


# Childhood maltreatment and provision of support and strain to family relationships in adulthood: The role of social anxious and depressive symptoms

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## Abstract

Childhood maltreatment (CM) often occurs within the family system and can complicate familial relationships across the lifespan. Mental health problems may be one possible pathway linking CM to willingness to provide support and provisions of strain to family members. We advance this line of research by examining the degree to which CM shapes adults' understanding of how individual's willingness to provide support to their family as well as enacted strain towards family members. Data were from the study of Midlife Development in the United States (MIDUS). Among the participants ( $n = 568$ ), the majority were White (91.2%), female (56.9%), and had a mean age of 51.5. Structural equation modeling was used to test the relationship between CM, depressive and social anxiety symptoms, and support and strain. Results indicate two key findings: (1) Maltreatment is directly related to higher provisions of strain and lower perceived availability to support family members; (2) Symptoms of depression and social anxiety mediated the effect from maltreatment to enactments of strain towards family members, whereas the same finding did not hold for availability of support. Only depressive symptoms were identified as a pathway. Because families frequently are a source of CM, yet may remain connected in adulthood, these findings offer nuanced implications for addressing mental health and family wellbeing among who have experienced CM.

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**Keywords**

child maltreatment, family relationships, support, strain, depression, social anxiety, structural equation modeling, mediation

Childhood maltreatment (CM) negatively contributes to behavioral, emotional, and relational problems across the lifespan. Research has suggested that CM, defined by physical, sexual, and emotional abuse, as well as physical and emotional neglect (World Health Organization, 2020), is also associated with interpersonal problems across the life-course (Banford Witting & Busby, 2019; Knapp et al., 2017; Fitzgerald & Gallus, 2020; Kong et al., 2021; Whisman, 2014). For example, research has found that CM is detrimental to both couple and familial relationships (Kong et al., 2019; bib\_riggs\_and\_kaminski\_2010Riggs & Kaminski, 2010). The relationship between CM and adult interpersonal problem may operate through mental health problems such as depression and social anxiety. Mental health problems shape how adults perceive and behave within the context of interpersonal relationships (Barbee et al., 2000; Heerey & Kring, 2007) and may serve as possible pathways linking maltreatment to interpersonal difficulties often experienced by CM survivors. Depression and social anxiety are two discrete, yet comorbid symptom clusters that may be particularly impactful on adult interpersonal relationships (American Psychiatric Association, 2013).

Yet, little is known about the extent to which CM is associated with adult perceptions and enactment of support and strain in relation to family members. Support is defined by demonstrations of love, affection, care, and compassion (Thoits, 2011) and manifests as listening to family members' problems, offering advice, or showing compassion. In contrast, strain can be defined as actions that cause psychological distress and manifest as letting family members down, criticizing family members, and getting on family members' nerves (Walen & Lachman, 2000). This line of inquiry is critical for several reasons. First, much of the literature on familial relationships has centered on parents with young children and adolescents rather than the parent-adult child relationship. This literature gap renders a vague understanding of how CM informs perceptions of family relationships in adulthood. Second, although research indicates CM is related to later experiences of mental health problems (Cougle et al., 2010; Nelson et al., 2017), less is known about how these associations inform adult familial relationships. Third, from a public policy perspective, parents or primary caregivers are frequently dependent on their adult children later in life, including maltreating families (Wuest et al., 2010). For example, many adult children serve as informal caregivers to the aging parents, which can have significant health implications for both provider and recipient. Therefore, the prospect of caregiving makes it important to consider willingness to provide support and strain within a family context (Bauer & Sousa-Poza, 2015; Walen & Lachman, 2000; Woods et al., 2020). In contrast, there is little known about adult familial relationships among AMIC. From a life course perspective, there may or may not be changes that unfold over time in families where there is a history of maltreatment. In addition to health implications, a better understanding of how historical events influence contemporary family life can aid in theoretical development regarding risk and resilience.

## Child maltreatment and mental health symptomology

Each year, millions of children are reported to child protective services and millions more endure unreported maltreatment (Cicchetti & Toth, 2005). In a recent meta-analysis of maltreatment in the United States, Stoltenborgh et al. (2015) reported that roughly 24% of adults experienced childhood physical abuse, 36.5% endured emotional abuse, 19.2% encountered physical neglect, 14.5% noted emotional neglect, and 20.1% of women and 8% of men disclosed childhood sexual abuse. It is well established that CM is associated with depressive and social anxiety symptoms in adulthood (Bifulco et al., 2006; Chapman et al., 2004; Cogle et al., 2010; Flett et al., 2016; Luecken et al., 2013; Widom et al., 2007). Childhood abuse is characterized by betrayal, powerlessness, shame, and guilt, and these dynamics may ultimately lead to mental (DiLillo et al., 2009; Finkelhor & Browne, 1985). Symptoms of depression (e.g., loss of interest, withdrawal, irritability, etc.; American Psychiatric Association [APA], 2013) and social anxiety (e.g., fear of evaluation from others, preoccupied thoughts, and excessive worry in social situations, etc.; APA, 2022) may shape both perception and behavior in adult interpersonal relationships (Dunlop et al., 2015; Starr & Davila, 2008).

## Child maltreatment and adult relationships

Researchers have linked CM to various relational problems in adulthood (Colman & Widom, 2004; Dunlop et al., 2015; Larsen et al., 2011; Luecken et al., 2013; Salva et al., 2013). Adults maltreated in childhood (AMIC) may struggle with interpersonal relationships due to diminished social interaction skills, difficulty managing emotions, fear of relationships, and making more negative attributions about others' behavior (Author Citation; Dorahy et al., 2013; Paradis & Boucher, 2010). For example, AMIC are more likely to be emotionally distant from their families (Kong et al., 2019) and become emotionally dysregulated during conflict (Walker et al., 2009), which is likely to lead to poorer conflict resolution strategies (Knapp et al., 2017). Additionally, AMIC also struggle with effective communication (Banford Witting & Busby, 2019; DiLillo et al., 2009; Horan & Widom, 2015). In this way, CM may have a two-fold effect on adult interactions by decreasing the positive aspects of adult relationships and increasing the negative elements (Fitzgerald, Hamstra, & Ledermann, 2020; Whisman, 2014).

Familial relationships are likely to become strained in the event family members are the perpetrators of maltreatment, knowledgeable that the maltreatment occurred, dismissive of disclosure, or downplayed the impact of maltreatment. These historical problems have been reported to be influential, manifesting as less perceived support and greater perceived strain among adult family members (Kong et al., 2019). Not surprisingly, adult survivors of maltreatment tend to offer less emotional support to perpetrators of childhood maltreatment (Kong & Moorman, 2016). More generally, childhood maltreatment has been associated with fewer provisions of support given to family members and there does not appear to be any gender differences (Fitzgerald et al., 2020). AMIC may perceive themselves as less willing to provide support to their family members due to past maltreatment. In response, adults may create an emotional barrier where they are less

willing to provide support. Additionally, family members may not seek out support from the adult survivor provided that psychological difficulties may prevent attuned and responsive support and lead to further negative interactions, such as contempt and criticism.

Although consistent associations between childhood maltreatment and familial support and strain have been documented in research, the focus of such findings has remained limited to analyses of perceived support and strain received from family (e.g., [Kong et al., 2019](#)) or the amount of support given (e.g., number of hours) ([Kong & Moorman, 2016](#)). Findings from these investigations have highlighted that maltreatment influences contemporary family life, but continued inquiry is needed to better understand the nuances surrounding support and strain within families. For example, support and strain can be measured as perceptions available from family members, but also how frequently family members engage in supportive and strained behavior. The former is a measure of perception while the latter is a measure of enacted behavior ([Cohen et al., 2000](#)). Likewise, adults can report on their own willingness to provide support, as well as and how frequently the engage in either supportive or strained behavior.

## **Conceptual background**

Sociological, cognitive, and interpersonal perspectives have each made unique contributions to understanding the concepts of support and strain ([Cohen et al., 2000](#)). The interpersonal perspective provides a particularly compelling framework from which to understand family support and strain. As the name suggests, the interpersonal perspective on support and strain focuses on provision and reception of varying types of support within a transactional framework. Additional emphasis is placed on understanding the context in which support and strain are enacted. Thus, the interpersonal model is largely focused on specific behaviors and antecedents that govern such behavior. The interpersonal perspective also recognizes that other processes such as perception and attributions play an important role in understanding the transactional nature of support and strain ([Cohen et al., 2000](#)). For example, if an individual perceives and interpret another's distress to be a result of something that is within the potential recipient's control and is of low importance, then the individual is less likely to provide support and instead may be dismissive or critical ([Cohen et al., 2000](#)). Emotional processes have also been suggested to be a salient factor in understanding provision of support and strain ([Barbee et al., 2000](#)). For example, adults who demonstrate high positive affect are likely to approach others' distress by engaging in problem solving behaviors and express concern while those who higher in negative affect (e.g., depression) are more likely be change the subject ([Barbee et al., 2000](#)).

Depression and social anxiety are two of the more common mental health problems associated with CM and may play an important role in both provisions and perceptions of support and strain (see [Tse & Bond, 2004](#) for review). Adults who are more socially anxious and depressed may not have the psychological capacity or inclination to support family members. Likewise, family members of people who are more depressed or socially anxious may be less likely to ask for support from such family members. Additionally, family members may expect the offering of support to be turned down. Related to

depression, research has documented that depressed adults have more negative views of themselves and others (Gara et al., 1993; Ladegaard et al., 2014; Yeo et al., 2020) and may evaluate themselves as less willing to provide support. Furthermore, depression commonly manifests as social isolation and withdrawal. Consequently, these factors are likely to shape the extent to which withdrawn adults may perceive themselves as socially engaged and supportive.

Adults with more severe social anxiety also exhibit problems in interpersonal relationships. Social anxiety is thought to be a self-preservation strategy, protecting against negative evaluations. Negative expectations related to interpersonal interactions increase the focus on themselves and decreases focus on others (Heerey & Kring, 2007). Compared to adults with less social anxiety, those with greater social anxiety perceive others to react more negatively to them (Pozo et al., 1991); however, relative to how others view those with more severe social anxiety, the greater negative self-perceptions are substantially stronger (Christensen et al., 2003; Porter & Chambless, 2017). In other words, social anxiety appears to play a more integral role in self-perception compared to how someone is viewed by others. Underlying fear of negative self-perceptions is likely to shape how adults perceive their interactions with others, both positively (e.g., support) and negatively (e.g., strain). For example, studies have reported that social anxiety is associated with less conversation, greater reassurance seeking, and asking fewer questions of others (Heerey & Kring, 2007).

Despite the strengths of the interpersonal perspective on support and strain, one of the notable weaknesses is that it does not consider the developmental context that may directly and indirectly contribute to willingness and enactment of support and strain. The convoy model, which is an extension of the family life course theory, provides a useful conceptualization of developmental factors that may contribute to interpersonal processes (Antonucci et al., 2013). The convoy model suggests that individuals are surrounded by others, including family members, friends, and romantic partners, with whom they move through the life-course (Antonucci et al., 2013). Convoys are heterogeneous in nature, with differences in relationship quality, function (e.g., tangible or emotional support), and structure (e.g., frequency of contact). Numerous factors contribute to convoy heterogeneity and include personal (e.g., relationship history) and contextual variables (e.g., values). To best understand current relationship functioning, Antonucci et al. (2013) acknowledged that both current life circumstances as well as historical experiences with attachment relationships across the life course must be considered. Thus, adults who were maltreated in childhood are likely to have a greater number of problems within their convoy compared to adults who did not experience maltreatment. Further, it is assumed that the greater number of problems early in life sets forth a developmental trajectory that leaves adults more vulnerable to future relationship problems.

## **Childhood maltreatment, mental health, and familial support and strain**

Although several studies have identified the detrimental effects of CM on family life in middle adulthood, important gaps remain. First, additional research is needed to explore

the nuances of familial relationships more extensively. Studies have combined support and strain for an overall indicator of emotional climate within adult familial relationships (Fitzgerald et al., 2020) or on adult perceptions of how available family members are to them (Kong et al., 2019). Likewise, there is little research on behavioral reports of strain, with other studies having focused on provisions of support (Kong & Moorman, 2016). Second, examining depression and social anxiety as mediators can provide a more specific and precise understanding of how childhood maltreatment may shape support and strain in contemporary adult family life among AMIC. Further, prior research on support and strain has demonstrated unique effects on the *type* of relationship within one's social network, suggesting a hierarchy of support and strain sources (Pierce & Quiroz, 2019). Specifically, spouses appear to influence emotional states the most, with children as the second most influential and friends as the least influential on emotional states (Pierce & Quiroz, 2019). However, less is known about how support and strain vary among general family members of AMIC.

### *The present study*

In the current study, we sought to determine if depressive and social anxiety symptoms link CM to adult perceptions of how available they believe they are to willing to provide support to their families and how frequently they engaged in strained interactions with their family members. Specifically, we examined adults' perceptions of how willing they are to support their family members and how frequently they engage in strained behavior directed towards their family members. Our hypotheses are as follows: (1) Adult reports of CM severity will positively predict symptoms of depression, social anxiety, and greater enacted strain and less willingness to provide support from the maltreatment survivor; (2) Symptoms of depression and social anxiety will positively correlate to perceptions of familial strain and be inversely associated with willingness to provide familial support; and (3) Depression, and social anxiety symptoms will mediate the relationship between CM and AMIC perceptions of willingness to provide support and enacted strain. The current study controlled for race, education, income, number of children, parental depression, and gender.

### **Method**

Data were from the study of Midlife Development in the United States (MIDUS), a longitudinal study of adults' health and wellbeing. The MIDUS study started in 1995–1996 (MIDUS 1) and comprised a sample of 7108 noninstitutionalized English-speaking adults. The MIDUS data included a national probability sample ( $N = 3487$ ), in addition to over-samples in metropolitan areas ( $N = 757$ ), siblings ( $N = 950$ ) of the main respondents, and a national sample of twin pairs ( $N = 1914$ ). Data were collected using a telephone interview and self-administered questionnaire (SAQ). Of the original 7108 individuals in MIDUS 1, 4963 provided follow-up data in MIDUS2. The second wave of MIDUS data collection occurred between 2004 and 2006, and the data collection methods mirrored those of MIDUS 1. The MIDUS 2 study also included several subprojects, including a

daily diary, cognitive, biomarker, and neuroscience studies. Each study used a subset of participants drawn from the MIDUS 2. The biomarker study comprised a subset of participants who completed telephone interviews and SAQ at MIDUS 1 and MIDUS 2 ( $n = 1054$ ) and a new subsample of African Americans ( $n = 201$ ) totaling 1255 participants. The biomarker project provided other self-administered scales and collection of biological samples (e.g., heart rate variability). Participants were compensated \$20 for the MIDUS 1 survey, up to \$60 for the MIDUS 2 and \$200 for the MIDUS 2 biomarker. The primary study variables were assessed in the biomarker project; several control variables were extracted from the MIDUS 2.

### Participants

Participants were included in the current study based on the following two key selection criteria: (1) they participated in the biomarker study and; (2) they had at least one living parent, which was designated because maltreatment is most often perpetrated by parents/primary caregivers (Sedlak et al., 2010). Of the 1255 participants who participated in the biomarker project, 568 participants reported having at least one living parent and participated at MIDUS 1 and 2. Participants were more likely to be female (56.9%) than male (43.1%), and participant ages ranged from 35 to 76 ( $M = 51.52$  years;  $SD = 8.21$ ). Participants were primarily White (91.2%), with substantially lower percentages of participants being Black (2.1%), Native American (1.8%), and Asian (.5%); the balance reported being "other," or do not know (4.3%). One participant declined to respond to their racial background (.01%). Participants tended to be heterosexual ( $n = 538$ ; 95.7%) with 12 (3.2%) gay or lesbian people, 6 (1.1%) bisexual individuals, and six did not specify their sexual orientation (1.1%). The vast majority of participants were not disabled ( $N = 561$ , 98.8%) while six participants (1.1%) reported being permanently disabled and one person did not know. Likewise, participants tended to be well-educated, with 18.9% of adults reporting a high school education, 20.7% reported some college but did not graduate, 24.2% reported graduating from college, 4.9% reported some graduate school but did not graduate, 15.5% reported a master's degree, and 4.9% reported a doctorate or other professional degree. A large proportion of adults in the current study reported being currently employed (68.7%) and reported an average household income of \$89,720.93 ( $SD = \$62,827.84$ ).

### Measures

**Childhood maltreatment.** CM history was assessed using the Childhood Trauma Questionnaire (CTQ; Bernstein et al., 2003). The CTQ is a 25-item scale that assesses childhood abuse and neglect before the age of 18. Items were scored on a five-point Likert scale, ranging from *Never* (1) to *Very frequently* (5). The range test-retest value for the CTQ is .80–.97. The CTQ has been found to have construct, structural validity, and criterion-related validity (Bernstein et al., 2003). Example items included "People in my family said hurtful or insulting things to me" and "People in my family hit me so hard that it left me with bruises or marks." For this study, we operationalized CM by summing the

emotional, physical, and sexual abuse and emotional and physical neglect subscales together for an overall indicator of maltreatment severity. Higher scores are indicative of more severe maltreatment. Cronbach's alpha in this study was .82

**Depressive symptoms.** The Center for Epidemiologic Studies Depression (CES-D; Radloff, 1977) measure assessed depressive symptoms over the past week. The CES-D is a 20-item scale rated on a four-point Likert type scale ranging from *Rarely or none of the time* (0) to *Most or all of the time* (3) with three reverse coded items. The CES-D demonstrates convergent validity, acceptable internal consistency, and test-retest reliability (Radloff, 1977). Items were summed together for a composite severity score of depressive symptoms. Example items include "I felt depressed" and "I could not 'get going.'" Cronbach's alpha in the present study was .75

**Social anxiety symptoms.** Social anxiety symptoms were assessed with the Liebowitz Social Anxiety Scale (Fresco et al., 2001). The Liebowitz Social Anxiety Scale has demonstrated convergent validity, test-retest validated, strong internal consistency, and discriminant validity (Baker et al., 2002). Items consisted of 9 different anxiety-provoking scenarios rated on a four-point Likert scale ranging from *None* (1) to *Severe* (4). Example items include "Being the center of attention" and "Talking to people in authority." Items were averaged to create a mean severity score of social anxiety. Cronbach's alpha in the current study was .85

**Support and strain.** The MIDUS data provided measures of an individual's perceptions of support and strain at the biomarker project. Two items assessed perceptions of the willingness to provide support and included "How much can your family (not including your spouse or partner) rely on you for help if they have a serious problem?" and "How much can your family open up to you if they need to talk about their worries?" Participants responded using a 4-point Likert type scale ranging from *A lot* (1) to *Not at all* (4). Items were recorded and averaged so that higher scores reflected higher levels of willingness to provide support. These indicators of support reflect the multidimensional nature of support and assess both participants perception of their willingness to provide support but also how much family members may seek it out from the participant. Perceptions of strain were measured with four items. Items included "How often do you make too many demands on members of your family?", "How often do you criticize your family?", "How often do you let your family down when they are counting on you?" and "How often do you get on your family's nerves?" In contrast to the support items, the strain items reflect enacted behavior rather than perceptions of availability. Items were scored on a Likert-type scale ranging from *Often* (1) to *Never* (4) and recoded so that greater scores were associated with greater strain. The four items were averaged together. The MIDUS data did not have measures of enacted support or availability of strain. Cronbach's alpha was .61 and .62 for support and strain respectively.



## Covariates

*Race.* Participants' race was dichotomized to (White/racial minority).

*Education.* Levels of educational achievement were dichotomized to participants who did not attend college (0) and those who attended at least some college (1).

*Gender.* Participants were coded as either male or female.

*Maternal and paternal depression.* Participants were asked about any family members that had a history of depression using a dichotomous response option (yes/no). Responses related to participants' mothers and fathers were included.

*Age.* Age was assessed at the biomarker study and entered as a continuous variable.

*Children.* Participants reported on the number of children they had.

## Analytic strategy

We employed structural equation modeling (SEM) to test the relationship between CM, depressive and social anxiety symptoms, and familial support and strain. SEM is a theory-driven statistical approach that compares the proposed theoretical model to the observed data. We applied numerous indices to evaluate the model-data fit, including the comparative fit index (CFI), Tucker-Lewis index (TLI), chi-square statistic, and root mean square error of approximation (RMSEA). CFI and TLI values greater than .90 demonstrate adequate fit, and values greater than .95 demonstrate good fit (Hu & Bentler, 1999; Kline, 2015). RMSEA values below .06 and a non-significant chi-square test also demonstrate a good fit (Hu & Bentler, 1999). One of the advantages of SEM is that it allows researchers to test for multiple indirect (mediating) effects simultaneously. To measure indirect effects, we used bootstrapping, which is a useful strategy in testing model effects with sub-samples of a larger sample to specify indirect effects (Preacher et al., 2007). SEM provides a point estimate and 95% confidence interval and if 0 lies between the upper and lower bound of the confidence interval, then the indirect effect is non-significant. SEM analysis was conducted using maximum likelihood estimation in MPlus 8.0. Missing data was low, as all study variables had at least 99.3% complete data and missing data were deemed missing at random.

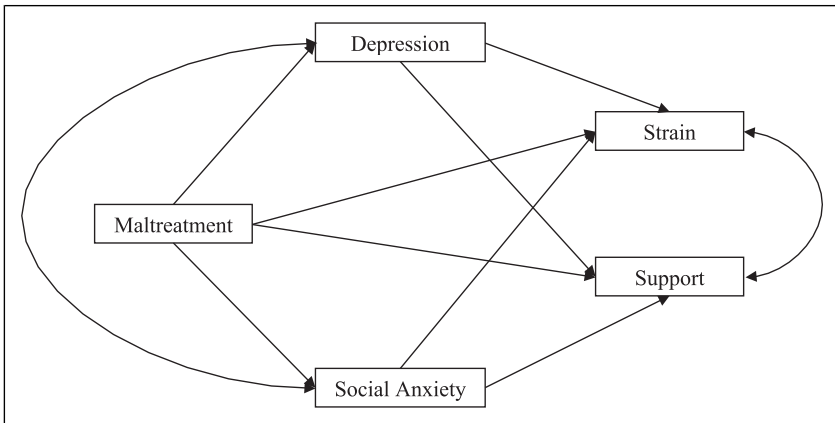
## Results

Table 1 displays correlations, means, and standard deviations. Following bivariate correlations, we ran structure equation models. The theoretical SEM model (See Figure 1) was a saturated model yielding fit indices of CFI = 1.000, TLI = 1.000, RMSEA = 0; therefore, model-data fit unable to be examined. To examine model-data fit, we ran the saturated model to determine which paths were non-significant. The non-significant

**Table 1.** Correlations, means, and standard deviations for key study variables.

Variable	1	2	3	4	5	M (SD)
1. Maltreatment	-					37.99 (13.65)
2. Depression	.34**	-				8.55 (8.12)
3. Social anxiety	.21**	.35**	-			1.88 (.63)
4. Strain	.22**	.13**	.10*	-		1.77 (.70)
5. Support	-.14**	-.17**	-.34**	-.41**	-	3.81 (.57)

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



**Figure 1.** Theoretical model linking childhood maltreatment to provisions of support and strain given to family members through depressive and social anxiety symptoms.

path(s) were removed and a chi-square difference test was used to evaluate whether the removal of the path detracted from the overall fit of the model. The only non-significant path was from symptoms of social anxiety to availability to provide support ( $\beta = -.08, p = .17$ ) and the chi-square difference test was non-significant  $\chi^2(1) = 1.71, p = .19$ , indicating the removal of the path did not meaningfully change the model-data fit. Since all other paths were significant, this was the final model and it demonstrated adequate model-data fit:  $\chi^2(1) = 1.71, p = .19, CFI = 1, TLI = .91, RMSEA = .04$ .

In the final model (see Table 2), we found that CM was positively associated with symptoms of depression ( $\beta = .35, p < .001$ ) and social anxiety ( $\beta = .22, p < .001$ ) such that greater CM severity was associated with greater symptoms of depression and social anxiety. Likewise, CM was associated with lower levels of perceived availability to provide support ( $\beta = -.21, p < .001$ ), and more frequent enactments of strain ( $\beta = .12, p = .01$ ). The path from depressive symptoms to perceived availability to provide support was significant ( $\beta = -.11, p = .03$ ). Adults who reported higher depressive symptoms felt that they were less available to provide support to family members. Regarding enacted strain, both depression ( $\beta = .15, p = .005$ ) and social anxiety ( $\beta = .12, p = .009$ ) were significant.

**Table 2.** Standardized and Unstandardized Direct Effects in the Path Model.

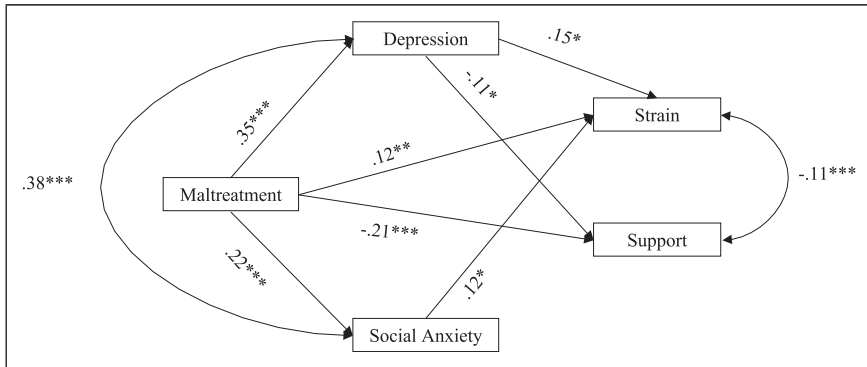
Independent variable	Outcome variable	<i>b</i>	$\beta$ (SE)	<i>p</i>
Maltreatment	Depression	.23	.35 (.05)	<.001
Maltreatment	Social anxiety	.01	.22 (.05)	<.001
Maltreatment	Support given	-.01	-.21 (.07)	<.001
Maltreatment	Strain given	.01	.12 (.05)	.03
Depression	Support given	-.01	-.11 (.06)	.05
Depression	Strain given	.01	.15 (.07)	.02
Social anxiety	Strain given	.10	.12 (.04)	.006

Higher levels of depression and social anxiety were associated with greater strained behavior directed towards family members. [Figure 2](#) shows the final model.

The indirect effects are presented in [Table 3](#). The indirect effect of CM to availability to provide support through depressive symptoms was significant ( $\beta = -.037$ , 95% CI [-.085, -.002]). Regarding the indirect effects of maltreatment to perceptions of strain, depressive and social anxiety symptoms were significant. We found that CM was indirectly associated with strain through depressive ( $\beta = .051$ , 95% CI [.009, .103]) and social anxiety symptoms ( $\beta = .026$ , 95% CI [.008, .054]). Overall, the model explained 19.2% of the variance in depressive symptoms, 6.7% for social anxiety, 11.3% for perceptions of willingness to provide support, and 11% for perceptions of strain.

## Discussion

CM can significantly impact attachment relationships and has been extensively studied in children, adolescents, and adults. However, there has been substantially less research on how AMIC relates to contemporary family relationships during the adult years. Understanding how AMIC interact with their family members is critical to consider within contemporary family life. Increased life expectancy has resulted in an increasing demand for adults to support their aging parents and siblings ([Bangerter et al., 2018](#)), with significant implications for adult physical morbidity ([Woods et al., 2020](#)). Consequently, it is crucial to identify potential mediators linking CM to support and strain. We proposed that symptoms of depression and social anxiety would be particularly important provided they have established associations with interpersonal relationships. Findings from the study make several significant contributions to the literature. First, results indicate that CM is directly related to less availability to provide support and greater enactment of strained behavior. Second, we also identified depressive and social anxiety symptoms as potential mediators; depressive symptoms linked CM to both willingness to provide support and enacted strain; whereas social anxiety symptoms were only linked to enacted strain. Last, we framed our study in the context of interpersonal models of social support while also recognizing that such models do not place enough attention on the developmental context previously suggested to shape both support and strain ([Antonucci et al., 2013](#); [Dunkel-Schetter & Skokan, 1990](#)). Thus, findings from the current study provide



**Figure 2.** Final SEM Model Linking Childhood Maltreatment to Provisions of Support and Strain Given to Family Members Through Depressive and Social Anxiety Symptoms. Note. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .

**Table 3.** Standardized Indirect Effects from Maltreatment to Support and Strain in Relation to Family Members.

Indirect effect	Estimate ( $\beta$ )	95% bootstrapped CI
Maltreatment -> depression -> strain	.051	[.009, .103]
Maltreatment -> depression -> support	-.037	[-.085, -.002]
Maltreatment -> social anxiety -> strain	.026	[.008, .054]

evidence that integrating several theoretical perspectives together in order to understand the relationship between CM, mental health, and familial support and strain in midlife adults can provide a more nuanced picture of adult family life.

CM has longstanding effects on adults and shapes both perception and behavior (Cozolino, 2015). Maltreating families are commonly characterized as chaotic, volatile, conflictual, disengaged, or enmeshed (Stith et al., 2009) and these historical factors sets the foundation for adult family life across the life course (Antonucci & Akiyama, 1987; Dunkel-Schetter & Skokan, 1990; Kong & Moorman, 2016). In the SEM model, we found multivariate support for our first hypothesis. Maltreatment was associated with higher levels of depression and social anxiety, consistent with prior research (Nelson et al., 2017; Simon et al., 2009). Additionally, and somewhat unexpectedly, we also found that AMIC was also directly linked with decreased willingness to provide support availability, suggesting that participants either perceived themselves to be less available to their family members or that family members are reluctant to seek out the participant’s for support. While the former is more likely to be the case due to a history of maltreatment, it could also be that AMIC may be open to helping family members due to an established role as a caretaker, but family members disengage from the adult maltreatment survivor (Wuest et al., 2010). For example, Kong et al., (2019) found that childhood abuse

predicted less frequent communication with the perpetrating parents. Relatedly, AMIC may be more emotionally cutoff from their families and may be more unwilling to acquiesce to family members' emotional demands (e.g., mediating family conflict) or rebellion against established family roles may lead to greater enactment of strain, evidenced by a direct effect from CM to provisions of strain. These effects are independent of depressive and social anxiety symptoms and instead may reflect contempt, anger or resentment towards family members.

Likewise, CM was directly and positively associated with greater provision of strained behavior directed towards family members. Adults who were maltreated in childhood tend to report that their families in adulthood make too many demands of them, are critical, and are not understanding (Priest, 2013). In response to perceived family strain, adults who were maltreated may be more emotionally dysregulated and respond with defensiveness and contempt, which has been found within the couple relationship (Walker et al., 2009). Additionally, the increased autonomy and decreased interdependence that midlife adults have compared to when they were children may lead adults to confront maladaptive, yet entrenched family roles (e.g., caretaker, mediator, scapegoat), which may escalate conflict and negative sequences of interaction. Alternatively, engaging in more strained behavior may be a consequence of unresolved trauma that fosters anger and resentment. This proposition, though theoretically consistent with the traumagenic dynamics model (Finkelhor & Browne, 1985), is speculative and requires empirical examination. Constructs such as resentment and forgiveness may be particularly fruitful areas of inquiry.

A second notable contribution to the literature is the documentation of depressive and social anxiety symptoms as potential mediators linking CM to perceptions of availability to provide familial support and provisions of strained behavior. Supporting the study's second hypothesis, our findings are consistent with interpersonal models of support and strain, which suggests that mood can be a discriminating factor in determining whether adults are willing to provide support or express strain (Barbee, 1990; Cohen et al., 2000). Negative mood states (e.g., depression and social anxiety) may lead to increased avoidance of interacting with family members, criticism, or withdrawal; whereas more positive mood states are linked to problem solving and coping strategies (Barbee, 1990). Further, results of the current study indicate that both depressive and social anxiety symptoms play an important role in understanding communication processes; therefore, the independent effects of each deserve future research consideration.

We identified that adults' depressive symptoms might be a potential mediator linking CM to support and strain, supporting our third hypothesis. CM was associated with greater depressive symptoms (Nelson et al., 2017), which was associated with less willingness to provide emotional support and greater enactments of strain. Regarding perception of support availability, depressed adults tend to have a more cognitive style, hold more negative perceptions about themselves and others, tend to be more socially isolated, and may be emotionally cutoff from their families (Cohen et al., 2019; Yeo et al., 2020). Consequently, adults with higher levels of depression are more likely to perceive themselves as unavailable to their family members and engage in more strained behavior. Likewise, we found that social anxiety symptoms were a potential mediator linking CM to enactment of

strained behavior directed towards family members. More precisely, adults with social anxiety may fear continued negative evaluations of family members. These findings suggest that AMIC may not feel important or valued to their families (Flett et al., 2016), leading to fear of additional rejection. As a result of overwhelming anxiety and fear adults may be less expressive and curious and instead more critical or dismissive (Barnett et al., 2021; Heerey & Kring, 2007; Weeks et al., 2011).

### *Limitations and future directions*

The results of our study indicate that depressive and socially anxious symptoms may be mediators linking CM to perceptions of adults' ability to be emotionally available and engagement in strained behavior. Despite our findings, our study is not without limitations. First, our study is cross-sectional. Although there is a sense of temporal ordering due to retrospective reports of maltreatment, the ordering of depressive and anxious symptomology and support and strain provided to family cannot be determined. Longitudinal research could begin to establish the directionality of the associations. Additionally, it remains unclear whether maltreatment, depression, and social anxiety influenced participant's responses to support and strain measures due to distorted perceptions of themselves or if adults who were maltreated actually are less emotionally available to their families and more likely to be critical or avoidant. Theoretically, adults who experience more maltreatment (e.g., shame, guilt) and greater mental health problems (e.g., fear, pessimism) are likely to commonly hold more negative views of themselves and others (van der Kolk, 2015) while also engaging in more negative behaviors as reported by others (Whisman, 2014). Future research will need to design studies to disentangle perceptual and behavioral consequences of maltreatment and mental health problems and their associations with support and strain.

Second, social desirability may play a role in adults' responses to questionnaires, particularly their self-evaluations of support and strain; using dyadic or triadic data of assessing adults and their family members could provide a possible remedy (e.g., actor-partner interdependence modeling or social relations modeling). Third, in addition to social desirability, there is recall bias in retrospective reports of CM (Liang et al., 2006). However, research suggests that retrospective reports of maltreatment are biased toward underreported, indicating that associations may potentially be stronger than documented (Hardt & Rutter, 2004). Fourth, investigating the implications of emotional support and strain can further underscore the importance of emotional support and strain provided to family in adulthood. For example, linking perceptions of emotional support to specific health and caregiving behaviors would be an important next step. Fifth, measures for perceptions of support and strain were broad to include all family members except for the spouse; discerning support and strain to specific relationships is essential given that parental maltreatment has a conceptually different connotation than sibling-based maltreatment (Pierce & Quiroz, 2019). Similarly, it is challenging to study the association between child maltreatment and familial relationships, as family relationships are not unidimensional. Those who abused the participants in this study may still abuse them psychologically, potentially reducing internal validity.

Another limitation is that support and strain demonstrated a lower internal consistency that was acceptable, but lower than desired. Our sample was highly educated, predominantly White, heterosexual, able-bodied, and reported moderately high-income and education levels, thus generalizability to other populations is limited. Likewise, the MIDUS data did not have an explicit measure for various demographic information (e.g., gender identity). Future research would benefit from samples with higher heterogeneity across demographics. Based on previous findings that gender may moderate the relationship between child maltreatment and relationships in adulthood (Loucks et al., 2019; Peterson et al., 2018), future research may want to consider the moderating effects of gender in the association between child maltreatment and adult relational health. Finally, our study used participant's own definitions of who is considered family, which may create variation between participants on who is evaluated. For example, participants who were severely maltreated by their parents may not consider them family and thus report that they have a satisfying family life despite a contentious or cutoff relationship with the perpetrator. While the participants were midlife and older adults and presumably ascribe to more traditional definitions of family (e.g., parents, siblings, ect), this assumption could not be examined. Future research should consider relationship specific measure of support and strain.

## **Conclusion and implications**

CM is critical to understanding adults' interpersonal relationships and may be particularly salient within adults' familial relationships (Parker et al., 2018). The study's primary aim was to investigate how CM was associated with adult perceptions of adults' perceived ability to provide support to family members and enacted provision of strain and examined depressive and social anxiety symptoms as possible mediators. Our findings indicate that CM negatively contributes to support availability and positively contributes to perceptions of enacted strain both directly and indirectly through depressive and anxious symptoms with the exception of social anxiety predicting support availability. Additionally, practitioners and therapists working with multigenerational families should assess how past maltreatment may impact perceptions of support and strain with a particularly focus on depressive symptoms, as they are likely to play a role in distortions of support and strain.

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## Open research statement

As part of IARR's encouragement of open research practices, the author(s) have provided the following information: This research was not pre-registered. The data used in the research are available. The MIDUS 2 and MIDUS 2 Biomarker data can be obtained at <https://doi.org/10.3886/ICPSR29282.v9> and <https://doi.org/10.3886/ICPSR04652.v7>. The materials used in the research are also available at <https://doi.org/10.3886/ICPSR29282.v9> and <https://doi.org/10.3886/ICPSR04652.v7>. The material available can be obtained by emailing [Michael.C.Fitzgerald@usm.edu](mailto:Michael.C.Fitzgerald@usm.edu)

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