

The Longitudinal Association Between Childhood Abuse and Positive and Negative Family Interactions in Midlife and Older Adults: The Role of Mindfulness Meditation and Gender

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Abstract

Objectives: Childhood abuse has been linked to problematic familial relationships in adulthood; however, it remains unclear what factors buffer the association. Mindfulness research has demonstrated promise in improving relationships among adults abused during childhood, but research has focused on couples, with fewer studies examining familial relationships.

Methods: Using a data sample of 2430 adults from the Midlife Development in the United States, the current study examined mindfulness as a moderator of childhood abuse and familial support and strain in adults.

Results: Analysis of hierarchical regression revealed that mindfulness was a moderator of childhood abuse and family strain over a 10-year period in women, but not men. However, mindfulness did not moderate childhood abuse and support.

Discussion: This examination of mindfulness in the context of familial relationships may help women more successfully manage negative familial interactions. Results indicate mindfulness-based interventions may be helpful in improving familial relationships among adults abused by family members in childhood.

Keywords

childhood abuse, mindfulness, familial support, familial strain, moderation

Introduction

Childhood abuse has shown to have a profound impact on adult relationships. In the United States, more than one in three adults were emotionally abused in childhood and roughly one in five were physically abused (Stoltenborgh et al., 2014), making these occurrences common place. The cascading effects of childhood abuse on midlife and older adult relationships includes problems with family members, friends, and romantic partners (Author Citation). For example, adults physically abused in childhood tend to report more negative and fewer positive interactions with others (Whisman, 2014) and these effects are pronounced with family members (Kong et al., 2019). Family members were often a source of the abuse, were knowledgeable that abuse was occurring but did not intercede or were exposed or knowledgeable of the abuse but were powerless to stop the abuse from occurring. These early familial dynamics may set foundation for how family members interact with family members across the life course, this includes less frequent interactions, more negative interactions, and fewer positive interactions (Author Citation; Kong & Moorman, 2016; Kong et al., 2019).

Mindfulness research has burgeoned over the past several decades and has widely documented psychological benefits (Tomlinson et al., 2017). Recently, research has begun to investigate the relational benefits to mindfulness. Practicing mindfulness has been shown to strengthen the couple relationship including mindfulness-based couple interventions (Carson et al., 2004) as well as an individual-based mindfulness practice (Author Citation). Research has noted that mindfulness can improve adult relationships through increased empathy, decreased mental health problems, and greater attention in the present moment (Kozlowski, 2013).

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Nearly all of the research on the relationship enhancing effects of mindfulness have focused on the couple relationship with less inquiry into potential benefits for familial relationships. Familial relationships have significant implications for adult psychological (Kong et al., 2019) and physical health (Woods et al., 2020); therefore, examining mindfulness as factor influencing negative interactions and increase positive interactions over time has significant implications for adult health. The current study longitudinally examined the frequency of a mindfulness practice as a moderator linking childhood abuse and family support and strain. Three waves of data from the study of Midlife Development in the United States (MIDUS) were used to examine the possible buffering effects of mindfulness over a 9-year period.

Theoretical and Empirical Background

Proposed by (Antonucci et al., 2014; Antonucci & Akiyama, 1987), the convoy model provides a conceptual framework to understand how abuse in childhood may influence familial interactions across the life course. The convoy model suggests individuals move through the life course with a social convoy, or people with whom individuals are close with and rely on. Convoys can include numerous people with varying degrees of closeness or conflict. The most common members of a convoy include parents, siblings, romantic partners, and close friends. Additionally, relationships within convoys vary across the quality of relationship (e.g., closeness), function (e.g., support), personal variables (e.g., gender), and structure (e.g., frequency of contact) (Antonucci et al., 2014). One of the fundamental assumptions of the convoy model is that development is a lifelong process, the quality of contemporary relationships is informed by the historical quality of relationships (Antonucci et al., 2014). This is particularly important in the parent-child relationship because parents or caregivers are the primary socializing relationship (Bowlby, 1969; 1982). If family members are supportive, loving, and caring towards each other it creates a strong foundation for having high quality relationships across the life course. On the other hand, if family members are hostile, aggressive, rejecting, or abusive then relationships may be more conflictual or disconnected (Kong et al., 2019). Early dysfunctional contexts are likely to shape family functioning within adulthood. In other words, those who were abused are likely to have more problematic relationships with those same family members in adulthood.

Families experiencing childhood abuse tend to have lower quality relationships and tend to have poorer functioning. Research has shown that maltreating families are characterized by marital dysfunction, poorer family cohesion, greater family conflict (Stith et al., 2009). More specifically, disruptions in early attachment created by maltreatment and an inadequate caregiving environment can have significant implications for attachment and interpersonal relationships

across the life course (Doyle & Cicchetti, 2017). Childhood maltreatment is theorized to create negative internal working models, or internalized representations of the individual, relationships, and the world more generally, are crucial to understanding support (Simpson et al., 2002). Internal working models are internalized representations of the individual, relationships, and the world more generally that are created from early experiences with caregiver(s), and they govern cognitive, emotional, and behavioral dimensions in adult relationships. More negative internal working models are then likely to shape both supportive and strained interactions with family members. For example, childhood emotional and physical abuse have been shown to adversely impact the relationship between the parent who was the perpetrator of the abuse in childhood and their adult children (Kong & Moorman, 2016) as well as support and strain (Kong et al., 2019). Adults who reported greater overall experiences of abuse and neglect in childhood were less likely to provide support to their family members in midlife adulthood (Author Citation), which may contribute to more negative sequences of interaction that increase strain and preclude support. Intergenerational patterns of disconnect, and harm can be created and upheld by unsupportive social convoys. Despite continually strained relationships in both childhood and adulthood, women commonly play a central role in family life (Grigoryeva, 2017), which can be shaped by childhood abuse (Wuest et al., 2010). This role may be exacerbated in abusive families as women are commonly thrust into a role of caretaking from an early age and that role often extends into adulthood and there are significant psychological and practical burdens attached to caretaking for their abusive parent (Wuest et al., 2010). These results suggest that early aversive experiences occurring within social convoys may have a lifelong impact on familial relationships. Examining the convoy theory in conjunction with the use of mindfulness practices we hope to identify any differences in how survivors of childhood abuse engage with their family across time.

Mindfulness

Mindfulness is defined by focused, non-judgmental attention to what is occurring in the present moment (Baer et al., 2006). Research has consistently noted that a mindfulness practice has numerous mental health benefits for adults (Creswell, 2017) including those who were maltreated in childhood (Joss et al., 2019; Kimbrough et al., 2010). Mindfulness may enhance adult psychological wellbeing through increasing dispositional mindfulness, decreasing negative thinking patterns, increasing self-compassion, and greater cognitive and emotional regulation (see Gu et al., 2015 for review). Both conceptual (Kozlowski, 2013) and empirical studies (Author Citation; Carson et al., 2004; Gobout et al., 2020; Kimmes et al., 2017; 2018) have suggested that mindfulness can also enhance adult relationships. Mindfulness can foster insight into one's experience of pain and suffering and this

understanding is thought to increase compassion towards not only oneself but also others (Creswell, 2017). Additionally, the psychological benefits of mindfulness may spillover to positively influence relationships. Increases in positive affect (e.g., joy) and reductions in mental health problems (e.g., depressive symptoms) may improve relationship interactions. These findings, however, focus largely on the couple relationship with less focus on familial relationships, which is defined as close family members other than the marital partner (e.g., parents, siblings) (Walen & Lachman, 2000).

Gender Differences

Within the convoy model of social relationships gender is considered an important characteristic in family relationships (Antonucci et al., 2014). For example, adulthood women tend to play a more central role and are often gatekeeper of familial relationships (Martin, 2000; Thomas et al., 2021). Women may have more positive interactions with their family members but supporting others may also leave women vulnerable to more negative interactions (Antonucci et al., 2014; Walen & Lachman, 2000). Women's central role in family life is also common among those who were abused in childhood. Wuest et al., (2010) interviewed women abused in childhood as they provided care for their parental abuser, and found these women generally remained in caretaking roles from a young age, primarily to obtain validation and reconciliation.

Additionally, research has indicated notable gender differences in mindfulness and other spiritual practices. Using a national sample of data, women were significantly more likely to use mindfulness meditation compared to men (Upchurch & Johnson, 2019). Furthermore, it was found that there were not significant differences across gender regarding the benefits of mindfulness for improving relationships with others, however, the role of childhood abuse was not considered. Evidently, among adults in the general population there are no differences between men and women regarding relationship-based benefits of mindfulness; however, for those who were abused in childhood differences may become apparent. A recent study using the MIDUS data found women reported more frequent spiritual practices, defined as prayer or meditation, compared to men (Author Citation). Additionally, spirituality was found to moderate the relationship between childhood abuse and neglect, and loneliness for women, but not men. These findings suggest relationships may be enhanced by a more frequent mindfulness practice among women (Author Citation). Rojiani et al. (2017) postulated that there are physiological differences in emotion regulation between men and women where regions of the brain associated with cognitive control (e.g., superior parietal regions) are activated in men while areas associated with emotion (e.g., amygdala) are activated in women. The differences in physiological reactions to mindfulness may yield more effective results in women and improve interpersonal relationships (Kozlowski, 2013).

Present Study

Extant research indicates that the effects of childhood abuse can be seen in midlife and older adults. Factors that protect against negative aspects and enhance the positive aspects of contemporary family life remain less known and mindfulness may be once such practice. This is a notable gap in the research as there are relatively few practices known to influence the adult child- family relationships. The current study tested the frequency of a mindfulness practice at two time points as a moderator of the association between childhood abuse and changes in family support and strain over a 10-year period. First, mindfulness was assessed was at the first wave of data collection used in the current study, which measured changes in familial support and strain over a 9-year period. Mindfulness was also assessed at the second wave of data collection along with family support and strain (outcome variable), which assessed the frequency of a mindfulness practice within the past year and its association with family support and strain. Examining mindfulness at both the first and second wave of data allows us to determine whether the potential beneficial effects of mindfulness have short term (e.g., does a mindfulness practice within the past year shape family relationships) and/or long term (e.g., does a mindfulness practice have a longstanding contribution to familial relationships 9 years later) effects. It was hypothesized based on women's central role in the family and the increased benefit from mindfulness they experience in relation to men, that mindfulness will moderate the relationship between childhood abuse and family support and strain over the 1-year interval and the 9-year interval for women but not men. To understand the unique effects of mindfulness as a moderator, numerous factors were controlled for including physical health (Woods et al., 2020), mental health problems (Author Citation), dispositional mindfulness (Author Citation), prior levels of support strain as to establish change over time, and sociodemographic variables including age and income (Walen & Lachman, 2000).

Research Design

Data from the current study are from the study of Midlife Development in the United States (MIDUS). The MIDUS study is a longitudinal study of health and wellbeing using a sample of midlife adults in the United States funded by the John D. and Catherine T. MacArthur Foundation. The MIDUS study started in 1995–1996 collected data from 7108 adults in the United States (MIDUS 1) and included a telephone interview and self-administered questionnaire (SAQ). Approximately 10 years later (2004–2006), a second wave of data collection (MIDUS 2) used the same methods as MIDUS 1 and retained 4963 of the participants. More recently in 2013–2014, a third wave of data collection was completed (MIDUS 3). Like its predecessors, the MIDUS data were collected using a telephone interview and SAQ and included 3294 of the original participants. Data on MIDUS

participation over time can be found in papers by Radler and colleagues (Radler & Ryff, 2010; Song et al., 2021). The current study used data from all three waves of MIDUS data collection. To be included in the study, participants must have completed the childhood abuse measure at MIDUS 1 and have completed both the telephone interview and SAQ at both MIDUS 2 and MIDUS 3. The final sample included 2430 adults and participant demographics can be seen in Table 1. The MIDUS data are de-identified, publicly available data, and are free to use. Thus, institutional review board approval is not needed to use these data.

Measures

Childhood Abuse. In the MIDUS data, there are measures for emotional abuse, physical abuse, and severe physical abuse using items based off the Conflict Tactics Scale (Straus, 1979). The current study used items related to maternally and paternally perpetrated emotional and physical abuse. Six total items were used, emotional abuse, physical abuse, and severe physical abuse perpetrated by mothers and fathers. Each of the abuse items began with the stem, “when you were growing up, how often were any of the things mentioned above done to you by...” Example acts of emotional abuse were “insult or swore at you” and items capturing physical abuse and severe physical abuse were “slapped you” and “kicked, bit or hit you with a fist.” Items were assessed on a frequency scale ranging from *Often* (1) to *Never* (4). The items were reverse coded and summed together for an overall indicator of total parental abuse. Greater scores reflect greater levels of parental abuse. Scores could range from 6–24. Cronbach’s alpha = .82.

Mindfulness. Mindfulness was assessed with a single item, “In the past 12 months, either to treat a physical health problem, to treat an emotional or personal problem, to maintain or enhance your wellness, or to prevent the onset of illness, how often did you use relaxation or meditation techniques?” The question was rated on a 5-point Likert scale ranging from *A lot* (1) to *Never* (5). The item was reverse coded such that higher scores are reflective of more frequent mindfulness. The mindfulness measure at MIDUS 1 was dichotomous (yes/no) rather than rated on a frequency scale, thus eliminating variability in the frequency of mindfulness. Thus, it was determined that using the mindfulness measure of MIDUS 2 and MIDUS 3 were superior in establishing a longitudinal relationship.

Family Strain. Familial strain was measured using four items in the MIDUS study. The items were rated on a four-point Likert scale ranging from *Often* (1) to *Never* (4). The four items were: “Not including your spouse or partner, how often do members of your family make too many demands on you,” “How often do they criticize you,” “How often do they let you down when you are counting on them,” and “How often do they get on your nerves?” Items were reverse coded and mean score was taken of the four items. Higher scores reflect greater strain.

Table 1. Descriptive Statistics for the Sample, Covariates, and Primary Variables.

	M (SD)/N (%)
Covariates	
Gender	
Men	1076 (44.3%)
Women	1354 (55.7%)
Age	55.12 (11.22)
Physical health	2.30 (0.93)
Dispositional mindfulness	33.99 (6.23)
Income	86,138,90 (72,500.00)
Depressive symptoms	0.56 (1.65)
Anxiety symptoms	0.10 (0.76)
Panic symptoms	0.28 (0.95)
Family strain (MIDUS 2)	2.04 (0.58)
Family support (MIDUS 2)	3.53 (0.57)
Study variables from overall sample	
Childhood abuse (MIDUS 1)	9.54 (3.50)
Mindfulness frequency (MIDUS 2)	1.52 (1.01)
Mindfulness frequency (MIDUS 3)	1.54 (1.05)
Family strain (MIDUS 3)	1.95 (0.62)
Family support (MIDUS 3)	3.51 (0.58)

Note. All covariates were measured at MIDUS 2

Family strain was measured at both MIDUS 2 and MIDUS 3. Cronbach Alpha at MIDUS 2 = .78; MIDUS 3 = .80.

Family Support. The MIDUS study provides four items assessing family support. Each of the four items was rated on a 4-point Likert scale with scores ranging from *A lot* (1) to *Not at all* (4). The items included “Not including your spouse or partner, how much do members of your family really care about you,” “How much do they understand the way you feel about things,” “How much can you rely on them for help if you have a serious problem,” and “How much can you open up to them if you need to talk about your worries?” The items were reversed coded and averaged. Higher scores are indicative of greater familial support. Family support was measured at both MIDUS 2 and MIDUS 3. Cronbach Alpha at MIDUS 2 and 3 = .83.

Covariates (All Measured at MIDUS 2)

Mental Health. The MIDUS study measured symptoms of depression, generalized anxiety, and panic using items based on the World Health Organization Composite International Diagnostic Interview Short-Form (CIDI-SF; Kessler et al., 1998), which is congruent with diagnostic criteria in the third edition Diagnostic and Statistical Manual of Mental Disorders (DSM-III-R). Depression was measured with seven dichotomous items and participants endorsed whether or not they had experienced each of the seven symptoms. The number of symptoms endorsed were summed together for an index of depression with higher scores reflecting a greater number of depressive symptoms. The generalized anxiety

measure included ten dichotomous items where participants could either endorse or not endorse the symptom (yes/no). The number of affirmative responses were summed together for an overall index of generalized anxiety symptoms. Finally, symptoms of panic were assessed using six items. Items were summed together, and higher scores reflect a greater number of panic symptoms.

Age. Age was entered as a continuous variable.

Physical Health. The health status of participants was assessed with a one-item assessment, measuring subjective physical health status. The item asked, "In general, would you say your physical health is *Excellent* (1), *Very good* (2), *Good* (3), *Fair* (4), or *Poor* (5)?"

Income. Household income was entered as a continuous variable.

Dispositional Mindfulness. To control for adult's tendency to be mindful, nine items based on Langer and Moldoveanu (2000) conceptualization of mindfulness was used. Items were rated on a Likert scale ranging from *Strongly Agree* (1) to *Strongly Disagree* (5). Items were reverse coded and summed together such that greater scores indicate higher levels of dispositional mindfulness.

Living with Alcoholic During Childhood. Living with an alcoholic in childhood was assessed with one item: "When you were growing up, that is during your first 16 years, did you live with anyone who was a problem drinker or alcoholic?" The item was coded as 1 = yes and 2 = no.

Parental Divorce. Parental divorce during childhood was assessed with one item asking if their parents got divorce in childhood. The variable was coded as 1 = parental divorce, 2 = parents did not divorce.

Marital Status. Adults' current marital status was assessed with one item: "Are you married, separated, divorced, widowed, or never married." Participants who were married received a 1 and all other response categories received a 0.

Education. Participant's educational achievement was measured using one item: "What is the highest grade of school or year of college you completed?" and scores ranged from 1 (no school/some grade school) to 12 (doctorate or other professional degree).

Statistical Analysis

Descriptive statistics included correlations, means, and standard deviations, with tests of gender differences examined prior to running moderation analysis. Following descriptive statistics, t-tests examined gender differences across the childhood abuse, mindfulness, family support, and family

strain. Next, hierarchical regression was used to examine the moderating effect of mindfulness on men and women's history of childhood abuse and family support and strain. Separate hierarchical regressions were run for men and women. To examine moderation, the current study used a three-step hierarchical regression using a stepwise procedure outlined by (Cohen, 2013). The first step included the covariates (all measured at MIDUS 2) including family support and strain, spiritual mindfulness, age, physical health, and symptoms of depression, anxiety, and panic. In the second step, the independent (childhood abuse) and moderating (mindfulness) variables were entered. The independent and moderating variables were mean centered (e.g., means were 0), which reduces the likelihood of multicollinearity (Cohen, 2013). Finally, the childhood abuse by mindfulness interaction term, which is a single term that was created by multiplying the centered variables together, was then entered into step 3. Separate equations were run for mindfulness at MIDUS 2 and MIDUS 3. Additionally, only unstandardized coefficients are presented (Cohen, 2013). IBM SPSS 27.0 was used for all analysis. Missing data in the current study for mindfulness, familial support, and familial strain was minimal (no more than 1.2%) and were considered missing at random.

Results

Descriptive Results

Correlations can be seen in Table 2. Briefly, childhood abuse was associated with greater strain and less support in both men and women, and the correlations indicating a stronger association in women. Adults who experienced greater abuse in childhood reported using mindfulness more frequently. Mindfulness was sparsely associated with familial support and strain for both men and women. Results of the t-tests depicting gender differences across study variables are displayed in Table 3.

Effects of Mindfulness on Familial Support and Strain Nine Years Later

Hierarchical Regression for Females. Results of hierarchical regression is displayed in Table 4. Regarding family strain for women, in the first step of the regression equation several covariates were found to be significant: Age ($b = -0.01, p = .001$), panic symptoms ($b = 0.06, p = .004$), education ($b = 0.02, p = .003$), marital status ($b = -0.13, p = .001$) and prior levels of family strain were significant ($b = 0.50, p < .001$) such that younger adults, those two reported less educational achievement, single adults, those with greater symptoms of panic disorder, and those with higher previous levels of family strain reported higher levels of family strain approximately 10 years later. In step 2, childhood abuse ($b = 0.02, p < .001$), but not mindfulness ($b = -0.01, p = .66$), was associated with family strain. Women who experienced greater abuse in childhood reported significantly higher levels of family strain

Table 2. Correlations Among Study Variables and Covariates.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
1. Childhood abuse	—	0.10**	0.10**	-0.23***	0.24***	-0.21***	0.23***	-0.03	-0.11*	-0.03	-0.10*	0.18***	0.10***	0.07*
2. Mindfulness (MIDUS 2)	0.10**	—	0.53***	-0.03	0.07*	-0.03	0.06*	0.23***	0.01	0.02	-0.01	0.10***	0.04	0.10***
3. Mindfulness (MIDUS 3)	0.05	0.42***	—	-0.01	0.04	-0.02	0.03	0.21***	-0.03	0.04	-0.05	0.05	-0.03	0.04
4. Support from family (MIDUS 2)	-0.17***	-0.02	0.03	—	-0.43***	0.510***	-0.28***	0.15***	0.16***	0.06*	0.12**	-0.24***	-0.12***	-0.09**
5. Strain from family (MIDUS 2)	0.18***	0.05	0.06	-0.29***	—	-0.31***	0.53***	-0.02	-0.14***	0.00	-0.25***	0.18***	0.11***	0.17***
6. Support from family (MIDUS 3)	-0.14***	-0.04	-0.03	0.55***	-0.25***	—	-0.44***	0.12**	0.18***	0.08*	0.11**	-0.24***	0.11***	-0.12***
7. Strain from family (MIDUS 3)	0.17***	0.06*	0.08**	-0.19***	0.48***	-0.35***	—	-0.04	-0.09*	0.04	-0.26***	-0.13***	0.10***	0.16***
8. Dispositional mindfulness	-0.03	0.22***	-0.05	0.10***	0.07*	0.07*	0.02	—	0.04	0.10*	-0.12***	0.05	0.05	0.01
9. Physical health	0.12***	0.02	-0.05	0.08**	0.06	0.16***	0.06*	0.00	—	-0.17***	0.08**	0.23***	0.15***	0.19***
10. Income	-0.01	0.07*	0.01	0.05	0.01	0.04	0.01	0.10**	-0.18***	—	-0.27***	-0.05	-0.02	0.01
11. Age	-0.08*	-0.07*	-0.10**	0.14**	-0.18***	0.14***	-0.18***	-0.05	0.08**	-0.22***	—	-0.13***	-0.07*	-0.11***
12. Depressive symptoms	0.00	0.02	0.05	-0.06	0.03	-0.07*	0.06*	0.07*	0.14***	-0.04	0.08*	—	0.31***	0.20***
13. Anxiety symptoms	0.01	0.00	0.01	-0.03	0.00	-0.03	-0.01	0.07*	0.08**	-0.03	-0.02	0.165***	—	0.13***
14. Panic symptoms	0.04	0.07*	0.03	-0.15***	0.06	-0.10**	0.10**	0.00	0.06*	-0.03	-0.04	0.24***	0.00	—

MIDUS = Midlife Development in the United States.

Note. men are below the diagonal and women are presented above the diagonal. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 3. Gender Differences Across Study Variables.

Gender Differences	Male		Female		t
	M	SD	M	SD	
Childhood abuse	9.77	3.41	9.36	3.55	2.84**
Mindfulness practice (M2)	1.33	0.82	1.67	1.13	-8.27***
Mindfulness practice (M3)	1.38	0.89	1.67	1.14	6.47***
Familial support (M3)	3.44	0.61	3.56	0.55	-5.55***
Levels of strain (M3)	1.89	0.61	1.99	0.63	-3.81***

M2 = MIDUS 2, M3 = MIDUS 3. ** $p < .01$. *** $p < .001$.

in adulthood, controlling for prior levels of strain. In step three, the childhood abuse by mindfulness interaction term was significant, ($b = 0.01, p = .001$) suggesting that a more frequent mindfulness practice buffered the effects of childhood abuse on familial strain from MIDUS 2 to MIDUS 3 (See Figure 1 and Figure 2).

Next, mindfulness was examined as a moderator of childhood abuse and family support in women. In step 1, numerous covariates were significantly associated with familial support. Women's physical health ($b = -0.06, p = .003$) and depressive symptoms ($b = -0.03, p < .001$), and prior support ($b = -0.07, p = .05$) and strain ($b = 0.06, p < .001$) from family were significant. Women who reported worse physical health, had fewer depressive symptoms and reported higher levels of previous family support and less family strain, reported greater family support 10 years later. In step 2, neither childhood abuse ($b = -0.01, p = .22$) or mindfulness was significant ($b = -0.01, p = .86$). Finally, in step 3 the abuse by mindfulness interaction was not significant ($b = 0.001, p = .85$), indicating that mindfulness did not buffer the effects of childhood abuse on familial support over a 10-year period.

Hierarchical Regression for Males. Among men, the potential moderating role of mindfulness linking childhood abuse to family strain was also investigated. In step 1, prior levels of family strain ($b = 0.49, p < .001$) and depression ($b = -0.01, p = .007$) were significant. Men who reported greater levels of family strain 10 years earlier (MIDUS 2) and higher levels of depressive symptoms reported higher levels of family strain at MIDUS 3. In step 2, higher childhood abuse scores were not associated with greater familial strain ($b = 0.01, p = .63$), whereas mindfulness was significant ($b = 0.08, p = .02$), indicating the men who practiced mindfulness more frequently reported greater family strain 10 years later. Finally, in step 3 the child abuse by mindfulness interaction term was also non-significant ($b = -0.06, p = .35$).

Last, regarding familial support among midlife men, three covariates in the first step of the regression were significant. Specifically, physical health ($b = 0.01, p = .005$), prior levels of family strain ($b = -0.08, p = .02$), and previous levels of family support ($b = 0.54, p < .001$) were significant. Men who reported

better physical health, and who had a more supportive and less strained family reported greater family support approximately 10 years later. In the second step, neither childhood abuse ($b = 0.01, p = .96$) nor mindfulness ($b = -0.03, p = .19$) were significant predictors of family strain. Last, in the third step, the childhood abuse by mindfulness interaction term was non-significant ($b = -0.00, p = .83$), indicating that mindfulness did not moderate the relationship between childhood abuse and familial support over a 10-year period.

Mindfulness Practice on Familial Support and Strain Over 1 year

Hierarchical Regression for Males. Next, we examined adult's mindfulness practice over the past year, measured at MIDUS 3, was associated with familial relationships at MIDUS 3. First, males were examined. In the first step of the regression equation for marital support, only select covariates were associated with male reports of family strain at MIDUS 3 (see Table 5). Adult physical health was associated with reports of family support ($b = -0.006, p = .003$) such that adults who reported better health (e.g., lower scores) also reported more emotional support. Likewise, both prior levels of family support ($b = 0.53, p < .001$) and strain ($b = -0.09, p = .021$) were linked to future reports of family support and strain. None of the other covariates including dispositional mindfulness, income, age, depression, anxiety, panic, education, parental divorce, marital status, and living with an alcoholic in childhood were significant. Overall, the first step of the regression accounted for 34.7% of the variance in familial support. In the second step, neither mindfulness ($b = -0.15, p = .53$) nor childhood abuse ($b = -0.00, p = .90$) were associated with family support and strain and the second step did not account for any additional variance (0%). Finally, in the third step the childhood abuse by mindfulness interaction term was not significant indicating that the longitudinal effects of childhood abuse on familial support did not vary according to the frequency of a mindfulness practice. Like step 2, the third step did not account for a significant amount of variance in familial support (0%); overall, the model accounted for 34.7% of the variance in familial support.

Regarding marital strain among males, in the first step age and previous levels of strain were the only significant covariates predicting familial strain at MIDUS 3. Older adults reported lower levels of strain ($b = -0.01, p = .003$) while those who reported higher levels of previous strain at MIDUS 2 reported similarly high levels at MIDUS 3 ($b = 0.50, p < .001$). The other covariates including dispositional mindfulness, income, physical health, depression, anxiety, panic, education, parental divorce, marital status, living with an alcoholic in childhood and familial support were not significant. Step 1 accounted for 29% of the variance. In step 2, childhood abuse was not associated with familial strain

Table 4. Results of Hierarchical Moderation Analysis Examining Mindfulness (MIDUS 2) as a Moderator of Childhood Abuse and Familial Support and Strain Among Men and Women at MIDUS 3.

	Females				Males			
	Family support		Family strain		Family support		Family strain	
	b (SE)	Sig	b (SE)	Sig	b (SE)	Sig	b (SE)	Sig
Step 1	R ² = 0.325, p < .001		R ² = 0.367, p < .001		R ² = 0.347, p < .001		R ² = 0.266, p < .001	
Constant	2.282 (0.228)	p < .001	1.436 (0.254)	p < .001	1.547 (0.259)	p < .001	1.476 (0.279)	p < .001
Dispositional mindfulness	0.003 (0.003)	0.377	-0.003 (0.003)	0.348	0.003 (0.003)	0.340	-0.003 (0.003)	0.293
Physical health	-0.057 (0.019)	0.004	0.046 (0.022)	0.036	-0.046 (0.023)	0.045	-0.008 (0.025)	0.744
Income	-0.000 (0.000)	0.338	0.001 (0.000)	0.240	0.000 (0.000)	0.669	-0.001 (0.000)	0.308
Age	0.002 (0.002)	0.212	-0.006 (0.002)	0.001	0.002 (0.002)	0.121	-0.005 (0.002)	0.007
Depression	-0.023 (0.009)	0.014	0.008 (0.010)	0.460	-0.008 (0.016)	0.659	0.029 (0.018)	0.095
Anxiety	0.026 (0.022)	0.231	0.018 (0.024)	0.460	-0.064 (0.040)	0.098	0.008 (0.043)	0.850
Panic	-0.016 (0.017)	0.350	0.056 (0.019)	0.004	-0.008 (0.032)	0.620	0.007 (0.034)	0.837
Education	-0.007 (0.007)	0.322	0.024 (0.008)	0.003	0.010 (0.009)	0.217	0.003 (0.009)	0.717
Parental divorce	-0.074 (0.044)	0.090	-0.049 (0.049)	0.313	0.011 (0.052)	0.666	0.105 (0.056)	0.060
Marital status	0.136 (0.037)	< 0.001	-0.132 (0.041)	0.002	0.070 (0.052)	0.108	-0.013 (0.056)	0.820
Lived with alcoholic	0.016 (0.044)	0.720	0.085 (0.049)	0.082	-0.068 (0.054)	0.201	-0.098 (0.058)	0.088
Family support (M2)	0.400 (0.034)	< 0.001	-0.055 (0.038)	0.147	0.540 (0.038)	< 0.001	-0.043 (0.041)	0.290
Family strain (M2)	-0.065 (0.032)	0.047	0.449 (0.036)	p < .001	-0.079 (0.039)	0.021	0.492 (0.042)	< 0.001
Step 2	R ² = 0.001, p = 0.468		R ² = 0.009, p = .005		R ² = 0.002, p = .801		R ² = 0.010, p = .021	
Mindfulness	0.003 (0.016)	0.858	-0.008 (0.018)	0.659	-0.032 (0.025)	0.191	0.084 (0.024)	0.008
Childhood abuse	-0.010 (0.005)	0.215	0.023 (0.006)	< 0.001	0.001 (0.006)	0.955	0.001 (0.007)	0.627
Step 3	R ² = 0.000, p = .851		R ² = 0.008, p = .001		R ² = 0.000, p = .834		R ² = 0.001, p = .345	
Mindfulness X child abuse	0.001 (0.004)	0.851	-0.013 (0.004)	0.001	-0.001 (0.006)	0.834	-0.006 (0.007)	0.345
Total variance explained	0.33		0.39		0.35		0.28	

Note. Significant effects are bolded. M2 = MIDUS 2

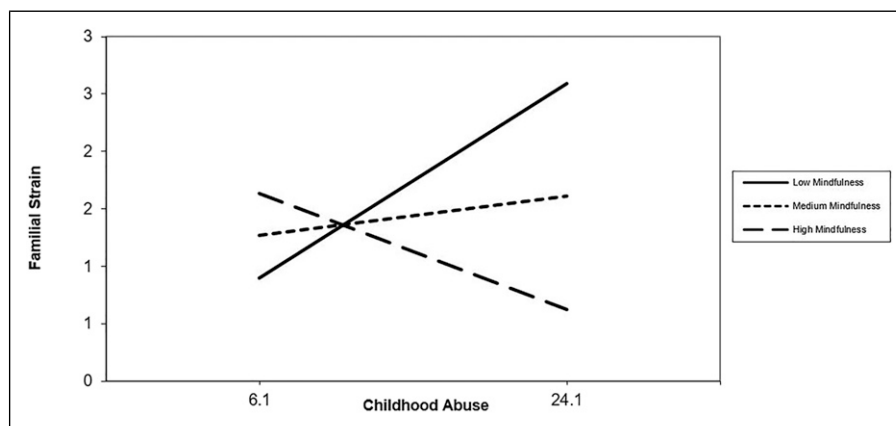


Figure 1. Interaction plot between child abuse, mindfulness at MIDUS 2, and family strain among women.

($b = 0.00, p = .83$) while a more frequent mindfulness practice was ($b = 0.08, p = .001$). The second step accounted for an additional 1.4% of the variance. Finally, the child abuse by mindfulness interaction term was not significant ($b = -0.01, p = .44$). The third step accounted for only an additional .1% of the variance in familial strain.

Female Regression M3 Mindfulness

Regarding women, within the first step of the regression equation for familial support, several covariates were significant. Women who reported better self-evaluated physical health also reported greater support from family members ($b = 0.05,$

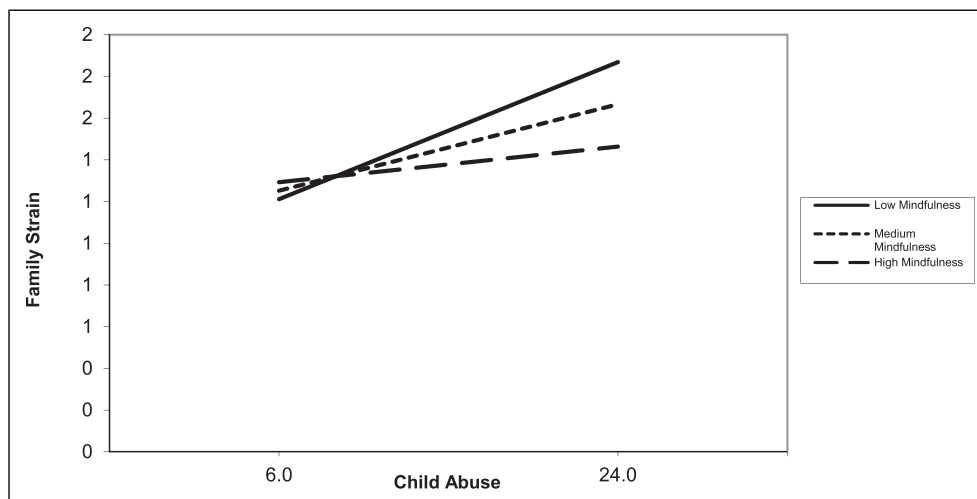


Figure 2. Interaction plot between child abuse, mindfulness at MIDUS 3, and family strain among women.

Table 5. Results of Hierarchical Moderation Analysis Examining Mindfulness as MIDUS 3 as a Moderator of Childhood Abuse and Familial Support and Strain Among Men and Women at MIDUS 3.

	Females				Males			
	Family support		Family strain		Family support		Family strain	
	<i>b</i> (SE)	Sig	<i>b</i> (SE)	Sig	<i>b</i> (SE)	Sig	<i>b</i> (SE)	Sig
Step 1	$R^2 = 0.322, p < .001$		$R^2 = 0.36, p < .001$		$R^2 = 0.347, p < .001$		$R^2 = 0.290, p < .001$	
Constant	2.306 (0.229)	< 0.001	1.449 (0.257)	< 0.001	1.215 (0.260)	< 0.001	1.537 (0.271)	< 0.001
Dispositional mindfulness	0.002 (0.003)	0.484	-0.003 (0.004)	0.374	0.003 (0.003)	0.340	-0.004 (0.003)	0.207
Physical health	-0.054 (0.019)	0.006	0.042 (0.022)	0.058	-0.047 (0.023)	0.045	-0.006 (0.024)	0.796
Income	-0.000 (0.000)	0.286	0.001 (0.000)	0.245	0.000 (0.000)	0.669	-0.000 (0.000)	0.152
Age	0.003 (0.002)	0.114	-0.007 (0.002)	< 0.001	0.003 (0.002)	0.121	-0.006 (0.002)	0.003
Depression	-0.021 (0.009)	0.022	0.005 (0.010)	0.616	-0.007 (0.016)	0.659	0.023 (0.017)	0.180
Anxiety	0.024 (0.022)	0.272	0.015 (0.024)	0.536	-0.067 (0.040)	0.098	0.012 (0.042)	0.776
Panic	-0.012 (0.017)	0.474	0.052 (0.019)	0.005	-0.016 (0.031)	0.620	0.038 (0.033)	0.247
Education	-0.007 (0.007)	0.320	0.024 (0.008)	0.004	0.011 (0.009)	0.217	0.001 (0.009)	0.893
Parental divorce	-0.096 (0.044)	0.028	-0.052 (0.049)	0.290	0.023 (0.052)	0.666	0.093 (0.055)	0.091
Marital status	0.133 (0.027)	< 0.001	-0.126 (0.042)	0.003	0.085 (0.053)	0.108	-0.042 (0.055)	0.451
Lived with alcoholic	0.014 (0.044)	0.747	0.100 (0.050)	0.045	-0.068 (0.053)	0.201	-0.088 (0.056)	0.114
Family support (M2)	0.401 (0.034)	< 0.001	-0.060 (0.038)	0.116	0.527 (0.038)	< 0.001	-0.043 (0.040)	0.284
Family strain (M2)	-0.064 (0.032)	0.047	0.449 (0.036)	< 0.001	-0.092 (0.040)	0.021	0.503 (0.041)	< 0.001
Step 2	$R^2 = 0.003, p = .184$		$R^2 = 0.013, p = .001$		$R^2 = 0.00, p = .801$		$R^2 = 0.015, p = .002$	
Mindfulness	0.018 (0.016)	0.262	-0.035 (0.017)	0.044	-0.015 (0.023)	0.527	0.084 (0.024)	0.001
Childhood abuse	-0.010 (0.005)	0.068	0.024 (0.006)	< 0.001	-0.001 (0.006)	0.896	0.001 (0.007)	0.831
Step 3	$R^2 = 0.004, p = .054$		$R^2 = 0.010, p = .001$		$R^2 = 0.00, p = .822$		$R^2 = 0.001, p = .435$	
Mindfulness X child abuse	0.01 (0.00)	0.054	-0.01 (0.00)	0.014	0.002 (0.007)	0.822	-0.006 (0.007)	0.435
Total variance explained	0.31		0.35		0.32		0.25	

Note. Significant effects are bolded. M2 = MIDUS 2

$p = .006$) and women who reported more depressive symptoms also reported less familial support ($b = -0.02, p = .02$). It was also found that women who have parents who did not divorce ($b = -0.10, p = .03$), were currently married ($b = 0.13, p < .001$),

and had high quality relationships with family members at MIDUS 2 ($b = 0.40, p < .001$) each reported more familial support. Further, women who reported more strained relationships with family members at MIDUS 2 reported lower levels of

familial support at MIUDS 3 ($b = -0.06, p = .047$). Women's reports of household income, age, anxiety, panic, education, and living with alcoholic during childhood did not predict familial support. The first step accounted for 30.9% of the variance in familial support. In the second step, childhood abuse and mindfulness were entered and neither abuse ($b = -0.10, p = .07$) nor mindfulness ($b = 0.18, p = .26$) were associated with familial support. The second step in the regression equation accounted for only an additional .3% of the variance. In the third step the childhood abuse by support interaction term approached significant ($b = 0.01, p = .054$), but was not significant. The third step accounted for an additional .2% of the variance.

Next, familial strain was examined. In the first step of the regression the covariates were examined, and several were significant predictors of strain. Specifically, older adults ($b = -0.01, p < .001$), those who lived with an alcoholic in childhood, and women who were not married ($b = -0.13, p = .003$) reported lower levels of familial strain. On the other hand, women who reported more panic ($b = 0.52, p = .005$), achieved a higher level of education ($b = 0.02, p = .003$), and women who previously reported greater levels of familial strain ($b = 0.45, p < .001$) each contributed to greater levels of strain over the 9-year study period. Women's physical health, household income, depression, anxiety, parental divorce, and previous support from family were not associated with strain. The first step accounted for 36% of the variance. In the second step, childhood abuse and mindfulness were both associated with familial strain. Women who reported more severe parental abuse ($b = 0.02, p < .001$) and a less frequent mindfulness practice ($b = -0.4, p = .04$) reported more familial strain accounting for the covariates. The second step accounted for an additional 1.3% of the variance. In the third step, the interaction term between child abuse and mindfulness predicting family strain was significant. The significant interaction term indicated that mindfulness longitudinally reduced the effects of childhood abuse on women's reports of marital strain. The third step accounted for an additional 1% of the variance.

Discussion

Childhood abuse has been linked to poorer quality family functioning among midlife adults (Author Citation; Kong & Moonman, 2016; Kong et al., 2019) and a mindfulness practice may be one way to aid this population in navigating familial relationships. Mindfulness research has been shown to improve the quality of the couple relationship (Author Citation; Kimmes et al., 2018), but few studies have considered the effects of mindfulness in the context of family relationships as they are distinct from the couple relationship. Moreover, there is little longitudinal research into the relational outcomes associated with mindfulness in the context of childhood abuse. Results of the study found that a more frequent mindfulness practice has both proximal and distal associations with fewer strained interactions with family members among women but not men. Mindfulness did not

enhance familial support for either men or women, but a mindfulness practice within the past year trended toward significance for women.

We found support for our hypothesis that mindfulness would buffer the relationship between abuse in childhood and strained familial interactions among women but not men. Specifically, we found that mindfulness buffered the effects of childhood abuse on familial interactions for women over both the short and long term. In other words, women who engage in a more frequent mindfulness practice experienced fewer strained interactions with their family members and the beneficial effects in reducing family strain were demonstrated both in the short term and long term. These findings are consistent with prior research on the associations between maltreatment and loneliness, marital strain, and relationship quality (Author Citations).

Mindfulness may have a multifaceted impact on adult familial relationships. First, mindfulness may promote the successful navigation of familial relationships through increased acceptance of not only their own internal emotional and cognitive states (Tomlinson et al., 2017), but also increased acceptance of others. Increased acceptance is not condoning other's negative behavior rather it's an internal recognition that others tend to behave in specific ways that can be subjective, critical, detached or otherwise hurtful or even harmful. Through this recognition and acceptance more informed decisions can be made about the status of the relationships. Another way that mindfulness may reduce familial strain is through making fewer benign attributions about other's behavior (Kimmes et al., 2017), increased emotional regulation (Chambers et al., 2009), and greater compassion and empathy (Kozlowski, 2013). Further, instead of reacting automatically or impulsively adult women may interact more mindfully with others, thereby reducing negative sequences of interaction (Bihari & Mullan, 2014).

The primary contribution of the current study is that we found that mindfulness reduced the impact of childhood abuse on familial strain for women. This is particularly important as most studies have considered mindfulness in the context of the couple relationship (Carson et al., 2004). The current study noted that the beneficial effects of mindfulness were applicable to women, but not men. There are numerous possible explanations at vary ecological levels. First, there are individual level factors that can provide explanations. The simplest and perhaps most obvious explanation is that women engaged in more frequent mindfulness which allowed for greater benefits to be had, which was documented at both MIDUS 2 and MIDUS 3. Here, there is a dose-response relationship where a more frequent mindfulness practice yields better outcomes (Joss et al., 2019). For men, if mindfulness is used inconsistently, only used in response to specific problems, or other coping strategies are used, it may limit the efficacy of mindfulness practice. This proposition reflects assumptions that men and women engage in mindfulness in similar ways, and it is therefore the quantity of practice that shapes relationships rather than the "quality." Alternatively, men

and women may engage in mindfulness differently and therefore discrepant findings may be a function of how men and women are mindful. Recent neurobiological research has found that different areas of the brain are activated in men and women during mindfulness practice. [Rojiani et al., \(2017\)](#) found that areas of the brain associated with cognition (i.e., superior parietal regions) are activated in men while areas of the brain associated with emotion (i.e., amygdala) are activated in women. Less emotional dysregulation is likely to increase clarity and recognition of the limitations of family members, allowing them to respond more appropriately (e.g., distancing themselves from family conflict).

There are also explanations for the current findings at the family level, specifically around family roles. Among women, research has noted that the effects of childhood abuse have a significantly greater impact on the negative characteristics within interpersonal relationships compared to negative impacts on the positive characteristics (Author Citation). Further, because of childhood abuse, individuals may focus their attention on negative interactions compared to positive ones and employ mindfulness to use as a coping strategy. Here, adults would focus their mindfulness practice on reactivity towards their family members. Within a family context, women are more often in a primary caretaker role in relation to aging parents, siblings, and their own children ([Coward & Dwyer, 1990](#); [Grigoryeva, 2017](#); [Ingersoll-Dayton et al., 1996](#)) and his may be particularly true for women who were abused in childhood. Women who grew up in violent household often discuss having an established role as a caretaker ([Wuest et al., 2010](#)), which is consistent with the theoretical underpinnings of the convoy model. From the convoy model perspective, abuse in childhood often occurs within a dysfunctional family context of high conflict, low cohesion, other forms of family violence, and poor-quality marriages between the parents ([Stith et al., 2009](#)). Children raised in these households may continue to have conflict, strained, or stressful interactions with family members across the life course ([Kong et al., 2019](#)) as the dysfunctional familial structure and organization potentiates conflict. Mindfulness may allow adult women to view their family from a more present minded place rather than engaging in the existing, established ways of the family that were likely established in childhood. In abusive families, women often strive for acceptance and redemption in their role as a caretaker and be willing to endure ongoing criticism, detachment, or other forms of stress and strain in an attempt to redeem themselves ([Wuest et al., 2010](#)). Mindfulness practices may allow women who were abused recognize dysfunctional patterns, mindfully attend to their reactions to family patterns, gain new perspective on their family members, and create boundaries or extricate themselves from family dysfunction, thereby reducing their experiences of familial strain.

It was surprising to find that mindfulness did not buffer the relationship between childhood abuse and familial support, particularly for women. Prior research using the MIDUS data

noted that a more frequent mindfulness practice buffered the effects of childhood abuse and neglect on adult support, strain, and overall quality of adult marriages (Author Citation). Numerous differences exist that could help account for the unexpected findings. First, the marital relationship is quite different from familial relationships. From a convoy perspective, marital partners become a part of adult's convoys in adulthood whereas familial relationships start at birth. Thus, dynamics of adult familial relationships may be an extension of family of origin dynamics with established roles, functions, and patterns of communication ([Antonucci et al., 2014](#)). Since abusive households demonstrate low family cohesion and more negative relationships ([Stith et al., 2009](#)), engaging in a mindfulness practice may change how the abuse survivor views and interacts with family member; however, because roles have been long-established family members may not be receptive to change. Consequently, family members may not offer support to the survivor over time because it goes against the maintained family homeostasis. Second, Author Citation used a cross sectional design, thus change over time was not considered, so it was not possible to discern whether mindfulness produces change over time. Moreover, with the current study's methodological advantages including a larger sample size and longitudinal design, the current study's findings provide stronger evidence of the effects of mindfulness on support in relationship; however, future research is needed to confer and substantiate these conclusions.

Limitations

The current study has numerous strengths including the use of a large general population sample, a longitudinal design, and documentation that the impact of a mindfulness practice reduces strained familial interaction while controlling for adult's general disposition to be mindful and numerous other covariates. There are, however, limitations to the current study. First, the study only assessed parentally perpetrated emotional and physical abuse and did not include measures of other forms of maltreatment including sexual abuse and neglect. Second, the measure of childhood abuse is retrospective in nature and may be subject to recall bias or social desirability. Third, our measure of familial support and strain was focused on non-partner, family relationships and did not specify individual people. Although prior research has noted that parentally perpetrated childhood abuse influences the survivor's relationship with the perpetrating parent ([Kong & Moorman, 2016](#)), the current study was unable to document supportive and strained interactions with the perpetrator specifically. An additional limitation is that we used a single item measuring the frequency of mindfulness. A more comprehensive assessment of adult's mindfulness practice could strengthen conclusions. Relatedly, we were unable to measure participant's practice of mindfulness between MIDUS 2 and MIDUS 3, so it is unclear how frequently men

and women practiced between the waves outside of the past year that was measured at the MIDUS 3 assessment of mindfulness.

Conclusion

Results of the study indicate that mindfulness may protect against familial strain among women who were abused in childhood. This is among the first studies to consider mindfulness in the context of familial relationships and even fewer have considered the role of childhood abuse. Given women's central role in family life, mindfulness-based practices may be effective in reducing negative interactions over time. Mindfulness may change how midlife women view their relationships with their families and more successfully navigate the complexities of family life. Clinicians may want to encourage midlife women to adopt a mindfulness-based practice as an adjunctive treatment when they are presenting with familial issues. Numerous mindfulness-based interventions such as Mindfulness-Based Stress Reduction and Mindfulness-Based Cognitive Behavioral Therapy may be appropriate for women who are presenting with relational issues with their family.

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