

THESIS

DOES MINDFULNESS MODERATE THE ASSOCIATION BETWEEN INTERPARENTAL  
CONFLICT AND DEPRESSIVE SYMPTOMS IN ADOLESCENTS?

Submitted by

Jana Carson

Department of Human Development and Family Studies

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Master's Committee:

Advisor: Rachel Lucas-Thompson

Lauren Shomaker  
Lorann Stallones

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## ABSTRACT

### DOES MINDFULNESS MODERATE THE ASSOCIATION BETWEEN INTERPARENTAL CONFLICT AND DEPRESSIVE SYMPTOMS IN ADOLESCENTS?

The main goal of this study was to examine the interactions between perceived interparental conflict dimensions (i.e., threat, conflict property, and self-blame) and trait mindfulness in relation to depressive symptoms among adolescents. Age was also tested as a moderator of these associations. One hundred and fifty adolescents (range: 14-21 years old) visited the laboratory at the Colorado State University campus where they completed various questionnaires on a computer. Results indicated that depressive symptoms were significantly and negatively associated with mindfulness. Of the perceived interparental conflict variables, threat was the only dimension significantly—and negatively—associated with mindfulness. There were no significant interactions between conflict dimensions and mindfulness in relation to depressive symptoms, and age was not a significant moderator. Although causality cannot be determined, the results indicate that perceived threat may be a risk factor for adolescent depression, and the results are in line with evidence that mindfulness based treatments may reduce depression for adolescents. Future research may want to examine whether other aspects of trait mindfulness (i.e., self-compassion and non-judgement) are more effective for buffering depressive symptoms in adolescents perceiving interparental conflict.

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## CHAPTER 1- Overview of the Literature

Depression is an increasingly serious mental health issue, rating first place for cause of burden of disease in countries classified as middle or high income (World Health Organization, 2008). Depression typically begins to emerge in adolescence, and those exposed to negative interparental conflict are even more likely to exhibit issues with depression than those from homes without conflict (Rhoades, 2008; Vaez, Indran, Abdollahi, Juhari & Mansor, 2015). Research supports theoretical arguments that both trait (Hill & Updegraff, 2011) and learned (Kaviani, Javaheri & Hatami, 2011) mindfulness are associated with reduced depression levels in adolescents; however, there is as of yet no empirical evidence for mindfulness as a buffer for depression in the context of adolescent exposed to interparental conflict. The main goal of the current study is to examine whether the association between negative interparental conflict and adolescent depressive symptoms is moderated by trait mindfulness. In addition, because of arguments about age differences in these associations (Alispahic & Hasanbegovic-Anic, 2017; Grych & Fincham, 1990; Rhoades, 2008), age will also be tested as a moderator.

### **Adolescent Vulnerability to Mental Health Issues**

Adolescence, the time period between ages 10 and 25, is a turbulent time for human development, filled with physical, mental, and relational changes (Steinberg, 2014). Physically, adolescence is characterized by changes in various hormone levels, along with high amounts of synaptic pruning and neuron mylenation, as the brain is in a sense restructuring itself (Anderson, 2003). Mentally, large gains in self-regulation are generally observed, resulting in the improvements in executive functioning such as the abilities to control and manage cognitions, emotions, and behaviors (Anderson, 2003; Steinberg, 2014). Additionally, relationships with primary caregivers often shift during this time, as adolescents begin to search for greater

independence and autonomy (Buehler, Lange & Franck, 2007). These many changes set adolescents in a period of flux. As various physical, mental, and relational parts begin to transition and change, adolescents are increasingly vulnerable to a variety of issues such as cognitive and emotional dysregulation (Chambers et al., 2014; Paus, Keshavan & Giedd, 2008). Additionally, research shows that depression rates begin to increase around age 15 (Chambers et al., 2014).

In conjunction with these many internal changes, adolescence is a time period of plasticity, indicating that the brain is able to be more easily molded and shaped (Steinberg, 2014). This plasticity can result in positive effects as it allows for growth and resiliency, but it can also be negative in that it creates a time of "heightened sensitivity," making the brain highly vulnerable to outside influences (Steinberg, 2014, pg 25). Environmental stressors can be incorporated into the adolescent's neurobiology in a way that leads to negative developmental outcomes such as depression (Anderson, 2003). In turn, then, depression in adolescence is highly associated with depression in adulthood, indicating that once established in youth, depression often becomes a life-long issue (Royuela-Colomer & Calvete, 2016).

### **Interparental Conflict and Adolescent Depressive Symptoms**

As adolescents are already at an increased vulnerability for mental health problems, adding risk factors during this time period can be highly detrimental to healthy development. One known risk factor is interparental conflict (Vaez et al., 2015). Interparental conflict occurs on a continuum, ranging from positive and helpful to negative and destructive; as the conflict becomes more characterized by anger, hostility, verbal aggression, and a lack of resolution, it can have increasingly harmful impacts on youth (Goeke-Morey, Cummings, Harold & Shelton, 2003; Khaleque, Kamal Uddin, Shirin, Aktar & Afrin Himi, 2016).

Interparental conflict can be harmful either through direct or indirect pathways. With direct pathways, the adolescent is affected by experiencing and witnessing the conflict first-hand, while with indirect pathways, interparental conflict affects other areas of family functioning such as parent-child relationships that then affect the youth (Khaleque et al., 2016). Many theoretical positions provide reasons to expect that negative interparental conflict directly increases risk for elevated depressive symptoms; these theoretical positions include family systems theory, the cognitive-contextual framework, and the emotional security hypothesis (Grych & Fincham, 1990; Cummings, Koss & Davies, 2014; Smith & Hamon, 2012). These theories combine to provide a basis for understanding the link between interparental conflict and adolescent depressive symptoms.

Family systems theory focuses on the idea that a person cannot be understood as a separate individual outside the context of a family (Smith & Hamon, 2012). Rather, people are viewed as parts of a family system, with members of the family interacting with each other in ways that result in bidirectional shaping and influencing (Smith & Hamon, 2012). Therefore, if an adolescent presents depressive issues, it is likely that these issues are a representation of larger issues within the family (Smith & Hamon, 2012). As interparental conflict is by definition an issue that occurs within the family environment, this conflict likely contributes to shaping and influencing adolescents exposed to this environment. In fact, this idea is supported by research focused on family dynamics, finding that families of depressed youth are often characterized by less cohesion, less effective communication, and more violent, unresolved conflict (Kashini, Burbach & Rosenberg, 1988; Kaslow, Deering & Racusin, 1994). Additionally, youth become more affected by such negative environments over time, becoming more sensitive and reacting



more negatively to the environmental stressor with more exposure (Goeke-Morey, Papp & Cummings, 2013).

In addition, the cognitive-contextual framework and emotional security theory focus on the specific ways that direct interparental conflict exposure translates into mental health issues like depression, emphasizing the importance of cognitive (Grych & Fincham, 1990) and emotional (Davies & Cummings, 1994) responses to conflict (Khaleque et al., 2016). According to the emotional security theory, youth become emotionally aroused due to interparental conflict, leading to distress and insecurity in the youth (Buhler et al., 2007). Additionally, according to the cognitive-contextual framework, adolescents exposed to interparental conflict appraise and make negative internal cognitive judgments and perceptions about the conflict (Khaleque et al., 2016). Significant associations have been found between exposure to interparental conflict and these cognitive judgments, with levels of interparental conflict positively correlating with judgments of conflict properties, perceived threat, and self-blame in youth (Goeke-Moey et al., 2013; Rhoades, 2008). Appraisals of conflict properties, threat, and self-blame are linked then with negative coping techniques and depression (Rhoades, 2008; Ulu & Fisiloglu, 2002). For example, upon conducting a meta-analysis, Rhoades (2008) found moderate effect sizes for the associations between the negative cognitions of interparental conflict appraisals and internalizing problems such as depression. This association is also found specifically among adolescents (Buhler et al., 2007; Harold, Fincham, Osborne & Conger, 1997; Rhoades, 2008).

Along with theory, empirical research also links negative interparental conflict to depression and depressive symptoms (Vaez et al., 2015). Significant associations between interparental conflict and internalizing problems (e.g., anxiety and depression) have been found in many studies (Doyle & Markiewicz, 2005; Gerard, Buehler, Franck & Anderson, 2005;

Harold et al., 1997; Hayatbakhsh et al., 2013). A meta-analysis of 68 interparental conflict studies found a significant, small to moderate effect size ( $d = .32$ ) for the association between conflict and youth problem behaviors (i.e., internalizing and externalizing behaviors) (Buehler et al., 1997). Additionally, O'Donnell, Moreau, Caremil and Pollastri (2010) found a highly significant association between interparental conflict and youth depressive symptoms, even across two years.

### **Associating Mindfulness with Depressive Symptoms**

Although mindfulness can be defined in various ways, two key factors include the ideas of attention and awareness (Brown & Ryan, 2003). Attention and awareness are utilized in being present to internal thoughts and emotions as well as external behaviors, actions, and settings (Brown, Ryan & Creswell, 2007). Additionally, mindfulness is conceptualized as a personality trait that can also be increased through guided training (Keng, Smoski & Robins, 2011).

People with depression often struggle with mindfulness-related capabilities, and mindfulness levels and depressive symptoms show a significant and moderate-to-strong negative correlation (Chambers et al., 2009). People with depression find it difficult to be aware of and manage thoughts and emotions in appropriate ways (Gotlib & Joormann, 2010; Thompson, 2015). According to the negativity and exclusivity hypothesis, depressed people report highly negative and pessimistic views about themselves, the world, their past experiences, and their future expectations (Beck, 1987). These thoughts and feelings become heightened, prolonged, automatic, and unmanageable (Beck, 1987; Gotlib & Joormann, 2010).

In contrast, mindfulness connects people with their cognitions and emotions, helping them to be aware of these thoughts and feelings while paying attention to when they occur (Chambers et al., 2009). Studies show that both trait and learned mindfulness are linked to better

cognitive and emotional regulation processes (Hill & Updegraff, 2011; Kaviani et al., 2011; Pepping, Duvenage, Cronin & Lyons, 2016). For example, trait mindfulness is related to healthier emotional regulation, stability, and awareness (Hill & Updegraff, 2011). Metz et al. (2013) also found that high school students participating in a mindfulness-based program were significantly better at regulating their emotions than the control group. Additionally, both trait and learned mindfulness levels negatively correlate with cognitive dysregulation, resulting in fewer negative automatic cognitions and dysfunctional attitudes and schemas (Chambers et al., 2014; Kaviani et al., 2011).

As a result of the relationship between mindfulness and cognitive/emotional regulation, mindfulness has been incorporated into a variety of treatments for depression and depressive symptoms (Keng, Seah, Tong & Smoski, 2016; Keng et al., 2011). Mindfulness-Based Stress Reduction was originally created as a way to reduce stress and anxiety levels, but it has since shown success in treating depression and depressive symptoms in a variety of populations including patients with multiple sclerosis (Grossman et al., 2010) and fibromyalgia (Sephton et al., 2007), as well as medical students (Shapiro, Schwartz & Bonner, 1998). Mindfulness-Based Cognitive Therapy, Acceptance and Commitment Therapy, and Dialectic Behavioral Therapy also incorporate mindfulness aspects, and they have shown success in reducing depression for adolescents (Burke, 2010; Felver, Celiz-de Hoyos, Tezanos & Singh, 2016; King et al., 2011). Mindfulness Based Cognitive Therapy specifically has been shown to reduce the incidence of depression relapse in participants with a history of more than two major depressive episodes, reducing the depression relapse rate to the same degree as antidepressant medication (Kuyken et al., 2008; Teasdale et al., 2000). Additionally, a meta-analysis of 39 mindfulness-based

studies found a moderate effect size (Hedges's  $g = 0.59$ ) for the improvement of mood symptoms in people with mood disorders (Hofmann, Sawyer, Witt & Oh, 2010).

### **Mindfulness as a Moderator**

In addition to helping lower existing depression and depressive symptoms, mindfulness has been shown to initially buffer against psychological issues as well (Calvete, Orue & Sampedro, 2017; Dixon & Overall, 2016; Marks, Sobanski & Hine, 2010). Studies from Spain, New Zealand, Australia, and the United States have all found trait mindfulness to significantly buffer adolescents against psychological problems in the face of stressful circumstances, observing attenuated anxiety, dysphoria, self-injury behaviors, and depressive symptoms in those adolescents with higher levels of trait mindfulness (Calvete et al., 2017; Ciesla, Reilly, Dickson, Emanuel & Updegraff, 2012; Dixon & Overall, 2016; Marks et al., 2010). Mindfulness has also been shown to buffer against psychological issues when it is learned before a stressful event (Kaviani et al., 2011; Britton, Shahar, Szepsenwol & Jacobs, 2012). Research finds that people who receive mindfulness training before a stressful event exhibit less emotional dysregulation and fewer depressive symptoms than do control group members who do not receive any mindfulness training (Kaviani et al., 2011; Britton et al., 2012). For example, participants in a study that received Mindfulness Based Cognitive Therapy (MBCT) before undergoing the Trier Social Stress Test (TSST) showed significantly less emotional reactivity and fewer depressive symptoms than those in the waitlist control group (Britton et al., 2012). Another study found that students who received MBCT exhibited significantly lower depressive feelings and negative automatic thoughts than those in the control group, and these significantly lower levels were maintained after a stressful exam (Kaviani et al., 2011). This evidence suggests that increased mindfulness can buffer those exposed to stressors from negative outcomes like depression, but

there is as of yet no specific evidence relating this to the stressful situation of interparental conflict.

### **Age as a Moderator**

Various studies indicate that age may have a moderating effect on the associations detailed previously (Alispahic & Hasanbegovic-Anic, 2017; Baer et al., 2008; Jouriles, Spiller, Stephens, McDonald & Swank, 2000; Rhoades, 2008; Shifflett-Simpson & Cummings, 1996; Ulu & Fisiloglu, 2002). After conducting a review of the marital conflict literature, Grych and Fincham (1990) suggested that interparental conflict appraisals and their effects may vary systematically with age. Furthermore, a meta-analysis of 71 studies examining child adjustment and responses to interparental conflict also found that youth ages 10.61 to 19 showed larger effect sizes for negative affect, behavioral responses, physiological responses, and adjustment problems than those aged five to 10.61 (Rhoades, 2008). Additionally, mindfulness has been shown by some studies to differ across age, with older age groups reporting more awareness than younger age groups (Alispahic & Hasanbegovic-Anic, 2017; Baer et al., 2008). As adolescence is a broad time period with an immense amount of cognitive growth, it is possible that age interacts with perceptions of interparental conflict and mindfulness in ways that create different levels of depressive symptoms for youth (De Luca et al., 2003; Steinberg, 2014).

### **Current Study**

It is well-documented that there is a positive association between interparental conflict and adolescent depressive symptoms (Vaez et al., 2015). Additionally, existing literature supports the idea that mindfulness is associated with reduced depression in a variety of cases and populations (Burke, 2010; Keng et al., 2011), and that increased mindfulness can buffer against adolescent depressive symptoms (Calvete et al., 2017). However, research has not yet focused

on whether mindfulness moderates the association between interparental conflict and depressive symptoms, such as whether mindfulness buffers against adolescent depressive symptoms for those who perceive interparental conflict more-negatively. Based on the literature, I hypothesize that the perception of negative interparental conflict is positively associated with depressive symptoms in adolescents. Additionally, I hypothesize that trait mindfulness moderates this association, with high levels of mindfulness lowering levels of depression in adolescents who perceive negative interparental conflict (relative to adolescents with low levels of mindfulness). Therefore, I purpose that trait mindfulness may weaken the association between perceived interparental conflict and adolescent depression.

## CHAPTER 2- Methods

### **Participants**

One hundred and fifty adolescents (range: 14-21 years old) participated in this study. Only participants with two parents in the home were allowed to participate. Based on self-reported demographic information, 60% of participants are female, and the average age is 18 years old ( $SD = 2$  years). Sixty three percent of participants are Colorado State University students, and the rest were recruited from the community. Sixty two percent of participants indicated that they live outside their parents' home. Ethnically, 85% of participants self-identified as Caucasian, 4% Asian/Pacific Islander, 3% Black, 3% American Indian and 10% other. Some participants endorsed multiple races. Of the total participants, 10% identified as Hispanic/Latino. Family incomes on average were \$95,000 – \$109,000 annually. Additionally, both mothers and fathers on average had a four-year college degree.

### **Procedure**

This study focuses on one aspect of a larger research study examining links between family relationships, mindfulness, and physical and mental health; only procedures pertaining to this specific research interest will be reported here. Participants were recruited through flyers, letters, and informational sessions throughout the community. Additionally, students enrolled in Introduction to Psychology classes at Colorado State University were recruited through a social science subject pool. Participants 17 years old and older provided written consent, while parental consent and youth assent were obtained for participants under 17 years old. Participants visited the laboratory at the Colorado State University campus where they completed various questionnaires regarding mindfulness, perceptions of family relationships, mental/emotional

health, and participant demographics on a computer. After finishing, Colorado State University students received course credit and were entered into a drawing to win a gift card. Participants recruited from the community were paid \$40.

## **Measures**

### *Perceived interparental conflict*

Perceived interparental conflict was assessed using the Children's Perceptions of Interparental Conflict Scale (CPIC) (Grych, Seid & Fincham, 1992). CPIC utilizes three response options: "false," "sort of true," and "true," and answers are reverse-scored when necessary (Nigg, Nikolas, Miller, Burt, Klump & von Eye, 2009). This self-report questionnaire contains 49 items which are designed to measure three main areas of perceived interparental conflict: conflict properties, threat, and self-blame (Grych et al., 1992). After appropriate reverse scoring, average scores are calculated for each dimension. The conflict properties subscale contains 27 items and measures frequency, intensity, resolution, stability, and triangulation of interparental conflict (e.g., "When my parents have an argument they yell a lot"). Threat contains 12 items which assess the child's perception of threat and coping efficacy (e.g., "When my parents argue I worry about what will happen to me"). Self-blame includes 13 items that measure content and self-blame (e.g., "It's usually my fault when my parents argue"). For each subscale, mean scores will be created, with higher scores indicating more negative perceived conflict properties, threat, and self-blame. Cronbach's alpha for each dimension of the perceived interparental conflict scale was acceptable with conflict properties equaling .94, threat showing .78, and self-blame being .86.

There is substantial evidence from past studies that this measure is reliable and valid (Grych et al., 1992). For instance, good internal consistency was found across two samples, with



all but one Cronbach's alpha being over .80 (conflict properties,  $r_s = .90, .89$ ; threat,  $r_s = .83, .83$ ; and self-blame,  $r_s = .78, .84$ ). Additionally, test-retest over the course of two weeks showed an acceptable level of stability (conflict properties,  $r = .70$ ; threat,  $r = .68$ ; and self-blame,  $r = .76$ ). Validity was assessed by comparing scores with the O'Leary-Portal Scale (OPS) and the Conflict Tactics Scale (CTS), two established measures of marital conflict. CPIC's subscale of conflict properties was found to be significantly related to both scales (OPS,  $r(81) = .30$ ; CTS,  $r(78) = .39$ ); however, threat and self-blame subscales were not significantly associated with the OPS and CTS. As OPS and CTS focus on conflict properties, it stands to reason that it would not be significantly associated with threat and self-blame. In addition, there were significant positive associations between conflict properties and aggression and anxiety, and between threat and self-blame with anxiety (Grych et al., 1992).

Although the CPIC scale was originally created for children ages nine to twelve, it is also a reliable measure for perceived interparental conflict in adolescents through age 21 (Bickham & Fiese, 1997; Grych et al., 1992). Bickham and Fiese (1997) used factor analyses and Cronbach's alphas, finding good reliability for this age group (conflict properties,  $r = .95$ ; threat,  $r = .82$ ; self-blame,  $r = .73$ ).

### *Mindfulness*

Trait mindfulness levels were measured through the Mindful Attention and Awareness Scale (MAAS) (Brown & Ryan, 2003). This scale contains 15 questions on a six point Likert scale from 1 (*almost always*) to 6 (*almost never*). High scores indicate high levels of trait mindfulness. Sample items include "I do jobs or tasks automatically, without being aware of what I'm doing," and "I tend not to notice feelings of physical tension or discomfort until they really grab my attention." Cronbach's alpha for the scale was acceptable at .78.

Brown and Ryan (2003) report adequate reliability and validity for MAAS. Reliability was found by testing seven different samples, finding an average Cronbach's alpha of .84, indicating adequate internal consistency. Test-retest reliability was also examined; there were no significant differences in scores over the course of a four-week time span ( $t(59) = .11$ ). Validity was assessed by comparing MAAS to existing scales that measure awareness and attention such as the Trait Meta-Mood Scale which measures clarity, attention, and repair. They found a significant moderate to strong correlation between the two scales across three large samples ( $r_s = .46, .42, .37, p_s < .0001$ ). Convergence was tested by comparing MAAS with the Mindfulness/Mindlessness Scale across two samples, finding significant moderate associations ( $r_s = .31, .33, p_s < .0001$ ). Additionally, divergence was tested by comparing MAAS scores to those of the Absorption scale, which measures the state of not being aware of present happenings. This resulted in a significant low correlation ( $r = -.15, p < .05$ ) (Brown & Ryan, 2003).

#### *Depressive symptoms*

This study utilized the Center for Epidemiological Studies Depression (CES-D) Scale to measure depressive symptom levels (Radloff, 1977). This scale contains 20 items and uses a four point Likert scale of 1 (*rarely or none of the time (< once a week)*), 2 (*some of a little of the time (1-2 days/week)*), 3 (*occasionally or a moderate amount of time (3-4 days/week)*), and 4 (*most of all of the time (5-7 days/week)*). Reverse scoring was utilized so that higher scores represented higher levels of depressive symptoms. Sample items include "I thought my life had been a failure," and "I felt sad" (Radloff, 1977). Cronbach's alpha for this scale was calculated and found to be acceptable at .72. Additionally, although the cutoff score that corresponds to potentially clinically elevated symptoms for this measure tends to range from 12 to 24

throughout the literature (Stockings et al., 2015), the current study placed the cutoff at 16 in concordance with Radloff (1977). Of the sample, 50 participants (33.3%) scored 16 or higher, indicating elevated depressive symptoms.

Radloff (1977) found adequate reliability and validity for the CES-D scale. Reliability was found through Cronbach's alpha and the split-halves method, showing high internal consistency (Cronbach's alpha = .90). Additionally, test-retest correlations showed a strong association between scores over the course of eight weeks ( $r = .59$ ). Radloff also found the scale to have high validity. Across three samples, Radloff also found high convergent validity as it correlated well with the Bradburn Negative Affect Scale, a scale measuring depression (mean  $r = .59$ ). Divergent validity was also found, with CES-D showing a moderate negative correlation with the Bradburn Positive Affect Scale across three samples (mean  $r = -.34$ ) (Radloff, 1977). The CES-D scale was later found to have adequate reliability specifically for use with adolescents (Radloff, 1991).

### *Control variables*

Analyses controlled for various variables including age, sex, family yearly income, and current living situation (with parents at home vs. not with parents at home), all reported by participants. Living situation was included as it is possible that direct and current exposure to negative interparental conflict may lead to systematic differences in depression levels as compared to those participants living outside the home who are reporting perceptions of past experiences.

### **Data Analysis**

In order to test trait mindfulness as a moderator of the association between conflict appraisals and depressive symptoms, I used multiple regression analyses and multiplicative

interaction terms, which were created after centering mindfulness and all appraisals around the mean. First, I ran a regression analysis predicting depressive symptoms, including all variables in one single analysis. In line with past research (Bickham & Fiese, 1997; Lucas-Thompson, Lunkenheimer & Granger, 2016), the CPIC subscales of conflict properties, threat, and self-blame, were each included as a separate variable. Then, I examined the calculated multiplicative interaction terms with each subscale separately and trait mindfulness. Multiple regression was also used for each interparental conflict appraisal x age and age x trait mindfulness. Each interaction was tested separately while accounting for potential control variables and controlling for main effects of appraisals, mindfulness, and age. Significant interactions were then plotted and interpreted following procedures in Aiken and West (1991).

Post-hoc power analyses (using GPOWER; Faul & Erdfelder, 1992) were conducted with multiple regression and nine predictors. Predictors included interparental conflict appraisals (conflict properties, threat, and self-blame), trait mindfulness, perceived interparental conflict x trait mindfulness, as well as control variables of age, sex, family income, and living situation. As 150 participants were obtained, the study had adequate power to detect moderate (power = .92) and large (power = 1) effects, however, there was inadequate power to detect small effects (power = .16).

## CHAPTER 3- Results

Means, standard deviations, and bivariate correlations can be found summarized in Table

1. Significant positive correlations were observed between all three perceived interparental conflict variables (i.e., threat, self-blame, conflict property) and depressive symptoms. In addition, depressive symptoms and mindfulness were significantly, negatively correlated. Age was not related to perceived interparental conflict variables nor mindfulness. Additionally, threat was the only perceived interparental conflict dimension that was significantly, and negatively, correlated with mindfulness. However, self-blame and mindfulness were negatively correlated at trend levels of significance. Control variables were not significantly related to the main variables of interest.

After controlling for age, sex, income, and living situation, multivariate analyses predicting depressive symptoms indicated a significant and positive association in regards to threat but not self-blame or conflict properties (see Table 2). Mindfulness was significantly, and negatively, associated with depressive symptoms, while age was not significantly related to depressive symptoms.

Finally, multiplicative interactions were tested (see Table 3). Regression analyses revealed no significant interactions between perceived interparental conflict variables, mindfulness, and depressive symptoms. Additionally, no significant interactions were observed between interparental conflict variables, depressive symptoms and age, nor between mindfulness, depressive symptoms and age. Sex was also tested as a moderator and no significant interactions were found.

## CHAPTER 4- Discussion

The main goal of this study was to examine the interactions between perceived interparental conflict dimensions (i.e., threat, conflict property, and self-blame) and trait mindfulness in relation to depressive symptoms among adolescents. Age was also tested as a moderator of these associations. Results indicated that depressive symptoms were significantly and negatively associated with mindfulness. Of the perceived interparental conflict variables, threat was the only dimension significantly—and negatively—associated with mindfulness. There were no significant interactions between conflict dimensions and mindfulness in relation to depressive symptoms, and age was not a significant moderator.

Results showed that for adolescents, as perceived threat increased, depressive symptoms also increased. This result was contrary to the hypothesis that all perceived interparental conflict dimensions would be significantly associated with depressive symptoms, and it differed from past studies that have found self-blame and conflict properties to also be associated with depressive symptoms (Buehler et al., 2007; Gerard et al., 2005; Grych, Fincham, Jouriles, & McDonald, 2000; Rhoades, 2008; Ulu & Fisiloglu, 2002). However, the study's finding is consistent with other past studies that have found positive associations specifically between threat and depressive symptoms (Atkinson, Dadds, Chiquier & Dawe, 2009; Gerard et al., 2005; Grych, Harold, & Miles, 2003; Keeports & Pittman, 2017; Kim, Jackson, Conrad & Hunter, 2008). For example, Keeports and Pittman (2017) found that youth ages 18 - 21 who perceived threat in interparental conflict were more likely to exhibit depressive symptoms while perceived self-blame was particularly associated with anxiety. Another study of sixth graders found that perceived threat specifically had a stronger relationship with internalizing problems than the

other interparental conflict dimensions (Gerard et al., 2005). Therefore, it appears plausible that perceived threat may be more related to depression than self-blame and conflict properties (Atkinson et al., 2009; Gerard et al., 2005; Grych et al., 2003). It is also possible that perceived threat is more important specifically for adolescents. Adolescents tend to have greater cognitive capacities than younger children, possibly making adolescents better at detecting threatening conflict while making them less likely to self-blame (Kim et al., 2008; Rhoades, 2008). Contrasting results also may relate to certain methodological differences among the studies. For example, larger sample sizes in some studies created more power to detect differences. For instance, two studies finding significant associations between self-blame, conflict properties and depressive symptoms had samples sizes of 462 (Grych et al., 2000) and 1,893 (Gerard et al., 2005). It is therefore possible that associations between threat and depressive symptoms may be stronger and as such easier to detect with smaller sample sizes than associations between conflict properties and self-blame with depressive symptoms. Additionally, the use of different measures for depressive symptoms may also lead to variability in outcomes. A meta-analysis of studies using different depression scales found that the Child Depression Inventory (a scale used in many of the studies mentioned above that found significant results for all conflict dimensions with perceived interparental conflict) was slightly more sensitive than the CES-D scale used in the current study (Grych et al., 2000; Stockings et al., 2015; Ulu & Fisiloglu, 2002).

As hypothesized, the current study's results indicate that as mindfulness increased, depressive symptoms decreased. This finding is consistent with past literature showing that trait mindfulness is negatively correlated with depressive markers and symptoms (Cash & Wittingham, 2010; Chambers et al., 2014; Hill & Updegraff; Kaviani et al., 2011). As mindful people tend to be more emotionally and cognitively regulated and aware, they show lower levels

of depressive symptoms (Chambers et al., 2014). The current finding is also consistent with mindfulness literature specifically focused on adolescents with depressive symptoms, showing that the negative association remained significant for this population (Cash & Whittingham, 2010; Waszuczuk et al., 2015). Additionally, although the current study cannot show directionality nor causality between mindfulness and depressive symptoms, it is possible that higher mindfulness reduces depression (Gotink et al., 2015; Kuyken et al., 2008; Teasdale et al., 2000). Supporting this, a systematic review of 17 randomized controlled trial studies found that increasing mindfulness through Mindfulness-Based Cognitive Therapy trainings significantly decreased depressive symptoms for participants who reported a history of at least three depressive episodes as compared to a treatment as usual control group (Gotink et al., 2015).

Contrary to the study's main hypothesis, trait mindfulness did not appear to moderate the relationship between perceived interparental conflict and depressive symptoms. Although main effects were found for both perceived threat and mindfulness individually with depressive symptoms, the effects did not appear to work together interactively. Rather, perceived threat and mindfulness seem to act as independent factors for predicting depressive symptoms in adolescents. Mindfulness may be an effective buffer in some situations, but it is possible that in home environments of persistent and chronic stressors, mindful awareness may not act as a buffer. For example, adolescents in situations of interparental conflict who are more aware and perceptive show more internalizing issues (Harold & Conger, 1997). However, it is also possible that mindfulness aspects of attention and awareness alone are not significant enough moderators. More specifically, Baer et al., 2008 found that for non-meditating undergraduate students, three other facets of mindfulness (i.e., describing one's inner experience, non-judgment of inner experience, and non-reactivity to inner experience) were also significantly and negatively



associated with psychological symptoms such as depression while being significantly and positively associated with psychological wellbeing. Self-compassion, another important aspect of mindfulness, has also been found to be significantly and negatively associated with depression in adolescents (Bluth, Campo, Futch & Gaylord, 2017). Therefore, although the measure of attention and awareness did not act as a mindfulness moderator, another measure including non-judgement or self-compassion may show otherwise. Finally, it is also possible that learned mindfulness rather than trait mindfulness is the moderator (Greeson et al., 2015; Waszczuk et al., 2015). Although trait mindfulness may provide a foundation for mental health, mindfulness-based instruction may help to cultivate mindfulness in a way that is more beneficial for the application of these skills. For example, Greeson et al. (2015) found that for people participating in a Mindfulness-Based Stress Reduction class, lowered depressive symptoms was unrelated to trait levels of mindfulness. Additionally, various other studies utilizing mindfulness-based instruction have shown to reduce depression (Gotink et al., 2015; Kuyken et al., 2008; Teasdale et al., 2000). Therefore, perhaps training people to be more mindful can be a buffer, but trait-mindfulness may be less likely to act in this way.

The current study also found insufficient evidence for age as a moderator of the interactions between perceived interparental conflict and depressive symptoms as well as mindfulness and depressive symptoms. Although this finding is contrary to previous theory and research (Alisphaic & Hasanbegovic-Anic, 2017; Bluth et al., 2017; De Luca et al., 2003; Rhoades, 2008), it is also congruent with other studies finding age to not be a significant factor (Grant et al., 2006; Greeson et al., 2015). For example, a review of 60 different studies looking at age as moderator for the link between stressors and child/adolescent psychopathology found that age moderated this relationship in only about half of the studies (Grant et al., 2006). It is

possible that neither the passage of time through the adolescent years nor the great cognitive changes that occur within this timespan lead to significant differences in depressive symptoms. Perhaps the moderating effect of age is clearer across different stages of growth, for example comparing adolescents with children or adolescents with adults. After examining the literature on interparental conflict and internalizing issues, Rhoades (2008) found significant differences in internalizing issues when comparing children to adolescents. Therefore, maybe the differences across these major stages of the lifespan are greater than the differences found within each stage.

### **Limitations**

Along with several strengths of this study, limitations are also present. Although the study had sufficient power to detect large and medium effects, insufficient power existed to detect small effects. The sample was also not fully representative of the population, with participants mostly identifying as white, female college students from families with higher income and education than the national average (U.S. Census Bureau, 2016). Additionally, although the percentage of participants that met the cutoff for elevated depressive is similar to studies on college students (about 30%) (American College Health Association, 2009), it is higher than what is found among the general U.S. adolescent population (11.3%) (Mojtabai, Olfson, & Han, 2016). In terms of living situation, this study combined information from participants living within and outside the home. Future research may want to examine whether living situation may act as a moderator for the association between perceived interparental conflict and depressive symptoms.

Another limitation may be that the MAAS used to measure mindfulness does not measure self-compassion or non-judgement. These dimensions are often used in measuring mindfulness and studies measuring these have found them to be associated with lower depressive symptoms

(Baer et al., 2008; Bluth et al., 2017). It is also possible that measuring learned mindfulness rather than trait mindfulness could provide a different view for mindfulness as a moderator. Including these different measures of mindfulness in future studies may provide a fuller understanding of whether, and if so specifically how, mindfulness interacts with perceived interparental conflict in relation to depressive symptoms for adolescents. State mindfulness would be another area to consider as well. State mindfulness is the concept that mindfulness is not static and rather fluctuates across circumstances within person (Tanay & Bernstein, 2013). Testing state mindfulness could help develop a fuller picture of the role mindfulness might play for adolescents perceiving interparental conflict. Also for future studies, including the full age range of adolescents (i.e., 10 – 25 years old) may help to better develop age as a moderator. As this entire age span is known for continued cognitive and executive function growth, moderation effects may be more likely to be observed across a larger age range (Steinberg, 2014).

## **Conclusions**

The current study adds to the existing literature on the associations between perceived interparental conflict, mindfulness, and depressive symptoms for adolescents. The study supported results from previous research, finding significant associations between perceived interparental conflict and depressive symptoms, showing that specifically, perceived threat predicts depressive symptoms in a significant and positive way. Although causality cannot be determined, this result indicates that perceived threat may be a risk factor for adolescent depression. Therefore, behavioral health therapists and clinicians working with high conflict families containing adolescents may want to assess for perceived threat during treatment. Additionally, the study found a significant and negative association between mindfulness and depressive symptoms. This supports past studies on mindfulness-based treatments that have

been shown to reduce depression in adolescents (Burke, 2010). This study also added to existing literature, finding that age and trait mindfulness specifically focused on attention and awareness did not significantly moderate these associations. Future research may want to examine whether other aspects of trait mindfulness (i.e., self-compassion and non-judgement) are more effective for buffering depressive symptoms in adolescents perceiving interparental conflict.

TABLE 1: Bivariate Correlations and Descriptive Statistics for Variables of Interest

	1.	2.	3.	4.	5.	6.	7.	8.	9.
Perceived interparental conflict <sup>a</sup>									
1. Threat	X	.43**	.44**	.34**	-.23**	-.01	.10	-.15	-.01
2. Self-blame		X	.37**	.24**	-.14 †	-.02	.01	-.09	-.07
3. Conflict property	X			.20*	-.02	.08	.07	-.13	-.08
4. Depressive symptoms <sup>a</sup>				X	-.45**	.11	.11	.13	-.11
5. Mindfulness					X	.02	-.08	-.09	.03
6. Age						X	-.05	.17	-.86**
Demographic control variables									
7. Sex <sup>b</sup>							X	.01	-.04
8. Family yearly income <sup>b</sup>								X	-.11
9. Living at home <sup>b</sup>									X
<i>M</i>	1.41	1.23	1.53	13.41	3.95	18	60% female	\$95,000 – \$109,000	37%
<i>SD</i>	.32	.38	.43	9.25	.64	2			

†  $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$  <sup>a</sup>Correlations use log transformed values where a means and standard deviations are raw values. <sup>b</sup> Variables were dummy coded.

TABLE 2: Main Effects Regression Analysis Predicting Depressive Symptoms

	<i>b</i>	<i>SE</i>	$\beta$
Threat	.84**	.31	.26
Self-blame	.36	.24	.13
Conflict Property	-.04	.24	-.02
Mindfulness	-.15***	.04	-.31
Age	.02	.02	.14
Sex	.06	.05	.10
Income	.01	.01	.06
Live at home	-.01	.09	-.01

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\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

TABLE 3: Summary of Series of Regression Analyses Predicting Depressive Symptoms Among Interactions

Series Number		<i>b</i>	<i>SE</i>	$\beta$
1	Threat X mindfulness	-.38	.42	-.07
2	Self-blame X mindfulness	-.10	.41	-.02
3	Conflict property X mindfulness	.02	.33	.01
4	Age X mindfulness	-.10	.13	-.06
5	Age X threat	.55	.93	.05
6	Age X self-blame	1.88	1.09	.14
7	Age X conflict property	.82	.87	.08

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

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