

# Parental Exposure to Childhood Maltreatment and Offspring's Mental Health: Investigating Pathways Through Parental Adversity and Offspring Exposure to Maltreatment

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## Abstract

Parental exposure to child maltreatment (CM) is an important predictor of their offspring's CM experiences and mental health. However, less attention has been paid to examine possible mechanisms of transmission, which is critical to inform prevention and intervention efforts. The current study tested (1) whether the association between parental CM exposure and offspring CM exposure was mediated by (a) parental exposure to violence in adulthood or (b) other emotional stressors/adversities in adulthood and (2) the indirect effects from parental CM exposure to offspring mental health outcomes through parental adversity and offspring CM exposure. Data came from a longitudinal study of maltreatment on adolescent development, and analyses focused on adolescents living with a biological parent ( $N = 185$ , 51% female). Biological parents (95% mothers) reported on their history of CM and exposure to other adversities across their lifetime. Adolescents self-reported lifetime CM experiences and current depression, anxiety, posttraumatic stress disorder, and externalizing behaviors in late adolescence ( $M_{age} = 18.49$ ). Results showed a significant indirect effect of parent CM exposure on offspring's CM exposure and mental health through parental emotional stressors/adversities, but not physical violence. These findings highlight different types of stressors that may impact the risk for intergenerational transmission of CM and subsequent offspring mental health.

## Keywords

abusive parents, adverse childhood experiences, child maltreatment, psychopathology

Child maltreatment (CM), which includes experiences such as physical abuse, sexual abuse, emotional abuse, and physical neglect, is one of the most significant public health and social problems threatening the well-being of children and families (Gilbert et al., 2009). Studies have shown that CM is associated with increased risk of mental health disorders, suicidality, physical health problems, cognitive difficulties, drug use, and risky sexual behavior in late adolescence and adulthood (Irigaray et al., 2013; Norman et al., 2012; Wegman & Stetler, 2009). Specifically, exposure to physical abuse, emotional abuse, and neglect is associated with increased externalizing and internalizing behavior problems in youth (Vachon et al., 2015). Theory and evidence suggest that there are multiple risk factors for CM (Stith et al., 2009), but one important predictor is whether the parent was exposed to CM themselves, which has been linked to the risk for offspring's exposure to maltreatment (Madigan et al., 2019) and subsequent effects on offspring mental health (Enlow et al., 2018; Plant et al., 2017). The literature on the intergenerational transmission of CM describes both direct transmission of CM, where the parent is the perpetrator, as well as indirect transmission, where the parent's experiences amplify risk for offspring CM perpetrated by others (Madigan et al., 2019).

Most studies focusing on the intergenerational transmission of maltreatment have examined parents' experiences of maltreatment in childhood (Madigan et al., 2019) without exploring whether parental exposure to other types of violent or adverse experiences over the life course may differentially predict offspring victimization. Specifically, no studies have examined parental exposure to violence versus a broader range of adversities (e.g., the death of one of their parents, serious illness, lack of food or shelter) as mediators explaining intergenerational transmission of CM. A more comprehensive understanding of how parental experiences of violence exposure and adversity, in addition to CM exposure, affect offspring risk for CM exposure would aid researchers and practitioners in identifying and supporting families most at risk. Although a

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broad body of research has established the connection between either child or parent CM exposure and offspring mental health (Mills et al., 2013; Plant et al., 2018), fewer studies have examined offspring outcomes in the context of the intergenerational transmission of CM (Choi et al., 2019; Enlow et al., 2018; Plant et al., 2013; Plant et al., 2017; Roberts et al., 2015), and only one study has focused on mental health in later adolescence (Roberts et al., 2015). Therefore, the current study sought to test whether violence exposure and adversity in adulthood are mechanisms explaining the intergenerational risk of maltreatment and the risk of subsequent offspring mental health symptoms in late adolescence.

### *Intergenerational Transmission of CM*

There is general agreement across studies that exposure to CM and other traumatic experiences predicts poor parenting later in life, including lower responsiveness and empathy, higher punitiveness, aggression, and child abuse potential (Banyard et al., 2003; Bert et al., 2009). A significant body of research has specifically examined whether parental CM exposure predicts whether their offspring will experience CM, which is termed the “cycle of maltreatment” hypothesis (Assink et al., 2018; Madigan et al., 2019; Thornberry et al., 2012). Although previous research noted inconsistent findings in regard to this literature (Thornberry et al., 2012), the most recent meta-analysis on this subject reviewed 142 studies and found a modest association ( $d = .45$ ) of parental CM exposure on offspring CM exposure overall, and for the transmission of specific maltreatment types (e.g., neglect, physical abuse, emotional abuse, sexual abuse; Madigan et al., 2019). Importantly, while much of the literature on intergenerational transmission of CM has focused on direct transmission, that is, the parent becoming the perpetrator of offspring CM (Widom & Wilson, 2015), there is also the possibility of indirect transmission via parental deficiencies that contribute to an unsafe environment and increase the risk for maltreatment perpetrated by others (e.g., parent’s romantic partner, family members; Kim et al., 2007). Yet few studies have investigated the role of parental exposure to violence and adversity in adulthood as mechanisms that may explain intergenerational transmission of risk (Madigan et al., 2019).

*Mechanisms of transmission: Revictimization and violence exposure in adulthood.* Prior research on intergenerational transmission of CM shows that risk factors like parental substance use, social isolation, history of mental health problems, and poor parenting behaviors partially mediate the association between parent and offspring CM exposure (Appleyard et al., 2011; Berlin et al., 2012), particularly in cases in which the parent is the perpetrator. Evidence also demonstrates that adults with CM histories are more likely to experience revictimization in adulthood, which may increase likelihood of indirect transmission (Desai et al., 2002). According to the developmental psychopathology perspective, CM exposure may contribute to socioemotional difficulties, which, in turn, initiate a

maladaptive trajectory (e.g., poor social skills, low self-esteem, unhealthy/violent relationships, aggression, substance use/abuse, criminality) that increases the likelihood of revictimization and exposure to violence in adulthood (Cicchetti & Banny, 2014). Some research shows that violence exposure in adulthood in particular increases the risk of offspring maltreatment. For example, evidence indicates that maternal CM experiences predict later maternal exposure to intimate partner violence (IPV), which then impacts offspring negative life events and psychopathology (Miranda et al., 2011, 2013a, 2013b). In addition, two recent studies found that parental exposure to relationship violence mediated the association between parent and offspring CM exposure (Adams et al., 2019; Labella et al., 2019) but did not further examine the impact on offspring mental health. To date, no studies have examined whether parental CM exposure increases risk for parental exposure to a broader range of violent experiences in adulthood and if these experiences in adulthood explain the intergenerational transmission of CM.

*Mechanisms of transmission: Other adversities in adulthood.* Exposure to CM also predicts increased exposure to a range of adversities in adulthood, including lower socioeconomic well-being (Currie & Widom, 2010; Zielinski, 2009) and higher rates of mental and physical health problems (Gilbert et al., 2009). In turn, studies also show that parental exposure to stressors and adversities impedes parenting (Cabrera et al., 2011; Doan et al., 2012) and can lead to offspring victimization (Clemens et al., 2019; Stith et al., 2009). For example, a meta-analytic review by Stith et al. (2009) found that adversities like lower family socioeconomic status and lower parental social support were associated with higher rates of offspring neglect and physical abuse across studies. This line of research raises the possibility that parental adversity may play an important role in the intergenerational transmission of CM. However, no studies of the intergenerational transmission of CM have examined whether parental adversities like lack of basic needs, familial death, or serious physical health problems mediate the association between parent and offspring CM exposure. Furthermore, to date, no studies have assessed both parental exposure to violence and other adversities in adulthood to more fully delineate the pathways to offspring victimization.

### *Intergenerational Transmission of CM and Offspring Mental Health*

Of particular concern for CM researchers is preliminary evidence demonstrating that the intergenerational transmission of CM can lead to poor offspring mental health (Enlow et al., 2018; Plant et al., 2013; Plant et al., 2017; Plant et al., 2018; Roberts et al., 2015). For example, three studies showed that offspring CM exposure significantly mediated the association between parental CM exposure and offspring emotional and behavioral problems among school-age children (Enlow et al., 2018; Plant et al., 2013; Plant et al., 2017). However, other studies have found that offspring experiences of CM did

not mediate these associations (Miranda et al., 2011; Thompson, 2007). In addition, studies on parental adverse childhood experiences show that higher numbers of adversities predict offspring mental health difficulties (Cooke et al., 2019; McDonald et al., 2019; Schickedanz et al., 2018; Stepleton et al., 2018). Understanding the pathways linking parental CM exposure with offspring mental health at various developmental periods is critical for development of family treatment programs. However, only one study examined the effect of the intergenerational transmission of CM on offspring mental health in late adolescence and adulthood, demonstrating that intergenerational transmission of CM led to higher levels of depressive symptoms among offspring (Roberts et al., 2015). Further research is needed to confirm whether the intergenerational transmission of CM predicts offspring depression and establish whether it also predicts other offspring mental health outcomes, particularly during critical developmental periods such as adolescence.

### The Current Study

The current study aims to address several gaps in the literature. First, although the intergenerational transmission of CM has received significant empirical support, less attention has been paid to examining possible mechanisms of transmission, which is critical to inform prevention and intervention efforts. In particular, no studies have examined whether parental exposure to violence in adulthood and/or exposure to other adversities in adulthood may mediate the association between parent and child CM exposure, even though research shows that these factors often impact parenting and offspring outcomes. Second, no studies have examined whether such mechanistic pathways underlying the intergenerational transmission of CM then lead to later offspring mental health symptoms, particularly in later adolescence and early adulthood. Consequently, the aims of the proposed study were to (1) test whether the association between parental CM exposure and offspring CM exposure was mediated by (a) parental exposure to violence in adulthood or (b) parental adversities in adulthood and (2) test the indirect effects from parental CM exposure to offspring mental health outcomes through (a) parental exposure to violence and adversities in adulthood and (b) offspring CM exposure.

## Method

### Participants

Data were from the third and fourth assessments ( $M = 2.7$  and  $7.2$  years after baseline, respectively) of an ongoing longitudinal study examining the effects of maltreatment on adolescent development (for full study design and methods, see Negriff et al., 2019). Recruitment occurred from 2002 to 2005 and enrolled 454 adolescents aged 9–13 years (242 males and 212 females) and their caregivers. Time 1 (T1) was followed by three additional assessments with the full sample. Time 2 (T2; 2003–2006;  $M = 12.11$ , standard deviation [ $SD$ ] = 1.19), Time 3 (T3; 2005–2008;  $M = 13.69$ ,  $SD = 1.39$ ), and Time 4

**Table 1.** Sample Characteristics for Parents and Adolescents (Analytic Sample).

	Time 3	Time 4
	Parent 185	Adolescent 185
<b>Demographics</b>		
Age ( $SD$ )	39.48 (7.08)	18.23 (1.23)
Sex (%)		
Male	4.9	48.6
Female	95.1	51.4
Ethnicity (%)		
African American	37.8	38.4
Latino	40.5	38.9
White	16.2	10.8
Mixed/biracial	1.6	11.9
Asian/Pacific Islander	2.7	n/a
Other	1.1	n/a
Average individual yearly income (%)		
<\$14,999	48.5	n/a
\$15,000–29,999	23.3	n/a
\$30,000–59,999	23.3	n/a
Over 60,000	4.9	n/a
Level of education		
No high school diploma/equivalent	26.5	n/a
High school diploma/equivalent	20.5	n/a
Some college	36.8	n/a
College diploma or advanced degree	16.2	n/a

Note. Parent trauma interview data only available at T3; adolescent trauma interview data obtained at T4. n/a = not applicable.

(T4; 2009–2012;  $M = 18.24$ ,  $SD = 1.47$ ) occurred approximately 1 year, 1.5 years, and 4.4 years following each prior assessment. Of the original sample, 71% completed the T3 assessment ( $n = 322$ ) and 73% completed the T4 assessment ( $n = 352$ ). At T4, the participants approximately evenly split between males and females and primarily African American (43%) or Latino (34%). Sample demographics for the analytic sample can be found in Table 1.

**Recruitment.** The maltreatment group ( $n = 303$ ) was recruited from active cases in the Children and Family Services (CFS) agency of a large U.S. west coast city. The inclusion criteria were (1) a new referral to CFS during the preceding month for any type of maltreatment (e.g., physical neglect, physical abuse, sexual abuse, emotional abuse); (2) aged 9–12 years (some turned 13 between first contact and actual study visit); (3) identified as Latino, African American, or Caucasian (non-Latino); and (4) residing in 1 of 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 and asked to indicate their willingness to participate.

The comparison group ( $n = 151$ ) was recruited using names from school lists of children aged 9–12 years residing in the same 10 zip codes as the maltreated sample. With approval of the institutional review board of the affiliated university,

**Table 2.** Items Comprising the Three Child Maltreatment or Adversity Scales and Prevalence (%) of Each Item.

Maltreatment/Adversity	Childhood Maltreatment		Adulthood Physical Violence/Threat	Adulthood Emotional Stressors and Adversity
	Parent	Adolescent	Parent	Parent
Physical abuse	20.8	19.5	21.4	—
Sexual abuse/assault	15.4	30.5	5.5	—
Physical neglect	19.8	26.8	—	—
Emotional abuse/lack of emotional support	20.3	47.0	—	12.6
Physical assault (e.g., mugging)	—	—	12.6	—
Witnessing violence	—	—	23.1	—
Social needs (e.g., lack of food, shelter)	—	—	—	23.7
Death of a parent or child	—	—	—	33.5
Serious illness/medical procedure	—	—	—	28.6

Note. Physical abuse in adulthood was most commonly intimate partner violence. Physical neglect in childhood and social needs in adulthood were coded from the same items.

caretakers of potential participants were contacted and asked to indicate their interest in participating. To ensure the fidelity of the comparison sample, caretakers were asked about involvement with CFS and none indicated prior or current contact.

Upon enrollment in the study, the maltreatment and comparison groups were compared on demographic variables. The two groups were similar in age ( $M = 10.93$  years,  $SD = 1.16$ ), gender (53% male), race (38% African American, 39% Latino, 12% biracial, and 11% Caucasian), and neighborhood characteristics (based on census tract information; Negriff et al., 2019). However, they differed in terms of living arrangements; 93% of the comparison group lived with a biological parent compared to 52% of the maltreatment group.

Attrition analyses indicated participants not seen at T3 were more likely to be Latino (odds ratio [ $OR$ ] = 3.37,  $p < .01$ ) and in the maltreatment group ( $OR = 5.36$ ,  $p < .01$ ), and those not seen at T4 were more likely to be in the maltreatment group ( $OR = 2.45$ ,  $p < .01$ ) and male ( $OR = 1.86$ ,  $p < .01$ ).

For the current analyses, the total possible sample was those with data at T4 ( $n = 352$ ), which was then restricted to the two following criteria: (a) biological parents and (b) one child per caregiver. Because we were interested in examining the intergenerational transmission of maltreatment, we chose only biological parents but allowed either mothers or fathers to be included. If the parent had more than one child enrolled in the study, we randomly selected one of the siblings for inclusion. Based on these selection criteria, the final analytical sample was 185 biological parent–adolescent dyads (95 comparison and 90 maltreated; 48.6% male; 5% fathers).

## Procedure

Assessments were conducted at an urban research university under approval by the institutional review board of the affiliated university. After assent and consent were obtained from the adolescent and caregiver, respectively, they were shown to separate rooms where each completed questionnaires and tasks during a 4-hr protocol. The measures used in the analyses represent

a subset of the questionnaires administered during the protocol. Both children and caregivers were paid for their participation according to the guidelines of the National Institutes of Health's standard compensation for healthy volunteers.

## Measures

**Self-reported maltreatment, violence exposure, and adversities.** The Comprehensive Trauma Interview (CTI; Noll et al., 2003) was used at T3 for parents and at T4 for adolescents to assess self-reported maltreatment, violence exposure, and adversities. This self-report instrument was used for the parent because it was the only source of information about parental exposure to maltreatment and adverse experiences. It was also used for the adolescent, as it was the most comprehensive approach to capture complete information about the entire period of adolescence (information obtained from the child welfare case records was limited to experiences prior to study enrollment) as well as unreported CM for the entire sample, not just the maltreatment group. The CTI is administered via interview by a trained research assistant and assesses 19 different adverse experiences including parental divorce, parental incarceration, witnessing IPV, household substance use, death of parent, foster care placement or other parental separation, sexual abuse (2 items), physical abuse, emotional abuse (2 items), and physical neglect (4 items). Each stem question is answered yes/no, and for each question answered affirmatively, further follow-up questions are asked including the age at all event(s) that correspond to that experience and a description of what happened. For those constructs with more than one question, the item was coded "yes" if it was endorsed for any one of the questions. For the parent, all items were coded based on the age at which they occurred, as "under 18" (childhood) versus "18 or older" (adulthood). If the experience occurred both under and over 18 (e.g., physical abuse by parent in childhood and physical abuse by husband in adulthood), it was coded as present for both childhood and adulthood. Table 2 shows the scales for the parent and adolescent and which items were included in each.

The conceptualization of the adulthood scales was based on the theoretically meaningful separation of exposure to violence versus other emotional stressors and other adversities in adulthood. Other studies have shown test–retest reliability of the CTI ranging from .45 to .76 depending on the maltreatment type (Barnes et al., 2009).

**Adolescent self-report of maltreatment exposure.** The adolescent's report of CM was assessed at T4. The 4 maltreatment items (physical abuse, sexual abuse, emotional abuse, and physical neglect) were summed to create a total score indicating the number of different maltreatment types the youth had experienced.

**Parent self-report of childhood maltreatment exposure.** The same 4 items used to compute the adolescent's childhood maltreatment experiences were also used for the parent (physical abuse, sexual abuse, emotional abuse, and physical neglect) and summed to create a total score.

**Parent self-report of exposure to physical violence in adulthood.** Four items were used to create the variable indicating the count of parent's exposure to physical violence in adulthood: (1) physical abuse (most commonly IPV), (2) sexual assault, (3) physical assault (e.g., being mugged), and (4) witnessing violence (e.g., witnessing someone being attacked or killed).

**Parent report of emotional stressors and other adversities in adulthood.** Items indicating lack of emotional support, social needs (lack of food, housing, electricity, financial problems, and medical care), death of a parent or child, and serious illness or medical procedure were used to create the variable indicating emotional stress or adversity in adulthood. The 4 items were summed to create a total count score.

### Adolescent Report of Mental Health Symptoms (T4)

**Depressive symptoms.** Adolescents completed the 27-item Children's Depression Inventory (CDI; Kovacs, 1981, 1992). They rated statements such as "I am sad all the time" and "I feel like crying every day" on a 3-point scale (range of possible scores = 0–54). The Cronbach's  $\alpha$  for T4 was .89. The CDI has been shown to have good test–retest reliability scores, which have been shown to range from .76 to .82 (Saylor et al., 1984).

**Posttraumatic stress disorder (PTSD).** Symptoms of PTSD occurring in the past couple of months were assessed using the Youth Symptom Survey Checklist (Margolin, 2000). This is a 17-item self-report measure of symptoms from the diagnostic criteria for PTSD found in the *Diagnostic and Statistical Manual of Mental Disorders IV-TR* such as hyperarousal, avoidance/numbness, and reexperiencing. Whereas most PTSD measures ask about symptoms related to a specific event, this questionnaire is not anchored to any specific traumatic event. Answer options range from 1 = *not at all* to 4 = *almost always*. The total score was used for this analysis (17 items;  $\alpha$  = .88) and can range from 17 to 68.

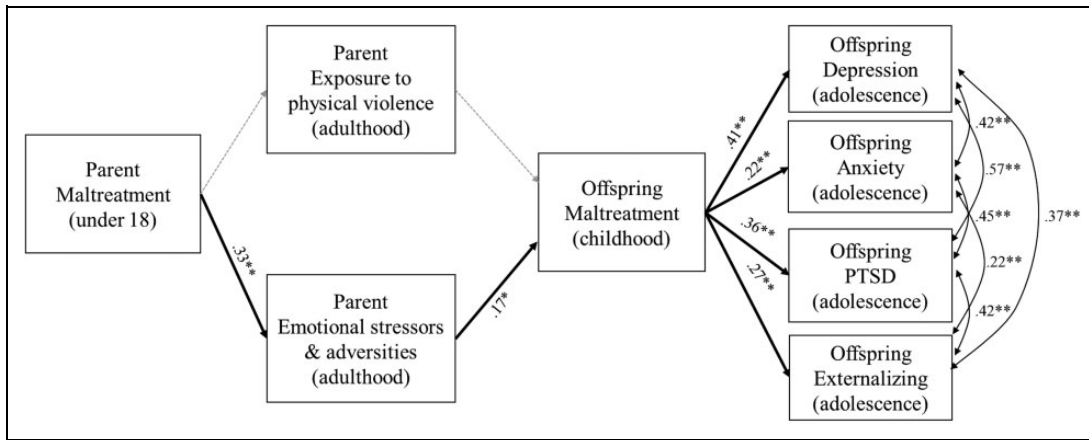
**Anxiety.** The 39-item Multidimensional Anxiety Scale for Children (March et al., 1997) was used to measure anxiety symptoms. It has been found to have good internal consistency (range for subscales is .70-.89), good test–retest reliability, invariant factor structure across gender and age, and discriminant validity (March et al., 1997). The 9 items on the Separation Anxiety subscale (e.g., "I get scared when my parents go away") were removed from the scale at T4 due to development inappropriateness. Items such as "I feel tense or uptight" were rated from 0 to 3 (*never true about me* to *often true about me*), yielding a possible total score range from 0 to 90. Internal consistency was .89 at T4.

**Externalizing problems.** The Youth Self-Report was used to measure externalizing behavior (Achenbach & Rescorla, 2001). This widely used child report measure is a companion to the parent report and has substantial evidence of reliability and validity in various populations (Achenbach & Rescorla, 2001). The externalizing subscale is composed of aggression (17 items) and rule-breaking/delinquency (12 items). Each item is rated from 0 to 2 (*not at all* to *a lot*) with a possible range of 0–58. Cronbach's  $\alpha$  was .89 at T4.

**Covariates.** We included parent's income (average of T1–T3) and the adolescent's age, gender, and race. We also considered total sum score of parental experiences of adversities under 18 (divorce, foster placement, death of parent, serious illness, witnessing IPV, household member substance use; assault, witnessing violence), as these may be associated with adulthood violence exposure and adversity. We conceptualized this as a covariate (rather than an independent variable) because we were specifically interested in investigating the mechanisms of intergenerational transmission of childhood maltreatment.

### Data Analyses

We used a path model in Mplus Version 7.2 (Muthen & Muthen, 2014) to examine the indirect effects from parent's CM exposure, to parent's exposure to violence and adversity in adulthood, to their child's CM experiences, to the adolescent's report of mental health. As described in the Measures section, parent's report of CM exposure was limited to experiences prior to age 18, and this sum score was modeled to have direct effects on the parent's experiences of (a) exposure to physical violence and (b) emotional stressors and adversity in adulthood. Both of these variables were modeled to have direct effects on the offspring's sum score of self-reported CM exposure, which then predicted the offspring's symptoms of depression, anxiety, PTSD, and externalizing problems (see Figure 1). A direct effect from parental CM exposure to offspring CM exposure was also included and compared to the indirect effects only model. Covariates were included as predictors of relevant dependent variables. Specifically, parent's adversities under 18, child's age, and parent's income were regressed on the adulthood trauma, and adversity variables, child's age, race, and gender were regressed on the mental health outcomes.



**Figure 1.** Model testing indirect effects from parent’s experience of maltreatment to their experience of physical violence or emotional stress and adversity in adulthood, to their offspring’s maltreatment experiences, and to the offspring’s mental health in adolescence. *Note.* Bold arrows indicate significant indirect effects. Gray paths are included in the model but not significant. Model controls for (a) parent adversities under 18 and T1–T3 average income (on adult physical violence and adversities) and (b) T4 child age, sex, and race (on mental health outcomes).  $\chi^2 = 62.52$  (33); comparative fit index = .91; root mean square error of approximation = .07.

**Table 3.** Descriptives for Study Variables.

Study Variables	Parent		Adolescent	
	Mean (SD)	Range	Mean (SD)	Range
Childhood maltreatment	.68 (0.95)	0–4	1.23 (1.32)	0–4
Adulthood physical violence/threat	.62 (0.80)	0–4	—	—
Adulthood emotional stressors and adversities	.98 (1.00)	0–4	—	—
Depressive symptoms	—	—	10.16 (6.57)	2–40
Anxiety	—	—	33.36 (13.89)	4–73
PTSD	—	—	31.45 (10.03)	17–59
Externalizing	—	—	8.69 (6.59)	0–29

*Note.* PTSD = posttraumatic stress disorder.

Missing data were addressed using full information maximum likelihood, and the significant indirect effects were determined using the bootstrapped indirect effect in Mplus.

## Results

### Descriptives

Means, SDs, and ranges of the maltreatment, physical violence, and emotional stressor/adversity scales as well as the mental health outcomes can be found in Table 3. For the parent, 42.3% reported at least one type of childhood maltreatment exposure, 46.2% reported at least one experience of physical violence in adulthood, and 59.3% reported at least one emotional stressor or adversity in adulthood. For the adolescent, 59.8% reported at least one type of CM. Correlations between study variables can be found in Table 4. Most notably, there was a significant correlation between parent and offspring exposure to CM ( $r = .44, p < .01$ ).

### Path Model

**Main effects.** The model fit the data well ( $\chi^2 = 62.52$ , degrees of freedom [ $df$ ] = 33; comparative fit index = .91; root mean square error of approximation = .07). The inclusion of a direct effect from parent’s childhood maltreatment exposure to the adolescents’ maltreatment exposure did not significantly improve the model fit ( $\Delta\chi^2 = .95, df = 1, p = .75$ ). Additionally, the parameter estimate was not significant indicating the indirect effect of parent’s CM exposure on child’s CM exposure through the parent’s exposure to violence and emotional stressors and adversities in adulthood was a better explanation of the data. As shown in Figure 1, there were main effects of parent’s CM exposure on adulthood emotional stressors and adversities ( $\beta = .33, p < .01$ ), but not on adult exposure to physical violence. In turn, adulthood emotional stressors and adversities predicted their offspring experiencing more types of maltreatment ( $\beta = .17, p < .05$ ), while adulthood exposure to physical violence did not. Finally, the adolescent’s exposure to CM had significant effects on all four mental health outcomes (depressive symptoms:  $\beta = .41, p < .01$ ; anxiety symptoms:  $\beta = .22, p < .01$ ; PTSD symptoms:  $\beta = .36, p < .01$ ; and externalizing behavior:  $\beta = .27, p < .01$ ), with more types of maltreatment predicting higher levels of symptoms.

**Indirect effects.** The bootstrapped estimates of the indirect effects and 95% confidence intervals can be found in Table 5. First, testing the indirect effect of parent’s CM exposure to the child’s CM exposure, there was a significant indirect effect via emotional stressors and adversities, but not through exposure to physical violence. Second, the indirect effect from parent’s maltreatment exposure to child mental health outcomes was mediated by parent’s exposure to adversity in adulthood and child’s CM exposure. This indirect effect was significant for all four mental health outcomes. There were no significant indirect

**Table 4.** Correlations Between Study Variables.

	Parent			Offspring			
	Exposure to Childhood Maltreatment	Exposure to Physical Violence	Exposure to Emotional Stressors	Exposure to Childhood Maltreatment	Depressive Symptoms	Anxiety Symptoms	Trauma Symptoms
Parent exposure to childhood maltreatment	—						
Parent exposure to physical violence	.18*	—					
Parent exposure to emotional stressors	.21**	.29**	—				
Offspring exposure to childhood maltreatment	.44**	.15	.20*	—			
Depressive symptoms	.04	-.04	.14	.45**	—		
Anxiety symptoms	.08	.03	.09	.27**	.50**	—	
Trauma symptoms	.01	.05	.02	.38**	.64**	.50**	—
Externalizing behavior	-.04	.00	.00	.26**	.45**	.29**	.58**

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

**Table 5.** Indirect Effects From Structural Equation Model.

	Boot strapped Indirect Effect	Boot strapped 95% CI	
		Lower Limit	Upper Limit
Pmaltr → Pemostress → Cmaltr	.06	.01	.13
Pmaltr → Pphysviol → Cmaltr	.01	-.01	.06
Pmaltr → Pemostress → Cmaltr → DEP	.15	.01	.06
Pmaltr → Pemostress → Cmaltr → ANX	.01	.01	.03
Pmaltr → Pemostress → Cmaltr → PTSD	.02	.01	.05
Pmaltr → Pemostress → Cmaltr → EXT	.02	.01	.04
Pmaltr → Pphysviol → Cmaltr → DEP	.01	-.01	.03
Pmaltr → Pphysviol → Cmaltr → ANX	.01	-.01	.01
Pmaltr → Pphysviol → Cmaltr → PTSD	.01	-.01	.02
Pmaltr → Pphysviol → Cmaltr → EXT	.01	-.01	.02

Note. Pmaltr = parent maltreatment under 18; Cmaltr = child's maltreatment; Pemostress = parents emotional stressors and adversity in adulthood; DEP = offspring depressive symptoms; ANX = offspring anxiety symptoms; PTSD = offspring posttraumatic stress disorder symptoms; EXT = offspring externalizing behavior; CI = confidence interval.

effects through parent's physical violence exposure in adulthood.

## Discussion

The intergenerational transmission of maltreatment has been widely studied, yet few have investigated how maltreatment experiences in childhood may increase risk for parental exposure to violence as well as emotionally stressful and adverse

experiences throughout the life span, which may then affect whether their offspring experience CM. The findings from the current study show that parental exposure to CM predicts a higher number of emotionally stressful or adverse experiences in adulthood, but not higher exposure to physical violence. Consequently, it is these adversities, rather than exposure to violence in adulthood, that increased their offspring's risk for exposure to CM and subsequent mental health symptoms. Understanding these life course pathways resulting from CM informs how best to assess and intervene with parents who have experienced CM in order to reduce the potential for intergenerational transmission.

We tested two potential pathways from parent's CM exposure to offspring's CM exposure: (1) exposure to violence/revictimization and (2) exposure to other emotional stressors and adversity. Our findings support the second pathway; parent's experience of CM predicted higher levels of emotional stressors and adversities in adulthood, which predicted offspring's CM exposure. Interestingly, there was no main effect of parent's CM exposure on the exposure to physical violence in adulthood. This differs from studies showing that parent's CM experiences predict IPV in adulthood (Adams et al., 2019; Labella et al., 2019; Miranda et al., 2011, 2013a, 2013b) and the potential for indirect transmission of CM. However, other evidence indicates that child abuse potential is increased if the mother has IPV-related PTSD (Anderson et al., 2018). This suggests that perhaps the symptoms of trauma (possibly as a result of IPV) may be a better predictor of risk for offspring victimization than violence exposure alone. While we did not include parental trauma symptoms in our model, this may be a useful addition to future analyses. It is also important to note that other studies assessing IPV use measures that capture a broader definition of IPV than just physical assault and may include emotional abuse (Miranda et al., 2011), which may map onto both our domain of physical violence and emotional stressors/adversities. This may dilute the apparent effect of IPV in our physical violence scale. Data also show that there may be

substantial underreporting of IPV due to a number of issues such as social desirability, wording of questions, or ambiguous incidents (Follingstad & Rogers, 2013).

We should also note that our measure of maltreatment and adversities was indicative of a higher number of different types of experiences. As such, our scales were an index of multivictimization rather than an indication of the number of times that they experienced any of these types of maltreatment or adversities. Specifically, higher scores indicated experiencing more types of maltreatment, different types of violence exposure, or different adversities. Data show that multivictimization occurs more frequently than thought and the experience of a single maltreatment type is rare (Brown et al., 2019; Finkelhor et al., 2007). As such, our results support the notion that multivictimization in childhood contributes to experiencing a higher number of different types of adversities in adulthood, and this increases the risk of their offspring experiencing multiple maltreatment types. While we did not investigate specific types of maltreatment, evidence indicates that certain types of maltreatment (i.e., physical abuse) increase the risk of the offspring experiencing the same type of maltreatment (Madigan et al., 2019). This will be an important avenue for future research in order to fully delineate the mechanisms of intergenerational transmission of maltreatment and the pathways of direct versus indirect transmission of risk. Nevertheless, the current study indicates that the presence of multiple emotional stressors and adversities, rather than either single events or physical violence, accounts for the process of intergenerational transmission of CM.

It is also critical to note that these analyses did not assess whether the parent was the perpetrator of their offspring's maltreatment (i.e., direct transmission), and we made no inferences about the specific parenting attitudes, practices, or the parent's role in the adolescent's reported maltreatment experiences. Our results suggest that parents with CM exposure are more likely to experience multiple adversities such as lack of emotional support, lack of basic needs, serious illness, or death of a parent or child. Whether this contributes to direct or indirect transmission of risk was not examined but should be an avenue for future research. Our findings coincide with data showing parents who have maltreated their children report social isolation and health problems (Cicchetti et al., 2006). This may occur through a developmental cascade initiated by insecure attachment, social skill deficits, low self-esteem, low cognitive abilities, poor emotion regulation, which set the stage for experiencing more general adversities and emotional stress in adulthood (Cicchetti, 2016). Moreover, there is an abundance of evidence that the presence of stressors and challenges, including adversities such as economic hardship, leads to a difficulty meeting basic needs, influences parental emotional health, and thereby the quality of parenting practices (Masarik & Conger, 2017) that might increase the likelihood of children experiencing maltreatment (MacKenzie et al., 2011). This finding has practical utility in terms of assessing high-risk families. While assessment of the parent's history of maltreatment may be important, it is not sufficient, by itself, to predict a parent's

future likelihood of maltreatment and may stigmatize those parents as potential perpetrators. Furthermore, a more thorough assessment of risk profiles including the social needs of the parent may be a better indicator of the child's current risk of exposure to CM. This will allow the prioritization of limited resources to address the needs of the most vulnerable families and prevent future maltreatment.

Our findings also indicate that parent's CM exposure had an indirect effect on their child's reported mental health symptoms. This is the first study to provide evidence of the mechanisms linking parent and child CM exposure as well as the long-term effects of parent's CM experiences on a range of adolescent mental health outcomes. Notably, these are primarily differences in subclinical levels of symptoms for community-based adolescents that, on average, are exhibiting typical levels distress but with symptoms that range from little distress to a level of clinical concern. Only one previous study examined the link between intergenerational transmission of CM and adolescent mental health, with intergenerational CM predicting higher depressive symptoms (Roberts et al., 2015). However, the current study is the first to demonstrate that parental exposure to CM has an indirect effect on their offspring's increased symptoms in late adolescence across a number of domains, including depression, anxiety, posttraumatic stress symptoms, and externalizing problems. This suggests that the intergenerational transmission of maltreatment may result in basic differences in psychobiological functioning that represent a transdiagnostic risk for mental health problems across domains. Recent research demonstrates that deficits in emotion regulation play a central role in many different types of psychopathology and may be one such transdiagnostic factor (Fernandez et al., 2016). Future studies should examine the role of transdiagnostic factors such as offspring emotion regulation, as compared to disorder-specific mechanisms, in the intergenerational transmission of CM and the subsequent effects on adolescent mental health. Such research would help inform whether preventive interventions for CM-exposed youth may be most successful when they focus on transdiagnostic mechanisms that influence a broad range of mental health symptoms or target disorder-specific mechanisms that emerge early in development.

Finally, while other studies have investigated pieces of this full model, none have identified mechanisms linking parent and child CM exposure while also linking to child's outcomes. For example, a meta-analysis found that among the eight studies that examined mediators, mother's history of CM was associated with her child's emotional and behavioral problems primarily through mother's psychological distress or parenting practices (Plant et al., 2018). Three of these studies assessed the child's maltreatment experiences as a mediator, but only one found a significant effect which was moderated by maternal depression (Plant et al., 2013). Thus, while our findings are consistent with the evidence that parental CM exposure has an indirect effect on child's mental health outcomes, our analyses enhance the existing literature by delineating several potential mediators at different points in the intergenerational



pathway. A more complete understanding of the cascade of effects initiating with maltreatment will allow more targeted prevention and intervention efforts.

### Limitations

We acknowledge there are inherent limitations of this current study. First, both parent and child report of maltreatment exposure was self-report. This may have resulted in underreporting of maltreatment experiences or inflation of experiences that may not have met the criteria for maltreatment. In addition, the adolescent self-reported both maltreatment and mental health symptoms, possibly leading to shared method variance and inflating the associations between maltreatment and mental health outcomes. Our sample included adolescents from child welfare and the community, and the child welfare group likely had higher rates of maltreatment. Second, the CTI did not ask about all possible traumatic or adverse experiences, and we created the domains in our study based on the available questions. While our constructs of violence exposure and adversities were theoretically and empirically based, there may be other useful categorizations of these items. Additionally, in our creation of the maltreatment, violence, and adversity scales, we summed the number of items which resulted in an index of multivictimization, as opposed to frequency of exposure. Both may be useful in understanding these mechanisms, but we detected a significant effect using the multivictimization approach highlighting that breadth of exposures is important to assess. We also did not investigate the individual types of CM, which may give us a better picture of homotypic or heterotypic transmission of CM. Third, we restricted the sample to biological parents, which included 5% fathers. Father's experiences of maltreatment and the mechanisms of intergenerational transmission may differ from those of mothers; therefore, future work should attempt to examine these pathways separately for mothers and fathers. Unfortunately, we did not have a large enough sample size of biological fathers to investigate this. Finally, there may be other potential mediators that we did not include, such as trauma symptoms, parenting attitudes, and other types of violence exposure or adversities.

### Conclusion

This is the first study to examine the mechanisms of the intergenerational transmission of CM as well as the indirect effect of parental CM exposure on offspring's mental health. There are several important practice implications of our findings. First, our results suggest that the assessment of parental adversities, rather than violence exposure in general, may be important for assessing risk of offspring maltreatment. Information about these other types of adversities may be more easily attainable, less sensitive, and may provide important information about services and social needs of at-risk families than asking the parent about their CM histories. Second, intervening with the parent to provide supports and resources to meet basic needs and cope with emotional stressors may reduce risk for

their child's maltreatment as well as future mental health problems. Future studies should assess the potential intermediary variables linking parental adversity to offspring CM exposure. Parenting attitudes and practices are among the most likely candidates and would provide guidance as to whether supports to enhance parental capabilities and relationships with their children would be promising candidates to reduce intergenerational transmission of CM. In addition, some evidence suggests there is intergenerational transmission of specific types of maltreatment (e.g., physical abuse of the parent predicts physical abuse of the offspring; Madigan et al., 2019), and future research should investigate whether certain types of parental CM exposure predict certain types of adversity, which then increase risk for specific types of offspring CM exposure. Overall, this study highlights the importance of examining parental exposure to different types of adverse experiences over the life course in order to best identify and support at-risk parents and prevent the intergenerational transmission of CM.


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