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A Drive for Redemption: Relationship Quality as a Mediator Linking Childhood Maltreatment to Symptoms of Social Anxiety and Depression

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Abstract
Childhood maltreatment is associated with mental health problems across the life course and depression and social anxiety are two of the more common problems. Given the interpersonal nature of childhood maltreatment, adult romantic relationships have also been a keen interest. It has been suggested that the interpersonal relationships may mediate the relationship between maltreatment and adult mental health; however, little research has examined the mediating role of adult romantic relationships. This omission misses an opportunity to advance empirical understanding as well as clinical intervention. To address this gap, the current study utilized a sample of 785 adults using two waves of data from the study of Midlife of Development in the United States to examine relationship quality as a mediator linking childhood maltreatment to adult depressive and social anxiety symptoms. Interpretation of structural equation models indicated that there were significant indirect effects from childhood maltreatment to both symptoms of depressive and social anxiety through relationship quality. Results of post hoc analysis suggested that gender did not moderate any direct or indirect paths. In light of the significant indirect effects, relationship quality may be a point of intervention. Having a high-quality romantic relationship can provide a corrective experience for adults who were maltreated in childhood, thereby decreasing symptoms of depression and social anxiety.

Keywords Childhood maltreatment · Relationship quality · Depression · Social anxiety · Mediation

Childhood maltreatment is common in the United States. A recent meta-analysis found that roughly 24% of adults reported childhood physical abuse, 36.5% reported emotional abuse, 19.2% reported physical neglect, 14.5% reported emotional neglect, and 20.1% of women and 8% of men reported childhood sexual abuse (Stoltenborgh et al., 2015). Mental health problems are common in the general population (Kessler et al., 2012), and elevated among adults with a history of maltreatment. Adults who experienced more severe maltreatment in childhood tend to also experience worse mental health outcomes (DiLillo et al., 2007). Research has found that childhood maltreatment is associated with numerous mental health problems (Afifi et al., 2012; Chapman et al., 2004; Cougle et al., 2010; Kong et al., 2019).

Given that childhood maltreatment is an act of omission (e.g., neglect) or commission (e.g., abuse) that is perpetrated by figures who are entrusted with the child's safety and wellbeing, it has been proposed that healing from childhood maltreatment occurs within the context of safe, secure relationships (Johnson, 2002). Attachment theorists would suggest that early caregiving experiences create internalizing representations of relationships. If children are maltreated in childhood, they commonly develop negative internal working models, which are internalized representations of relationships and govern perception, cognition, emotion, and behavior. Children with negative internal working models come to expect others to be unsupportive, rejecting, and sources of distress and as a result become closed off to relationships or become overly dependent on them for satisfaction and fulfillment. Internal working models tend to stay relatively stable over time and extend into adulthood (Waters et al., 2000). Negative internal working models, coupled with other risk factors (e.g., selecting high risk partners,

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more negative patterns of interaction), enhance the likelihood of a poorer quality relationship (Godbout et al., 2009). On the other hand, negative internal working models are subject to change through positive experiences in relationships, or what has been termed an earned secure attachment. Through experiencing support, connection, attunement, and love, adults who were previously maltreated may come to be securely attached to their partners. Although research has suggested that relationships are a crucial aspect of healing from childhood maltreatment and reducing mental health problems (Kong et al., 2019; Runtz & Schallow, 1997; Sperry & Widom, 2013), few studies have considered the role of adult's romantic partners.

Interpersonal relationships have been suggested to mediate the relationship between childhood maltreatment and adult mental health outcomes (Fitzgerald & Gallus, 2020; Kong, 2017; Shaw & Krause, 2002; Sperry & Widom, 2013). Despite research documenting the potential mechanistic feature of adult interpersonal relationships, substantially less attention has been given to adult's romantic relationships. Research has documented that social support is an essential to understand the association between childhood maltreatment and adult mental health (Sperry & Widom, 2013). The role, however, of romantic partners has either been omitted (Runtz & Schallow, 1997) or combined with other forms of support (Kong et al., 2019), so the independent contributions of adult romantic relationships on adult mental health among adults who were maltreated in childhood remain unclear. To address this gap in the literature, the current study examined relationship quality as a mechanism linking childhood maltreatment to symptoms of depression and social anxiety. Further, the current study will use two waves of data to establish temporal ordering between relationship quality and adult mental health.

Childhood Maltreatment and Adult Mental and Relational Outcomes

Childhood maltreatment is public health problem with robust associations with adult mental health problems. Taillieu et al. (2016) found that childhood maltreatment was associated with increased likelihood for depression, dysthymia, posttraumatic stress, generalized anxiety, social anxiety, panic, alcohol dependence, and drug dependence. Depression and social anxiety are two of the more common mental health outcomes associated with childhood maltreatment (Cougle et al., 2010; Chapman et al., 2004; Nanda et al., 2016; Widom, et al., 2007). For example, in a nationally representative sample, Cougle et al. (2010) found that childhood maltreatment was associated with a 46% increase in the odds of meeting criteria for social anxiety disorder. Regarding depression, a recent meta-analysis demonstrated that childhood maltreatment was associated with an 282% increase in the odds of depression (Nelson et al., 2017). Additionally, numerous studies have shown that maltreatment is also associated with subclinical symptoms of depression and social anxiety (Feerick & Snow, 2005; Fitzgerald & Gallus, 2020; Gibb et al., 2007; Nanda et al., 2016; Widom et al., 2018).

Because childhood maltreatment is an interpersonal violation and betrayal, it can have a profound impact on children's ability to trust others and these issues often extend into adulthood. Adults who were maltreated often have an insecure attachment style (Muller et al., 2012), have poor interpersonal skills (Paradis & Boucher, 2010), and make more negative attributions about other's behavior (McCarthy & Taylor, 1999). Not surprisingly, childhood maltreatment has also been linked to problems within adult romantic relationships. Studies have shown that childhood maltreatment is associated with poorer communication (Banford-Witting & Busby, 2019), less emotional support (Fitzgerald & Gallus, 2020), greater conflict (Bigras et al., 2015), and more volatile conflict resolution styles (Knapp et al., 2017). In a dyadic study, Whisman (2014) found that adults who were maltreated in childhood perceived their partners to engage in more negative and fewer positive interactions. Further, he also found that adults who were maltreated in childhood were perceived by their partners to also engage in more negative and fewer positive interactions. These results indicate that childhood maltreatment may lead to negative sequences or patterns of interaction. Relationships characterized by volatile conflict resolution strategies, fewer positive and more negative interactions, and less support are reflective of less satisfying and lower quality relationships.

Among studies investigating the overall quality of the relationship, there is a consistent, negative relationship between childhood maltreatment and relationship quality (Colman & Widom, 2004; DiLillo et al., 2009; Larsen et al., 2011; Riggs et al., 2011). These studies, however, have used global assessments of relationship quality which provide important contributions to researchers; provide less information to clinicians (DiLillo et al., 2009). Understanding specific processes within the interactions and dynamics provides a more nuanced understanding of what specifically is occurring within adult intimate relationships (DiLillo et al., 2009). Further, intimate relationships are multidimensional relationships (Spanier, 1976) and in accordance with this perspective the current study conceptualized relationship quality as a latent construct reflected by three indicators including support, strain, and disagreement. Prior research has taken similar approaches to measuring relationship quality because the indicators together reflect the overall construct (Bryant et al., 2016).

Relationship Quality and Adult Mental Health

Adult romantic relationships may have significant implications for mental health outcomes (Whisman, 2007). Romantic relationships may serve as a potential pathway linking childhood maltreatment to adult mental health. The marital discord model of depression suggests that stress, strain, and conflict in adult intimate relationships potentiate mental health problems (Beach et al., 1990). An additional proposition of the marital discord model is that because of increased discord there are also fewer opportunities for positive interactions and support. Beach et al. (1990) suggest that depressive symptoms are a consequence of fewer positive and more negative behaviors rather than depression causing such behavior. Numerous studies have found support for the discord model of depression (Beach et al., 2003; Fincham et al., 1997; Hollist et al., 2007; Whisman & Bruce, 1999; Whisman & Uebelacker, 2009).

Additional studies have also noted that relationship quality is an important predictor of mental health problems beyond depression. An inverse association between relationship quality and substance use, affective symptoms, anxiety, and psychological distress have been established (Fleming et al., 2010; Gagnon, et al., 1999; Overbeek et al., 2006; Preist, 2013; Walen & Lachman, 2000; Whisman & Baucom, 2012). Preist (2013) examined the association between the quality of adult's romantic relationships and the twelve-month prevalence of anxiety disorders. He noted that married adults, compared to those who were single, divorced, separated, or widowed reported lower prevalence rates of agoraphobia, posttraumatic stress disorder, generalized anxiety disorder, panic attacks, panic disorder, and social phobia. Further, he found that relationship quality was associated with reduced likelihood of generalized anxiety, panic, and posttraumatic stress disorder (Preist, 2013).

Relationship Quality as a Mediator From Maltreatment to Adult Mental Health

Although it has been proposed that adult romantic relationships mediate the relationship between childhood maltreatment and adult mental health, few studies have examined this proposition. Specifically, emotional support from adult's romantic partner was a mediator linking childhood maltreatment to adult depression and social anxiety (Fitzgerald & Gallus, 2020). A second study found that mattering, or a sense of feeling important to other people, was identified as a possible mechanism linking childhood maltreatment to loneliness and social anxiety (Flett et al., 2016). Although these studies suggest that intimate relationships play an important role in understanding adult mental health, they have only focused on specific aspects of adult intimate relationships without considering other dimensions. To provide a more precise understanding of adult romantic relationships, the current study will use several indicators to measure relationship quality including support, strain, and disagreement.

The Present Study

To investigate the possible mediating role of relationship quality linking childhood maltreatment to symptoms of depression and social anxiety, the current study used two waves of data. Based on extant literature it was hypothesized that childhood maltreatment will be associated with greater levels of depressive and social anxiety symptoms and lower levels of relationship quality. Second, relationship quality is hypothesized to be negatively associated with depressive and social anxiety symptoms. Last, it was hypothesized that childhood maltreatment will be indirectly related to adult depressive and socially anxious symptoms through relationship quality.

Methods

Data are from the National Survey of Midlife in the United States (MIDUS). The first MIDUS study (MIDUS 1) comprised a national sample of 7,108 English-speaking adults in 1995–1996. The MIDUS 1 study collected data via telephone interview and self-administered questionnaire (SAQ). In 2004, the first follow-up assessment was conducted (MIDUS 2) and mirrored the data collection methods of MIDUS 1. Of the original sample, 4,963 adults participated in MIDUS 2. MIDUS 2 also included a biomarker follow-up project that comprised a subset of participants who completed both the MIDUS 1 and MIDUS 2 telephone interviews and SAQ ($n = 1{,}054$) as well as a new subsample of racial minorities ($n = 201$), totaling 1,255 participants. There was variation in the time lag between the MIDUS 2 and the biomarker follow-up, ranging from 6–60 months. In addition to biological samples (i.e., fasting glucose), the biomarker project provided additional self-administered scales, including depression, social anxiety, and childhood maltreatment. For the current study, the indicators of relationship quality were drawn from the MIDUS 2 SAQ and telephone interview, which was assessed first, while childhood maltreatment, depression, and social anxiety were taken from the biomarker follow-up project.

MIDUS 1 offers assessments of childhood maltreatment measured across perpetrators, including mothers, fathers, brothers, sisters, and others, but only measures emotional and physical abuse. MIDUS 1 does not assess address sexual abuse, emotional neglect, or physical neglect, which provides an incomplete representation of childhood maltreatment and may underestimate the association between

childhood maltreatment and adult outcomes. Further, the MIDUS 1 childhood abuse variables have been shown to have weak internal consistency (Kong et al., 2019). The MIDUS 2 biomarker follow-up project assessed childhood maltreatment using the childhood trauma questionnaire (CTQ; Bernstein et al., 2003). The CTQ is a widely used and well-validated measure of childhood maltreatment (Bernstein et al., 2003). Noting the strengths of the CTQ coupled with the measurement issues of child maltreatment variables in MIDUS 1, the benefits of a more comprehensive assessment of childhood maltreatment outweigh the fact that the CTQ data as collected during the second wave (MIDUS 2 biomarker) of data collection.

Participants

Participants were included in the current study if they participated in MIDUS1, MIDUS 2, and the MIDUS 2 biomarker follow-up study and were in a committed romantic relationship and were not previously separated or divorced ($n = 785$). Participants were 50.3% female and were predominantly White (93.9%); 1.8% were African American, 1.4% were Native-American, and 2.8% reported other. Regarding education, 21.2% of participants reported having a high school education or GED as their highest form of completed education, 21% reported some college but did not earn a degree, 24.3% reported having a bachelor's degree, 4.5% reported some graduate school but did not earn a graduate degree, 13.8% reported a master's degree, and 4.7% reported a professional degree (e.g., M.D., J.D., Ph.D); a small proportion of participant's educational data was unavailable. Just over two-thirds of the participants reported working (68.8%) while others were retired (20.9%), unemployed (1.3%), laid off (0.3%), a homemaker (5.5%), or student (0.9%). Respondents reported an average household income of $87,525.02 (SD = $62,588.06).

Measures

Childhood Maltreatment

Childhood maltreatment was assessed using the childhood trauma questionnaire (CTQ; Bernstein et al., 1994). The CTQ is a 28-item scale that was used to measure childhood abuse and neglect prior to the age of 18. Items are scored on a five-point Likert scale, ranging from (1) 'Never' to (5) 'Very Frequently.' The CTQ has been found to have construct validity and criterion-related validity (Bernstein et al., 2003). The emotional neglect subscale and two items on the physical neglect were reverse coded. An example of an emotional abuse item was "People in my family said hurtful or insulting things to me;" an example of physical abuse item was "People in my family hit me so hard that it left me with bruises of marks;" an example of sexual abuse item was "Someone molested me;" an example emotional neglect (reverse coded) item was "I felt loved;" and an example physical neglect item was "My parents were too drunk or high to take care of me." Childhood maltreatment was operationalized for this study using the total score by summing the emotional, physical, and sexual abuse and physical and emotional neglect scales together. Higher scores reflect greater severity of maltreatment.

Support

Support from their partner was assessed with 6 items from the MIDUS study. Questions were rated on a four-point Likert-type scale ranging from (1) A lot to (4) Not at all. Items included "Does he or she really care about you," "Does he or she understand the way you feel about things," "Does he or she appreciate you," "Can you rely on him or her for help if you have a serious problem," "Can you open up to him or her if you need to talk about your worries," and "Can you relax and be yourself around him or her." Items were reverse coded and summed together such that higher scores reflected higher levels of support.

Strain

Perceptions of strain were measured with 6 items from the MIDUS study. The six items were scored on a four-point Likert-type scale ranging from (1) Often to (4) Never. Items included "Does he or she make too many demands of you," "Does he or she make you feel tense," "Does he or she argue with you," "Does he or she criticize you," "Does he or she let you down when you are counting on him or her," and "Does he or she get on your nerves." Items were summed together, and greater scores are indicative of lower levels of strain.

Disagreement

Disagreement was measured by self-reports of three questions from the MIDUS study. Participants were asked how much they disagree on "money matters, such as how much to spend, save or invest," "household tasks, such as what needs doing and who does it," "leisure time activities, such as what to do and with whom" and rated on a 4-point Likert-type scale ranging from (1) A lot to (4) Not at all. Items were summed together, and greater scores are indicative of lower levels of disagreement.

Depressive Symptoms

The Center for Epidemiologic Studies Depression (CES-D; Radloff, 1977) was used to measure depressive symptoms over the past week. The CES-D is a 20-item scale rated on a

four-point Likert-type scale ranging from (0) Rarely or none of the time to (3) Most or all of the time with three reverse coded items. Example items include "I felt depressed" and "I could not 'get going'." Items were summed together to obtain an overall index of depressive symptoms. Higher scores reflect higher levels of depressive symptoms. Because of their nature, depressive symptoms can be skewed or kurtotic and upon examination, it was found that skewness (1.932) and kurtosis (4.81) were somewhat high, but in large sample sizes (> 300) these values are within acceptance range (Kim, 2013).

Social Anxiety

Social anxiety symptoms were assessed using the Liebowitz Social Anxiety Scale (Fresco et al., 2001). The scale includes 9 items rated on a four-point Likert-type scale. Items consistent of 9 different scenarios may be anxiety provoking. The items were rated on a severity scale ranging from (1) None to (4) Severe. Example items include "Being the center of attention" and "Talking to people in authority." Scores of the 9 items were summed to provide a severity score. Regarding skewness and kurtosis, social anxiety symptoms did not pose a significant threat to non-normality with skewness (− 0.23) and kurtosis both falling within an acceptable range (0.53) according to guidelines provided by Kim (2013).

Control Variables

Age and time lapse (in months) between MIDUS 2 and the biomarker project were entered in as continuous variables. Maternal and paternal depression during respondent's childhood, parental divorce, and a diagnosis of anxiety, depression, or panic disorder at MIDUS 2 were entered as a dichotomous (yes/no) variables. Education was also dichotomized (no college/at least some college). Maternal and paternal depression, as well as parental divorce, were controlled for because they commonly covary with maltreatment and may attenuate effects of maltreatment and mental health and are crude indicators of genetic heritability of depression. A previous diagnosis of anxiety, panic disorder, or depression at the MIDUS 2 assessment was controlled for because a previous diagnosis is likely to be related to future symptomology. Control variables were harvested from the MIDUS 2 SAQ and telephone interview. All measures demonstrated adequate internal consistency ($\alpha > 0.80$).

Statistical Analysis

IBM SPSS 25 was used to generate means, standard deviations, and correlations. MPlus was used to test the indirect (mediated) effects using structural equation modeling (SEM). SEM compares the proposed theoretical model to the observed data and examines the extent to which the theoretical model fits the empirical data. Numerous indices are commonly used to evaluate the model-data fit, including Comparative Fit Index (CFI), Tucker–Lewis Index (TLI), chi-square statistic, and root mean square error of approximation (RMSEA). If the CFI and TLI values are greater than 0.90 then the model demonstrates adequate fit and values greater than 0.95 demonstrate good fit; RMSEA values below 0.06, and a non-significant chi-square test also demonstrate adequate fit (Hu & Bentler, 1999).

In the structural equation model, relationship quality was measured by three indicators: support, strain, and disagreement. Latent variables with three indicators are, by definition, saturated, or have zero degrees of freedom, meaning there is no chi-square statistic and the following fit statistics: CFI = 1, TLI = 1, RMSEA = 0. Therefore, to assess model-data fit, the overall model was examined, which included childhood maltreatment as the independent variable, relationship quality latent variable as the mediator, depressive and social anxiety symptoms as outcome variables, and the control variables (See Fig. 1). The indirect effects from childhood maltreatment to depressive and socially anxious symptomology through relationship quality were tested using 95% bias-corrected bootstrap confidence intervals (CI) based on 5,000 bootstrap samples.

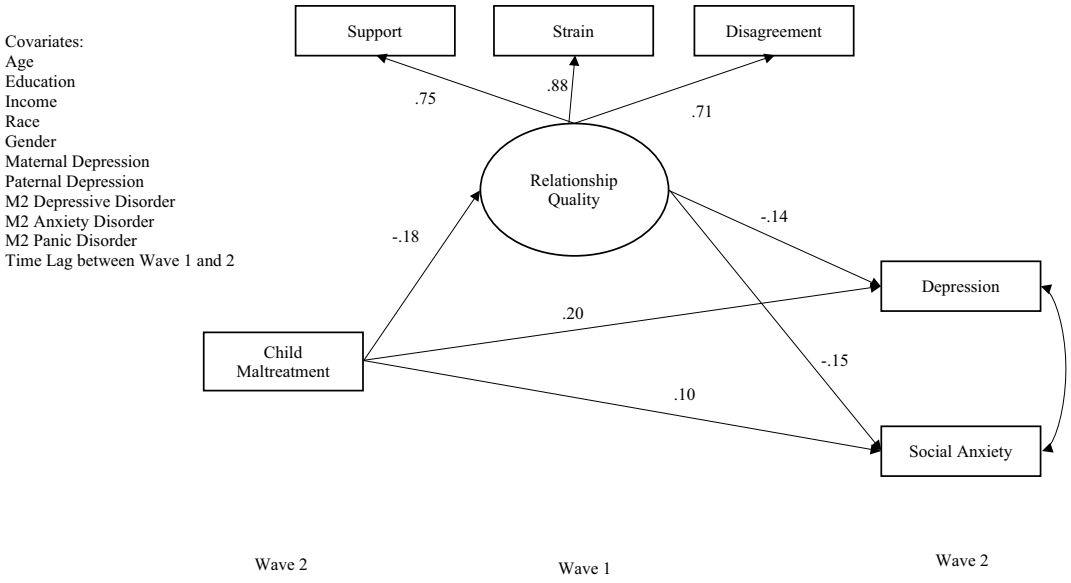
Results

Descriptive Results

Descriptive statistics, including correlations, means, standard deviations are presented in Table 1. Bivariate correlations indicate that all study variables were significantly associated with each other at $p < 0.001$.

Structural Equation Modeling

The final SEM model included childhood maltreatment, relationship quality, depression, and social anxiety as well as the control variables. The model-data fit of the SEM model was adequate: CFI = 0.98, TLI = 0.95, RMSEA = 0.04 (90% CI = 0.023, 0.052), χ^2 (24) = 50.52, $p = 0.001$. First, the factor loadings for the relationship quality latent variable were all significant including disagreement ($\beta = 0.71$, $p < 0.001$), support ($\beta = 0.75$, $p < 0.001$), and strain ($\beta = 0.88$, $p < 0.001$). Regarding the direct effects, childhood maltreatment was negatively associated with relationship quality ($\beta = -0.18$, $p < 0.001$) such that more severe maltreatment was associated with lower levels of relationship quality. Additionally, childhood maltreatment was positively associated with greater symptoms of depression ($\beta = 0.20$, $p < 0.001$) and



Note. All paths are significant. Standardized estimates are reported.

Fig. 1 Structural equation model examining relationship quality as mediator linking child maltreatment to depressive and social anxiety symptoms. All paths are significant. Standardized estimates are reported

social anxiety ($\beta = 0.10$, $p < 0.05$). Relationship quality was inversely associated with both depressive and social anxiety symptoms ($\beta = -0.14$, $p < 0.001$) and social anxiety symptoms ($\beta = -0.15$, $p < 0.01$), indicating partial mediation for both depression and social anxiety symptoms.

Next, the indirect effects were examined using bootstrapping procedures (see Table 2). A significant indirect effect from childhood maltreatment to depressive symptoms [$\beta = 0.029$, 95% CI (0.012, 0.054)] and social anxiety symptoms [$\beta = 0.028$, 95% CI (0.011, 0.052)] were found. Greater childhood maltreatment was associated with poorer quality relationships which, in turn, were associated with fewer depressive and social anxiety symptoms.

Post Hoc Analysis

Because gender differences have been found in relation to childhood maltreatment and adult mental health (Fitzgerald et al., 2020; Kessler et al., 2012; Sedlak et al., 2010), gender may be a moderating variable. Using a multiple group analysis, a male and female model were run with gender as grouping variable (moderator). Using a multiple group CFA model, relationship quality was first examined to determine if the latent construct was similar across males and females. To examine measurement invariance, guidelines provided by Little (2013) were used. Little suggested that a change in CFI < 0.1 suggests that model-data fit is not significantly different; this method has been suggested to be preferable to the chi-square difference test (Little, 2013). Support was found for configural (CFI = 1, TLI = 1, RMSEA = 0), metric invariance (ΔCFI = 0.009, CFI = 0.99, TLI = 0.97, RMSEA = 0.07), and scalar invariance (ΔCFI = 0.005, CFI = 0.98, TLI = 0.97, RMSEA = 0.07), suggesting the measure of relationship quality was invariant across gender. Following measurement invariance testing, the model-data fit of the final SEM model was adequate, CFI = 0.97, TLI = 0.94, RMSEA = 0.045, χ^2 (48) = 86.06, $p < 0.001$). Each of the paths were constrained to be equal in the male

Table 1 Correlations, means, and standard deviations among study variables

	1	2	3	4	5	M (SD)
1. Childhood maltreatment	–					37.07 (13.41)
2. Disagreement	– .15***	–				9.23 (2.09)
3. Support	– .21***	.52***	–			21.72 (8.18)
4. Strain	.20***	– .63***	.68***	–		12.96 (3.70)
5. Social anxiety	.17***	– .18***	– .13***	.16***		16.34 (4.73)
6. Depression	.33***	– .18***	– .19***	.22***	.35***	7.49 (7.47)

***$p < .001$

and female models and a chi-square difference test was used to determine if gender moderated the direct path. If the chi-square difference test is significant, then gender moderated the constrained pathway. The chi-square difference test for the path from childhood maltreatment to relationship quality (χ^2 (1) = 0.553, $p > 0.05$), anxiety (χ^2 (1) = 0.073, $p > 0.05$), and depression (χ^2 (1) = 3.27, $p > 0.05$) were not significant. Likewise, the chi-square difference test for social anxiety (χ^2 (1) = 0.055, $p > 0.05$) and depression (χ^2 (1) = 0.068, $p > 0.05$) were both non-significant. Lastly, the indirect effects were compared across gender. The indirect effect from maltreatment to both socially anxious and depressive symptoms were not significantly different for men and women ($p > 0.05$), indicating no gender differences.

Discussion

Research has identified that childhood maltreatment is a risk factor for poor quality romantic relationships (DiLillo et al., 2009), which may help explain the robust associations between maltreatment and symptoms of depression and social anxiety. To the current point, however, there has been minimal investigation into the role of adult romantic relationships. To address this significant gap in the literature, relationship quality was tested as a mediator linking childhood maltreatment to symptoms of depressive and social anxiety using a large sample of adults and a longitudinal design. Results of the SEM analysis indicated that relationship quality was a possible mechanism linking childhood maltreatment to both symptoms of depression and social anxiety. Further, no differences between men and women on either the direct or indirect pathways.

Prior research has suggested that interpersonal relationships are mechanisms linking childhood maltreatment to adult mental health (Kong et al., 2019; Runtz & Schallow, 1997; Sperry & Widom, 2013) and the current study advances understanding by identifying adult romantic relationships specifically. Regarding the direct effects, and in support of the first hypothesis, childhood maltreatment was found to be associated with greater depressive and socially anxious symptoms (Cougle et al., 2010; Nelson et al., 2017) as well as poorer quality relationships (Colman & Widom, 2004). Although numerous studies have found that childhood maltreatment is associated with relationship quality most studies have examined global reports of relationship quality, or adult's overall evaluations of the relationship (DiLillo et al., 2009). Global measures of relationship quality have many benefits as they tend to be short, and well-validated measures (Funk & Rogge, 2007); however, one of the disadvantages of using overall assessments of relationship quality is that they are unable to provide information about what is contributing to the poor quality (DiLillo et al., 2009). The current study suggests that support, strain, and disagreement are possible areas that may be influenced by childhood maltreatment. Further, these results also support the second hypothesis. Specifically, relationship quality was associated with fewer symptoms of social anxiety and depression (Beach et al., 1990; Priest, 2013; Whisman, 2007). High-quality romantic relationships offer numerous psychosocial resources such as increased self-esteem, companionship, and a sense of importance that decrease mental health problems such as depression and social anxiety (Thoits, 2011).

Supporting the direct associations from childhood maltreatment to relationship quality and relationship quality to depressive and social anxiety symptoms, the bootstrapped indirect effects provide additional support that relationship quality as a possible mechanism. Adult's romantic relationships can be a source of healing for adults who were maltreated in childhood and decrease symptoms of depression and social anxiety. Childhood maltreatment creates negative views of relationships and can decrease interpersonal skills and such problems can detract from the quality of the relationship (Banford-Witting & Busby, 2019; Bigras et al., 2015; Colman & Widom, 2004; Knapp et al., 2017; Whisman, 2014). On the other hand, romantic relationships can be a tremendous source of healing. Formation of high-quality romantic relationships can diminish the underlying feelings of devaluation, powerless, worthlessness, guilt, shame, isolation, and rejection inherent in maltreatment (Finkelhor & Browen, 1985; Johnson, 2002). Relationships characterized by companionship, support, and effective conflict resolution can offer behavioral guidance to reduce maladaptive coping strategies (e.g., substance use), enhance self-esteem, and promote a sense of importance (Flett et al., 2016; Thoits, 2011). Talking with partners about the impact childhood maltreatment has on them can foster an environment of positive emotional expression, non-judgment, and elicit support (Goff et al., 2006; MacIntosh & Johnson, 2008). Feeling connected to and being able to rely on their partner can alleviate depressive and social anxiety symptoms that are often extensions of underlying beliefs (Finkelhor & Brown, 1985; Fitzgerald & Gallus, 2020; Flett et al., 2016; Thoits, 2011).

Table 2 Bootstrapped indirect effects linking childhood maltreatment to symptoms of depression and social anxiety through relationship quality

Pathway	Estimate	95% CI
Childhood maltreatment→RQ→depression	.03	[.012, .054]
Childhood maltreatment→RQ→social anxiety	.03	[.011, .052]

Confidence intervals that include 0 are non-significant. *RQ* = relationship quality

It should be noted that the current study only found partial mediation, which indicates that relationship quality only partially explains the association between maltreatment and adult symptoms of depression and social anxiety. Both including individual (e.g., emotion regulation) and relational (e.g., familial support) mechanisms have been proposed, thus the lack of inquiry into individual mechanisms may help account for the partial mediation. Previous studies have suggested that individual-based mediations include emotional regulation (Coates & Messman-Moore, 2014), self-criticism (Shahar et al., 2015), and mindfulness (Bolduc et al., 2018). Additionally, other interpersonal relationships including relationships with family and friends have been suggested to link childhood maltreatment to adult mental health (Fitzgerald & Gallus, 2020; Kong, 2017; Kong et al., 2019; Runtz & Schallow, 1997). It is recommended that future research begins to test multiple mediators simultaneously, so it can be determined which pathways best accounts for the relationship between childhood maltreatment and adult mental health.

Limitations

Results of the current study demonstrate that relationship quality may be a mechanism linking childhood maltreatment to symptoms of depressive and social anxiety. These results should be interpreted in consideration of the study's limitations. First, the measure of childhood maltreatment is retrospective in nature, thus reports may be subject to recall bias and social desirability. Using multiple forms of assessment including substantiated reports of maltreatment or corroborating reports can hinder these biases. Secondly, measurement of childhood maltreatment severity provides a dose–response relationship between maltreatment and adult outcomes; however, it cannot be discerned which types of maltreatment (e.g., emotional abuse vs. sexual abuse) influenced relationship quality and mental health. Thirdly, although a prior diagnosis of depression, anxiety, and panic were controlled for, many adults may have subclinical symptoms and future research should address stability effects via examination of cross-lagged effects. The use of cross-lagged assessments can provide more definitive results of the longitudinal association between maltreatment and mental health symptoms. Fourthly, the sample was approximately 90% White, so generalization to racial and ethnic minorities is limited; future investigation into racial minorities is needed. Fifth, the current study did not assess for possible genetic factors related to adult mental health, which has been established among adults with a history of maltreatment (Gutierrez et al., 2015). Last, the current study focused on adults who were not previously separated or divorced.

Conclusion

The current study suggests that relationship quality may one possible pathway linking childhood maltreatment to adult mental health. Results of the study indicate that promoting the quality of adult romantic relationships, including the ability to have more positive and fewer negative interactions, may have a significant impact on adult health. The use of trauma-informed couple therapy may be particularly helpful in reducing depressive and socially anxious symptoms among adult who experienced maltreatment in childhood.

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Data Availability Data for the current study are from the MIDUS data set, which is a free and publicly available data from Inter-University Consortium for Political and Social Research: https://www.icpsr.umich.edu/web/ICPSR/series/203

Code Availability MPlus code is available upon request.

Declarations

Conflict of interest The author declares no conflict of interest in the publication of this manuscript.

Ethics Approval The data are free, de-identified, and publicly available, therefore ethical approval was not needed. During the original data collection, participants in the MIDUS study provided informed consent.

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