & Trickett PK (2010). The relationship between pubertal timing and delinquent behavior in maltreated male and female adolescents. *The Journal of Early Adolescence*, 30, 518–542. DOI: 10.1177/0272431609338180 [PubMed: 23970810]
- Nikulina V, & Widom CS (2013). Child maltreatment and executive functioning in middle adulthood: A prospective examination. *Neuropsychology*, 27, 417–427. DOI: 10.1037/a0032811 [PubMed: 23876115]
- Pears K, & Fisher PA (2005). Developmental, cognitive, and neuropsychological functioning in preschool-aged foster children: Associations with prior maltreatment and placement history. *Journal of Developmental and Behavioral Pediatrics*, 26, 112–122. [PubMed: 15827462]

- Pollak SD, Cicchetti D, Hornung K, & Reed A. (2000). Recognizing emotion in faces: developmental effects of child abuse and neglect. *Developmental Psychology*, 36, 679–688. DOI: 10.1037/0012-1649.36.5.679 [PubMed: 10976606]
- Quas JA, Wallin AR, Horwitz B, Davis E, & Lyon T. (2009). Maltreated children's understanding of and emotional reactions to dependency court involvement. *Behavioral Sciences and the Law*, 27, 97–117. DOI: 10.1002/bsl.836 [PubMed: 19156680]
- Raine A, Dodge K, Loeber R, Gatzke-Kopp L, Lynam D, Reynolds C, ... & Liu, J. (2006). The Reactive-Proactive Aggression Questionnaire: Differential correlates of reactive and proactive aggression in adolescent boys. *Aggressive Behavior*, 32, 159–171. DOI: 10.1002/ab.20115 [PubMed: 20798781]
- Renner LM, & Slack KS (2006). Intimate partner violence and child maltreatment: Understanding intra-and intergenerational connections. *Child Abuse & Neglect*, 30, 599–617. DOI: 10.1016/j.chiabu.2005.12.005 [PubMed: 16782195]
- Richey A, Brown S, Fite PJ, & Bortolato M. (2016). The role of hostile attributions in the associations between child maltreatment and reactive and proactive aggression. *Journal of Aggression, Maltreatment & Trauma*, 25, 1043–1057. DOI: 10.1080/10926771.2016.1231148
- Schuppert HM, Giesen-Bloo J, van Gemert TG, Wiersema HM, Minderaa RB, Emmelkamp PM, & Nauta MH (2009). Effectiveness of an emotion regulation group training for adolescents—a randomized controlled pilot study. *Clinical Psychology & Psychotherapy*, 16, 467–478. DOI: 10.1002/cpp.637 [PubMed: 19630069]
- Shapiro DL, & Levendosky AA (1999). Adolescent survivors of childhood sexual abuse: The mediating role of attachment style and coping in psychological and interpersonal functioning. *Child Abuse & Neglect*, 23, 1175–1191. DOI: 10.1016/S0145-2134(99)00085-X
- Shields A, & Cicchetti D. (1998). Reactive aggression among maltreated children: The contributions of attention and emotion dysregulation. *Journal of Clinical Child Psychology*, 27, 381–395. DOI: 10.1207/s15374424jccp2704_2 [PubMed: 9866075]
- Shipman KL, Schneider R, Fitzgerald MM, Sims C, Swisher L, & Edwards A. (2007). Maternal emotion socialization in maltreating and non-maltreating families: Implications for children's emotion regulation. *Social Development*, 16, 268–285. DOI: 10.1111/j.1467-9507.2007.00384.x
- Silk JS, Steinberg L, & Morris AS (2003). Adolescents' emotion regulation in daily life: Links to depressive symptoms and problem behavior. *Child Development*, 74, 1869–1880. DOI: 10.1046/j.1467-8624.2003.00643.x [PubMed: 14669901]
- Skowron E, & Reinemann DH (2005). Effectiveness of psychological interventions for child maltreatment: A meta-analysis. *Psychotherapy: Theory, Research, Practice, Training*, 42, 52–71. DOI: 10.1037/0033-3204.42.1.52
- Snyder SM, Hartinger-Saunders R, Brezina T, Beck E, Wright ER, Forge N, & Bride BE (2016). Homeless youth, strain, and justice system involvement: An application of general strain theory. *Children and Youth Services Review*, 62, 90–96. DOI: 10.1016/j.chilyouth.2016.02.002
- Sontag LM, & Graber JA (2010). Coping with perceived peer stress: gender-specific and common pathways to symptoms of psychopathology. *Developmental Psychology*, 46, 1605–1620. DOI: 10.1037/a0020617 [PubMed: 20718534]
- Steinberg L. (2001). We know some things: Parent-adolescent relationships in retrospect and prospect. *Journal of Research on Adolescence*, 11, 1–19. DOI: 10.1111/1532-7795.00001
- Wills TA, Sandy JM, Yaeger AM, Cleary SD, & Shinar O. (2001). Coping dimensions, life stress, and adolescent substance use: A latent growth analysis. *Journal of Abnormal Psychology*, 110, 309–323. DOI: 10.1037/0021-843X.110.2.309 [PubMed: 11358025]
- Wilson SR, Rack JJ, Shi X, & Norris AM (2008). Comparing physically abusive, neglectful, and non-maltreating parents during interactions with their children: A meta-analysis of observational studies. *Child Abuse & Neglect*, 32, 897–911. DOI: 10.1016/j.chiabu.2008.01.003 [PubMed: 18950859]
- Wolff BC, Wadsworth ME, & Santiago CD (2010). Family poverty, stress, and coping. In Levesque RJR (Ed.), *Encyclopedia of adolescence* (pp. 941–951). New York, NY: Springer.

Young SE, Corley RP, Stallings MC, Rhee SH, Crowley TJ, & Hewitt JK (2002). Substance use, abuse and dependence in adolescence: Prevalence, symptom profiles and correlates. *Drug and Alcohol Dependence*, 68, 309–322. DOI: 10.1016/S0376-8716(02)00225-9 [PubMed: 12393225]

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

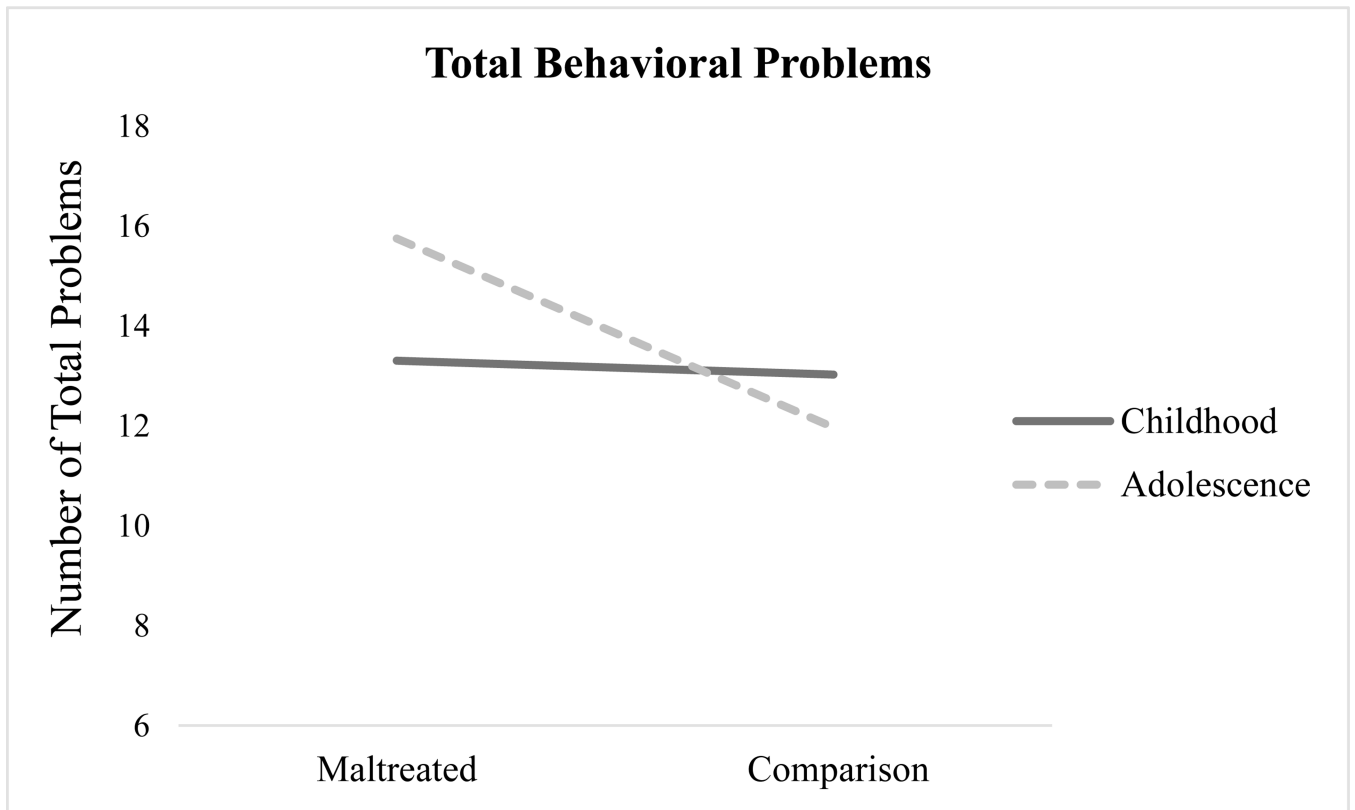


Figure 1. Total behavioral problems. For ease of interpretation, a median split was used to categorize age dichotomously, with childhood representing youth younger than age 13 and adolescence representing youth aged 13 or older.

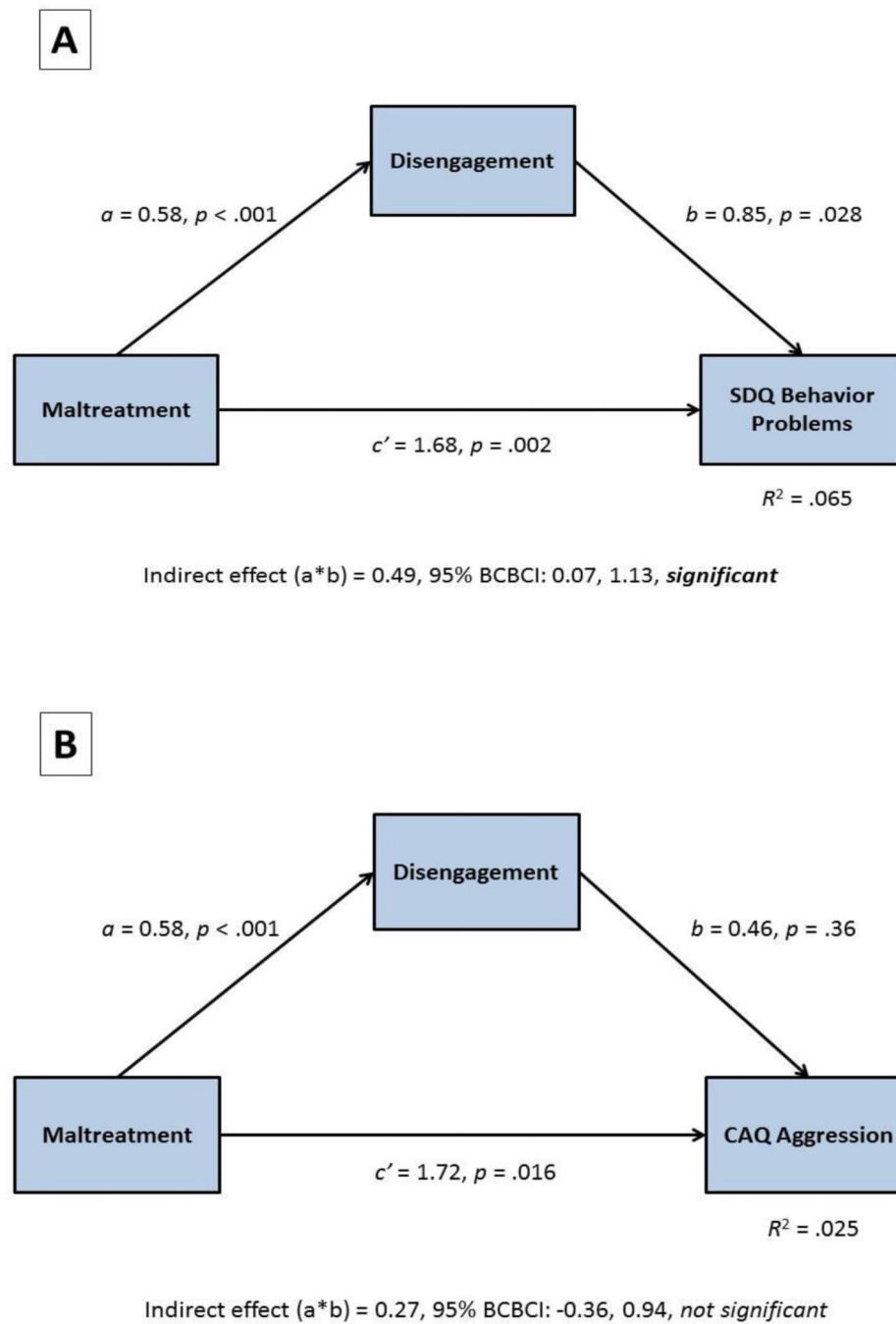


Figure 2. Mediation Models for Total Problems and Aggression. Note. (A) Indirect effect ($a \times b$) = 0.49, 95% BCBCI [0.07, 1.13], significant. (B) Indirect effect ($a \times b$) = 0.27, 95% BCBCI [-0.36, 0.94], not significant. BCBCI = bias-corrected bootstrapped confidence interval.

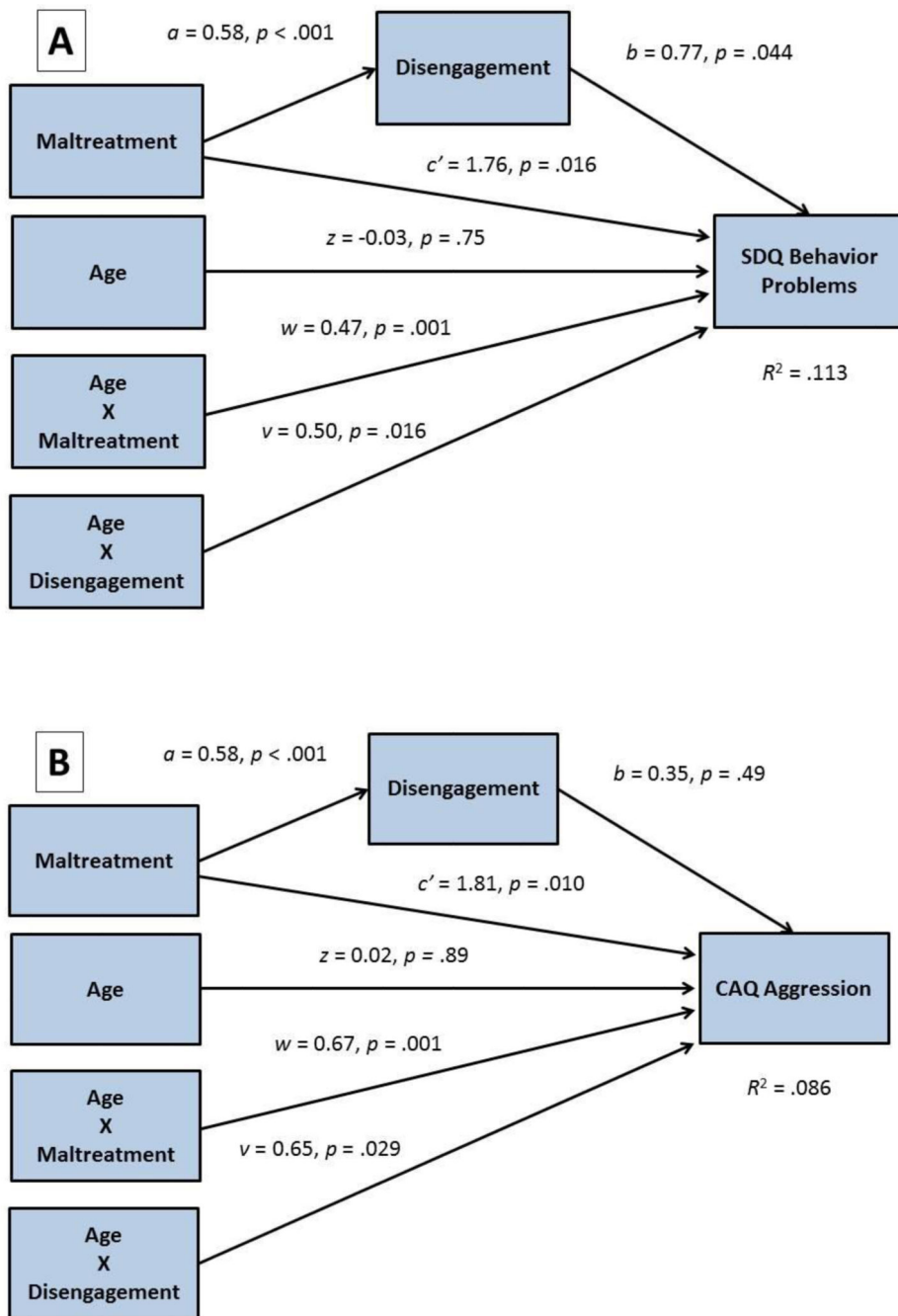


Figure 3.
Moderated Mediation Models for Total Problems and Aggression.

Table 1

Behavioral Functioning and Disengagement by Maltreatment Status

	Comparison		Maltreated	
	Mean	SD	Mean	SD
Total Behavioral Problems	12.47	4.13	14.78	5.72
Total Aggression	7.45	4.94	9.55	7.51

	Comparison		Maltreated	
	Sad Event	Mad Event	Sad Event	Mad Event
Disengagement Reporting	18.0	28.6	29.8	31.8

Note. Disengagement Reporting reflects the percentage of youth who reported at least one disengagement strategy per the event in question.

Table 2

Regression Results for Behavioral Functioning by Group

	Model 1				Model 2			
	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Total Behavioral Problems								
Age	.006	.005	1.342	.180	-.012	.007	-1.554	.121
Group	.081	.031	2.647	.008	.085	.030	2.786	.006
Age x Group					.028	.009	2.968	.003
Aggression								
Age	.010	.005	2.143	.033	-.011	.007	-1.541	.124
Group	.092	.031	2.999	.003	.096	.030	3.188	.002
Age x Group					.033	.009	3.585	<.001